

LEGISLATIVE FINANCE - HOUSE / SENATE FINANCE COMM. FILES 8879

SB 18 cont.

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Table 1. Normalized versus Non-normalized Cannabinoid Averages of Illicit Cannabis Samples by Year Seized

NORMALIZED

<u>Year</u>	<u>No. Of Seizures</u>	<u>% Δ^9-THC</u>	<u>% CBD</u>	<u>% CBC</u>	<u>% CBN</u>	<u>Kilograms</u>
74	113	0.36	0.00	0.08	0.44	18013.328
75	150	0.48	0.00	0.09	1.17	67159.536
76	210	0.98	0.00	0.12	0.62	101190.992
77	251	1.76	0.00	0.10	0.74	173611.056
78	132	1.72	0.01	0.12	1.27	154532.064
79	221	1.53	0.02	0.12	1.40	71859.168
80	153	1.96	0.01	0.16	0.69	44094.656
81	250	2.11	0.02	0.18	0.98	147438.416
82	482	3.34	0.11	0.17	0.74	299883.264
83	1227	3.44	0.02	0.16	0.54	776255.744
84	1118	3.96	0.07	0.13	0.47	1258949.630
85	1613	2.63	0.14	0.09	0.52	729123.584
86	1554	2.24	0.06	0.11	0.44	669372.672
87	1691	2.23	0.23	0.11	0.33	620787.712
88	1165	3.01	0.09	0.15	0.50	120803.104

NON-NORMALIZED AVERAGES

<u>Year</u>	<u>No. Of Seizures</u>	<u>% Δ^9-THC</u>	<u>% CBD</u>	<u>% CBC</u>	<u>% CBN</u>
74	113	0.89	0.03	0.08	0.49
75	150	0.71	0.03	0.10	0.55
76	210	0.72	0.00	0.09	0.37
77	251	0.91	0.08	0.10	0.43
78	132	1.37	0.01	0.12	0.67
79	221	1.67	0.02	0.12	0.24
80	153	2.06	0.10	0.14	0.47
81	250	2.37	0.36	0.16	0.38
82	482	3.05	0.34	0.19	0.33
83	1227	3.23	0.22	0.17	0.30
84	1118	3.29	0.24	0.17	0.34
85	1613	2.82	0.28	0.14	0.23
86	1554	2.30	0.29	0.15	0.21
87	1691	2.93	0.30	0.17	0.30
88	1165	3.16	0.25	0.15	0.31

Table 2. Comparison of Non-normalized Δ^9 -THC Concentrations in Different Forms by Year Confiscated 1974 - 1988*

<u>Year</u>	<u>Loose Plant Material</u>	<u>Kilobrick</u>	<u>Buds</u>	<u>Sinsemilla</u>	<u>Thai Sticks</u>	<u>Hashish</u>	<u>Hash Oil</u>
74	1.34	0.04	--**	--**	0.54	0.86	15.88
75	1.03	0.47	1.34	--**	--**	2.31	13.09
76	1.87	0.54	3.03	--**	--**	3.28	18.82
77	1.27	0.53	1.38	3.20	4.91	1.81	18.89
78	1.47	0.96	2.11	6.28	0.49	2.51	21.31
79	1.57	0.79	3.03	3.66	0.13	2.32	20.91
80	1.02	0.63	3.81	6.40	0.05	2.58	16.56
81	1.48	0.78	3.52	6.38	--**	3.13	17.45
82	2.63	--**	5.14	7.10	4.60	2.69	19.88
83	2.94	--**	4.99	7.47	4.17	5.47	21.36
84	2.91	4.07	4.37	6.67	5.71	5.75	16.75
85	2.44	3.80	4.88	7.28	6.26	6.49	15.08
86	1.96	2.98	5.09	8.44	4.22	2.63	16.51
87	2.59	3.32	4.47	7.97	4.45	2.62	13.36
88	2.66	3.42	4.82	8.43	3.36	3.32	7.41

* All figures are given as percent by dry weight.

** No samples analyzed which were confiscated in this year.

The above averages are not normalized by weight of seizure, but are simple arithmetic means calculated by dividing the sum of the Δ^9 -THC concentrations of each form by the number of seizures of that form. These figures should be more useful in spotting trends than the normalized averages. The normalized averages (as found in Table 5) should give a better representation of what was on the street in the given years.

Figure 1: Normalized & Non-normalized THC% versus Year of Confiscation

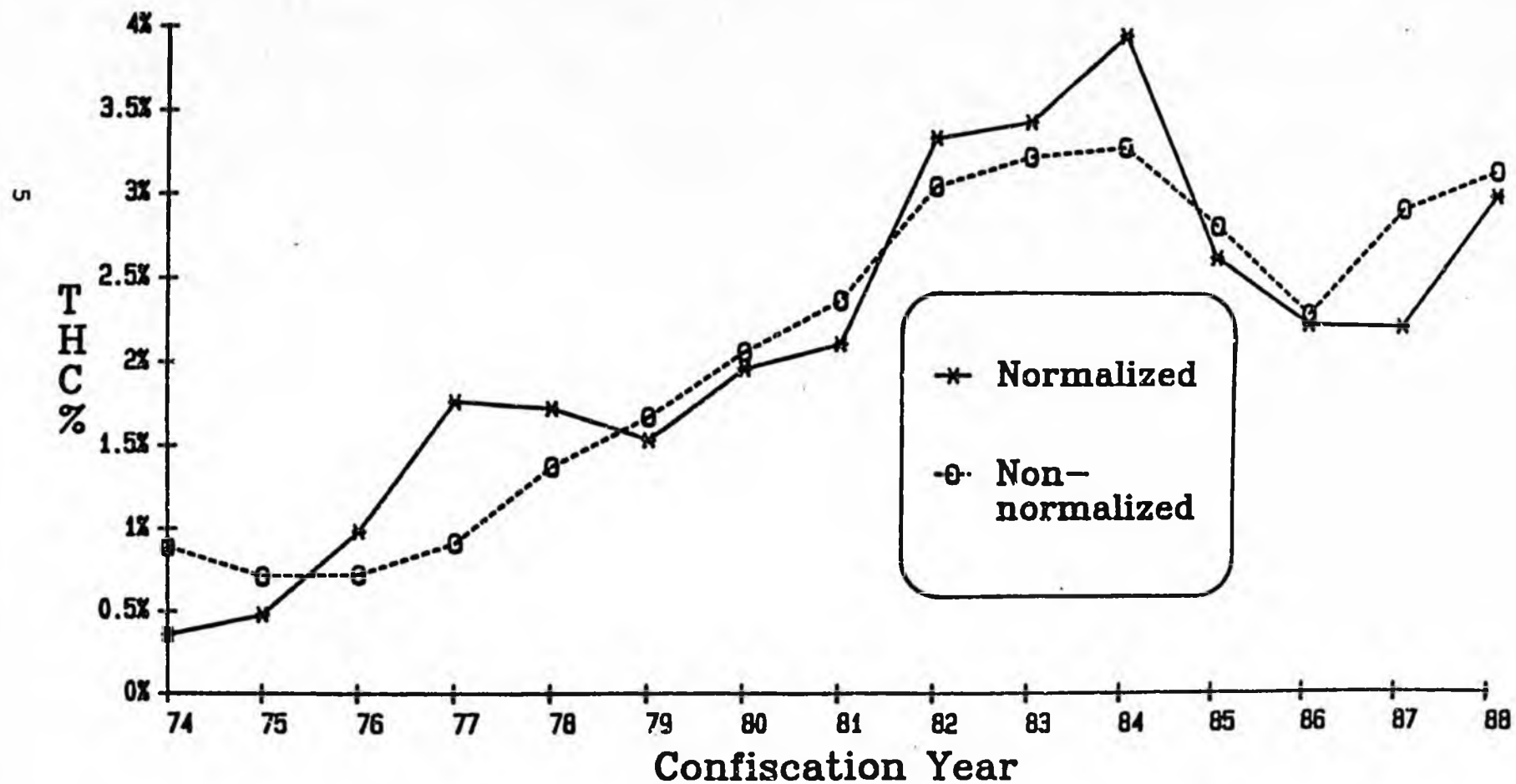


Table 3. Normalized Δ^9 -THC Averages* of Illicit Cannabis Samples Analyzed through December 31, 1988 by Year Seized and Description

YR	BD	KB	MH	SM	TS	YR/TOTAL
70	3.03(1)	0.45(182)	1.60(27)	0.00(0)	0.00(0)	0.98(210)
77	0.53(7)	0.47(165)	2.28(53)	4.25(15)	4.91(1)	1.76(251)
78	2.44(25)	1.84(60)	1.52(43)	6.28(11)	8.40(3)	1.72(132)
79	3.35(11)	1.26(18)	0.55(181)	3.52(10)	0.13(1)	1.53(221)
80	4.26(6)	0.91(5)	0.65(114)	3.00(27)	0.05(1)	1.96(153)
81	4.46(33)	0.81(3)	1.64(142)	4.10(32)	0.00(0)	2.11(250)
82	2.91(50)	0.00(0)	3.36(410)	4.64(14)	5.33(8)	3.34(482)
83	3.90(126)	0.00(0)	5.43(1076)	5.62(18)	5.19(7)	3.44(1227)
84	4.53(178)	3.84(22)	3.72(874)	5.56(36)	7.63(3)	3.76(1118)
85	5.25(106)	4.43(73)	2.50(1381)	6.48(52)	6.26(1)	2.63(1613)
86	3.58(68)	3.94(97)	2.21(1391)	10.62(32)	3.56(6)	2.24(1554)
87	4.37(109)	2.67(194)	1.95(1345)	5.84(40)	3.62(3)	2.23(1691)
88	6.00(61)	3.83(71)	2.87(951)	6.25(60)	2.11(2)	3.01(1165)

**	4.25(787)	1.66(1036)	2.74(8246)	5.86(338)	5.64(37)	2.86(10464)

Description Key:

Description; code for the physical description of samples as follows:

- MH - Marijuana; marijuana in the form of loose Cannabis plant material with leaves, stems and seeds; includes cigarettes and those samples which cannot be described otherwise.
- KB - Kilobrick; marijuana compressed into the form of a kilobrick (classical Mexican packaging); has leaves, stems and seeds.
- BD - Buds; marijuana in the form of buds of flowering tops of the Cannabis plant with seeds.
- SM - Sinsemilla; marijuana in the form of Sinsemilla; i.e., flowering tops of the female Cannabis plant with no seeds.
- TS - Thai Sticks; marijuana in the form of Thai Sticks, leafy material tied around a small stem.

* All figures are given as percent by dry weight.

** Averages include 132 samples analyzed which were seized prior to 1974. The number in parentheses indicated the number of samples analyzed.

Table 4. Normalized Δ^9 -THC Averages* of Illicit Cannabis Samples Analyzed through December 31, 1988 by Year Seized and Source

YR	FG	PD	PM	PS	ST	YR/TOTAL
76	2.46(5)	0.00(0)	0.98(205)	0.00(0)	0.00(0)	0.98(210)
77	0.78(4)	0.42(1)	1.76(241)	2.06(21)	1.32(3)	1.76(251)
78	0.78(5)	0.74(1)	1.72(109)	4.85(17)	0.00(0)	1.72(132)
79	1.76(102)	3.76(3)	1.53(44)	4.27(6)	0.31(2)	1.53(221)
80	5.11(31)	1.71(21)	1.46(77)	2.25(13)	0.46(11)	1.96(153)
81	1.79(11)	0.46(6)	2.14(177)	1.64(16)	0.52(50)	2.11(250)
82	0.00(0)	2.21(130)	3.60(226)	0.00(0)	1.63(126)	3.34(482)
83	0.00(0)	1.41(13)	3.46(824)	0.00(0)	1.89(390)	3.44(1227)
84	0.00(0)	0.00(0)	4.07(757)	0.00(0)	1.41(33)	3.98(1118)
85	0.00(0)	0.00(0)	2.80(770)	0.00(0)	1.10(843)	2.63(1613)
86	0.00(0)	0.00(0)	2.38(752)	0.00(0)	1.64(802)	2.24(1554)
87	0.00(0)	0.00(0)	2.34(1143)	0.00(0)	1.98(548)	2.23(1691)
88	0.00(0)	0.00(0)	3.00(733)	0.00(0)	4.50(432)	3.01(1165)

**	1.79(290)	0.87(207)	2.98(6334)	3.69(54)	1.67(3579)	2.86(10464)

Source:

- PM - Potency Monitoring; designates those samples received through the DEA under the scope of the Potency Monitoring Program.
- PS - Psychiatric; received through a psychiatrist or other MD from a patient having psychiatric or medical problems related to marijuana use.
- PD - Police Department; designates those samples received from police department; e.g., samples received from the Gulfport, Miss., police chief would be classified as PD; place seized would be Gulfport, Miss.
- ST - State Crime Labs; designates those samples received from state crime labs or other state agencies. In the overall printout, samples received from state agencies will be classified by the state's 2- letter abbreviation as used by the U.S. Postal Service.
- FG - Fugitive; designates samples received when no arrests were made.

* All figures are given as percent by dry weight.
 ** Averages include 132 samples analyzed which were seized prior to 1974. The number in parentheses indicates the number of samples analyzed.

Table 5. Domestic Cultivation*

Cannabis Samples Analyzed through December 31, 1988

0.0%	OF	113	SAMPLES	SEIZED	IN	1974	WAS	KNOWN	TO	BE	DOMESTIC.
0.0%	OF	150	SAMPLES	SEIZED	IN	1975	WAS	KNOWN	TO	BE	DOMESTIC.
0.0%	OF	210	SAMPLES	SEIZED	IN	1976	WAS	KNOWN	TO	BE	DOMESTIC.
0.4%	OF	251	SAMPLES	SEIZED	IN	1977	WAS	KNOWN	TO	BE	DOMESTIC.
9.1%	OF	137	SAMPLES	SEIZED	IN	1978	WAS	KNOWN	TO	BE	DOMESTIC.
6.5%	OF	221	SAMPLES	SEIZED	IN	1979	WAS	KNOWN	TO	BE	DOMESTIC.
22.9%	OF	153	SAMPLES	SEIZED	IN	1980	WAS	KNOWN	TO	BE	DOMESTIC.
51.0%	OF	250	SAMPLES	SEIZED	IN	1981	WAS	KNOWN	TO	BE	DOMESTIC.
29.0%	OF	482	SAMPLES	SEIZED	IN	1982	WAS	KNOWN	TO	BE	DOMESTIC.
31.5%	OF	1227	SAMPLES	SEIZED	IN	1983	WAS	KNOWN	TO	BE	DOMESTIC.
29.6%	OF	1118	SAMPLES	SEIZED	IN	1984	WAS	KNOWN	TO	BE	DOMESTIC.
52.2%	OF	1613	SAMPLES	SEIZED	IN	1985	WAS	KNOWN	TO	BE	DOMESTIC.
51.2%	OF	1554	SAMPLES	SEIZED	IN	1986	WAS	KNOWN	TO	BE	DOMESTIC.
32.0%	OF	1691	SAMPLES	SEIZED	IN	1987	WAS	KNOWN	TO	BE	DOMESTIC.
35.4%	OF	1165	SAMPLES	SEIZED	IN	1988	WAS	KNOWN	TO	BE	DOMESTIC.

** 35.2% OF A TOTAL OF 10464 SAMPLES SEIZED WAS KNOWN TO BE DOMESTIC.

*Includes only those samples known to be domestically cultivated. In many cases, this is unknown; therefore, these figures probably represent a low estimate.

**Percentages given are of the number of Cannabis samples analyzed by the Project which were seized in the given year.

Table 6. Arithmetic Cannabinoid Averages of Domestic Cannabis Samples by Year Seized

<u>Year</u>	<u>No. of Seizures</u>	<u>% Δ^9-THC</u>	<u>% CBD</u>	<u>% CBC</u>	<u>% CBN</u>
75	9	1.24	0.00	0.19	0.02
77	16	3.02	1.18	0.25	0.19
78	12	1.85	0.01	0.13	0.16
79	14	3.74	0.22	0.20	0.19
80	35	4.64	0.38	0.18	0.10
81	129	2.92	0.62	0.18	0.07
82	140	2.57	0.80	0.16	0.09
83	387	1.98	0.46	0.14	0.07
84	331	2.55	0.48	0.19	0.17
85	842	2.21	0.44	0.15	0.10
86	796	1.87	0.43	0.16	0.08
87	541	2.45	0.62	0.21	0.12
88	412	2.82	0.43	0.16	0.12

Figure 2: Domestic Cannabis THC% versus Year of Confiscation

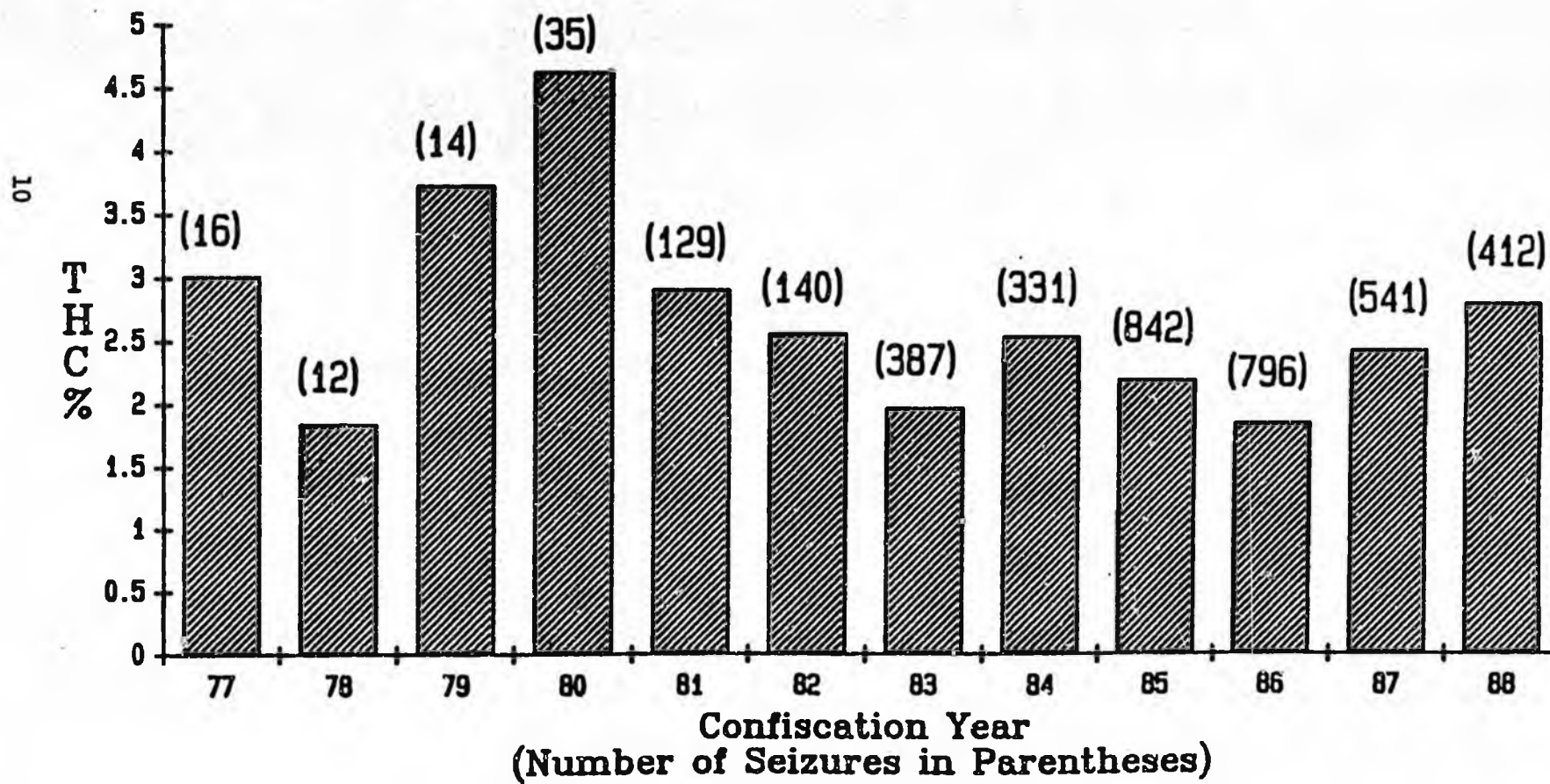


Table 7. Δ^9 -THC Averages (non-normalized*) for Domestically Cultivated Cannabis Samples Analyzed through December 31, 1988 by Year Seized at Description

YR	BD	MH	SM	YR/TOTAL
75	0.00(0)	1.24(9)	0.00(0)	1.24(9)
77	0.00(0)	0.51(1)	3.20(15)	3.02(16)
78	1.68(1)	1.42(10)	6.28(1)	1.85(12)
79	0.00(0)	3.95(4)	3.66(10)	3.74(14)
80	0.00(0)	0.72(11)	6.44(24)	4.64(35)
81	2.87(19)	1.62(90)	6.42(30)	2.92(124)
82	11.50(1)	2.04(127)	7.48(12)	2.57(140)
83	4.14(11)	1.80(370)	9.23(6)	1.98(387)
84	3.04(25)	2.05(276)	6.83(30)	2.59(331)
85	4.31(35)	1.86(767)	7.07(40)	2.21(842)
86	6.64(16)	1.60(761)	8.38(19)	1.87(796)
87	4.32(27)	2.08(486)	8.03(22)	2.45(941)
88	4.40(39)	1.78(320)	7.88(53)	2.82(412)
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**	4.22(174)	1.87(3240)	6.45(263)	2.31(3683)

Description Key:

Description; code for the physical description of samples as follows:

MH - Marijuana; marijuana in the form of loose Cannabis plant material with leaves, stems and seeds; includes cigarettes and those samples which cannot be described otherwise.

BD - Buds; marijuana in the form of buds of flowering tops of the Cannabis plant with seeds.

SM - Sinsemilla; marijuana in the form of sinsemilla; i.e., flowering tops of the female Cannabis plant with no seeds.

* Weight of Seizure not known. Figures are percent by dry weight.

** Averages include 19 samples which were seized prior to 1975. The number in parentheses indicates the number of samples analyzed.

Table 8. Δ^9 -THC Averages (non-normalized*) for Domestically Cultivated Cannabis Samples Analyzed through December 31, 1988 by Year Seized and Source of Confiscation

YR	FG	PD	PM	PS	ST	YR/TOTAL
75	0.00(0)	0.00(0)	1.24(9)	0.00(0)	0.00(0)	1.24(9)
77	0.00(0)	0.00(0)	3.20(15)	0.31(1)	0.00(0)	3.92(16)
78	0.00(0)	0.74(1)	1.68(1)	1.98(10)	0.00(0)	1.89(12)
79	3.48(11)	4.71(3)	0.00(0)	0.00(0)	0.00(0)	3.74(14)
80	6.48(20)	1.56(10)	0.00(0)	2.67(1)	3.62(4)	4.64(35)
81	1.70(1)	0.00(0)	3.33(88)	0.00(0)	2.04(40)	2.92(129)
82	0.00(0)	2.04(7)	5.12(15)	0.00(0)	2.28(118)	2.57(141)
83	0.00(0)	1.40(2)	1.11(1)	0.00(0)	1.99(384)	1.08(387)
84	0.00(0)	0.00(0)	0.00(0)	0.00(0)	2.53(331)	2.53(331)
85	0.00(0)	0.00(0)	3.21(2)	0.00(0)	2.21(840)	2.21(842)
86	0.00(0)	0.00(0)	5.98(3)	0.00(0)	1.85(793)	1.87(796)
87	0.00(0)	0.00(0)	3.15(15)	0.00(0)	2.43(526)	2.45(541)
88	0.00(0)	0.00(0)	0.00(0)	0.00(0)	2.82(412)	2.82(412)
**	3.89(48)	2.26(25)	3.38(149)	1.90(12)	2.24(3049)	2.31(3683)

Description Key:

Description; code for the physical description of samples as follows:

- PM - Potency Monitoring; designates those samples received through the DEA under the scope of the Potency Monitoring Program.
- PS - Psychiatric; received through a psychiatrist or other MD from a patient having psychiatric or medical problems related to marijuana use.
- PD - Police Department; designates those samples received from police department; e.g., samples received from the Gulfport, Miss., police chief would be classified as PD; place seized would be Gulfport, Miss.
- ST - State Crime Labs; designates those samples received from state crime labs or other state agencies. In the overall printout, samples received from state agencies will be classified by the state's 2-letter abbreviation as used by the U.S. Postal Service.
- FG - Fugitive; designates samples received when no arrests were made.

* Weight of seizures not known. Figures are percent by dry weight.

** Averages include 19 samples analyzed which were seized prior to 1975. The number in parentheses indicated the number of samples analyzed.

Table 9. Average Concentrations* of Four Cannabinoids Found in All Hashish Samples Analyzed by the Project through December 31, 1988

<u>Year</u>	<u>Seizures</u>	<u>% Δ^9-THC</u>	<u>% CBD</u>	<u>% CBC</u>	<u>% CBN</u>
74	53	0.86	1.99	0.28	2.28
75	88	2.31	2.60	0.38	1.67
76	52	3.28	3.23	0.37	2.54
77	44	1.81	2.94	0.22	1.72
78	51	2.15	4.03	0.23	2.07
79	43	2.32	5.45	0.16	1.76
80	37	2.58	7.58	0.38	1.88
81	13	2.91	6.51	0.28	1.90
82	32	2.69	6.73	0.10	1.45
83	47	5.47	6.15	0.13	1.62
84	59	5.75	3.25	0.31	1.59
85	41	6.49	2.30	0.34	1.33
86	53	2.63	1.10	0.30	1.27
87	63	2.62	1.63	0.19	1.24
88	25	3.32	1.76	0.22	1.04
TOTAL	**737	3.00	3.46	0.27	1.73

* All figures are given as percent by dry weight.

** Averages include 36 samples analyzed which were confiscated prior to 1974.

The above averages are not normalized.

Table 10. Average Concentrations* of Four Cannabinoids Found in All Hash Oil Samples Analyzed by the Project through December 31, 1986

<u>Year</u>	<u>No. Of Seizures</u>	<u>% Δ^9-THC</u>	<u>% CBD</u>	<u>% CBC</u>	<u>% CBN</u>
74	19	15.88	10.87	1.41	3.91
75	29	13.09	6.71	0.86	4.21
76	18	18.82	10.25	1.16	5.07
77	17	18.89	6.83	0.57	4.98
78	9	21.41	6.06	1.39	5.07
79	9	20.91	0.57	1.54	6.00
80	8	16.56	8.67	1.02	5.30
81	5	17.45	10.16	1.35	3.53
82	8	19.88	8.28	1.58	4.34
83	30	21.36	3.25	1.47	4.57
84	33	16.75	1.36	1.06	4.31
85	25	15.08	0.42	0.96	5.08
86	23	16.51	2.10	1.52	3.18
87	22	13.36	0.29	0.99	3.95
88	11	7.41	1.19	0.64	2.32
TOTAL	**275	17.01	4.54	1.13	4.37

*All figures are given as percent by dry weight.

**Averages include 9 samples analyzed which were seized prior to 1974.

Table 11. Number of Seizures and Normalized Average Delta-9-THC Concentrations of All Samples Received from each DEA Laboratory and Analyzed by the Project through December 31, 1988

LAB	CANNABIS		HASHISH		HASH OIL		TOTAL
	NO. OF SEIZURES	NORMALIZED -THC CONTENT	NO. OF SEIZURES	NORMALIZED -THC CONTENT	NO. OF SEIZURES	NORMALIZED -THC CONTENT	NO. OF SEIZURES
STRL	122	3.76%	95	2.01%	32	5.13%	239
NERL	289	2.61%	142	2.76%	46	20.22%	477
MARL	77	2.82%	12	0.48%	1	16.15%	90
SERL	1716	3.06%	110	2.10%	127	14.50%	1962
NCHL	306	2.40%	43	2.96%	17	22.01%	366
SCRL	1792	2.95%	36	1.44%	13	18.06%	1841
SWRL	1397	1.81%	129	3.94%	16	12.11%	1541
WRL	486	5.20%	143	1.33%	26	24.77%	655
OTHER	4279	1.68%	19	0.94%	7	28.09%	4305
TOTAL	10464		737		275		11476

KEY: STRL - SPECIAL TESTING AND RESEARCH LABORATORY
 NERL - NORTHEAST REGIONAL LABORATORY
 MARL - MID-ATLANTIC REGIONAL LABORATORY
 SERL - SOUTH EAST REGIONAL LABORATORY
 WRL - WESTERN REGIONAL LABORATORY
 SCRL - SOUTH CENTRAL REGIONAL LABORATORY
 NCHL - NORTH CENTRAL REGIONAL LABORATORY
 SWRL - SOUTHWEST REGIONAL LABORATORY

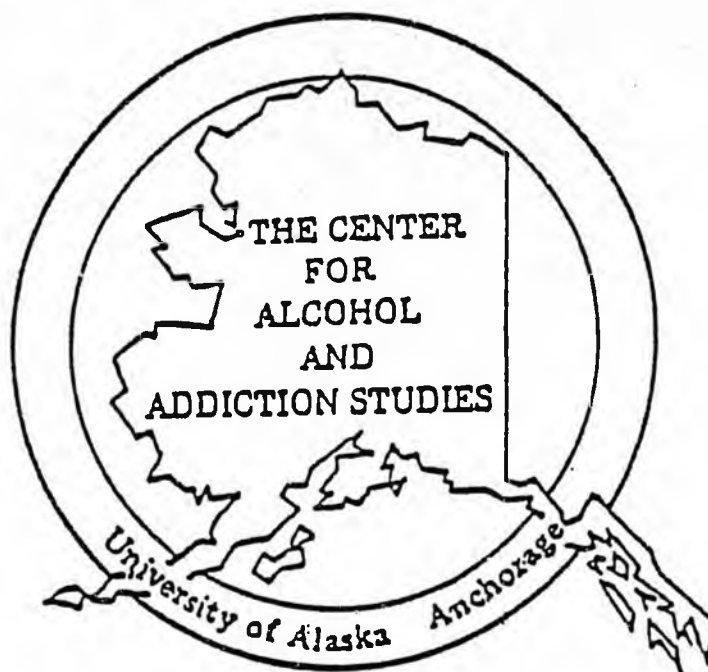
Table 12. Number of Seizures and Normalized Average Delta-9-THC Concentrations of Samples Received from Each Laboratory and Analyzed by the Project October 1, 1988 through December 31, 1988

LAB	CANNABIS		HASHISH		HASH OIL		TOTAL
	NO. OF SEIZURES	NORMALIZED -THC CONTENT	NO. OF SEIZURES	NORMALIZED -THC CONTENT	NO. OF SEIZURES	NORMALIZED -THC CONTENT	NO. OF SEIZURES
STRL	1	2.90%	0	0.00%	0	0.00%	1
NERL	13	2.53%	0	0.00%	0	0.00%	13
SERL	21	1.60%	3	2.18%	0	0.00%	24
NCRL	8	2.97%	0	0.00%	0	0.00%	8
SCRL	64	3.30%	0	0.00%	0	0.00%	64
SWRL	26	2.65%	2	4.26%	1	5.25%	29
WRL	61	4.10%	2	2.21%	0	0.00%	63
OTHER	310	3.79%	0	0.00%	0	0.00%	310
TOTAL	504		7		1		512

KEY: STRL - SPECIAL TESTING AND RESEARCH LABORATORY
 NERL - NORTHEAST REGIONAL LABORATORY
 MARL - MID-ATLANTIC REGIONAL LABORATORY
 SERL - SOUTH EAST REGIONAL LABORATORY
 WRL - WESTERN REGIONAL LABORATORY
 SCRL - SOUTH CENTRAL REGIONAL LABORATORY
 NCRL - NORTH CENTRAL REGIONAL LABORATORY
 SWRL - SOUTHWEST REGIONAL LABORATORY

THE FOLLOWING DOCUMENT HAS
NOT BEEN FILMED BUT IS
AVAILABLE IN THE ORIGINAL
FILE

**DRUG-TAKING BEHAVIOR AMONG ALASAKAN YOUTH - 1988:
A FOLLOW-UP STUDY**



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Abuse, Department of Health and Social Services, Juneau, Alaska**

Ben Segal
3/16/89

Preface

Research findings are an important, but often overlooked element in helping to shape program and policy planning. This research, sponsored by the State Office of Alcoholism and Drug Abuse, Department of Health and Social Services, is the second study of drug-taking behavior among Alaskan youth in grades 7-12, designed to provide local and State policy makers and planners with research information to aid in developing initiatives for addressing smoking, drinking, and drug use among early adolescents and teenagers.

This report furnishes information on both the extent and patterns of drug, alcohol, and tobacco use among Alaskan youth. This document primarily concentrates on describing demographic variations in the extent of drug, alcohol, and tobacco use among students in grades 7-12, and compares the major findings with those reported from an earlier survey. Future reports will also provide a more indepth analysis of some of the findings described in this document.

Knowledge of the extent, or prevalence of drug use, is basic to planning strategies to prevent or reduce drug-taking behavior among Alaskan youth. Prevalence, as used here, represents an estimate of the number or proportion of students in the state who reported having had experience with one or more illicit chemical substances, alcohol, or tobacco, in the form of cigarettes or smokeless or chewing tobacco. In the sections to follow the findings are presented on demographic variations on the prevalence of drug-taking behavior related to basic planning units - grade, gender, ethnicity, and regions. It is anticipated that this information will be utilized to help coordinate a comprehensive and coordinated approach that reduces and prevents drug-taking behavior among Alaska's most important resource - it's youth.

Bernard Segal, Ph.D.
Principle Investigator

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Patterns of Drug-Taking Behavior Among Alaskan Youth-1988:
A Follow-Up Study

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Chapter 1 Introduction

Drugs Use in the United States

The problem of drug use¹ within the United States has come to be one of the more highly publicized yet least understood phenomena among contemporary health and social problems. This state of affairs is directly related to the rather rapid and dramatic increase in drug use, particularly among youth, over the past twenty to thirty years. The problem of drug use emerged so rapidly that it initially precluded any concentrated attempts to develop an understanding of how and why drugs became incorporated so quickly into the national life-style. Early research efforts consisted largely of studies that attempted to identify psychosocial correlates of drug use. Few studies attempted to gain data about the nature and extent of drug use. Instead, efforts were mainly directed at determining the extent to which drug users, primarily college students, were deviant - both psychologically and socially (Anglin, Thompson, & Fisher, 1986; Segal, Huba, & Singer, 1980). Many of these studies, however, often yielded contradictory and piecemeal findings and, for the most part, failed to provide adequate information to help direct appropriate and relevant countermeasures. It was not until the late 1960s that efforts began to shift away from research which reacted to the problem, to research that attempted to gain a perspective on the problem.

In 1966 the National Institute on Drug Abuse (NIDA), in order to begin to achieve a perspective on drug use within the United States, sponsored a large nationwide study of adolescents to acquire information about the nature and extent of drug use among the nation's high school seniors (Johnston, 1973). This project has since evolved into an annual study, of which the latest report was released 1987. In 1977, NIDA commissioned the first national household survey designed to monitor the extent of illicit drug use in the nation among youth (ages 12-17), young adults (ages 18-25),

¹Since illicit drug use constitutes the problem to be addressed within this research, the terms 'drug abuse,' 'drug use,' and 'drug-taking behavior' will be used interchangeably in the text of this document.

and adults (ages 26+) (Cisin, Miller & Harrell, 1978). The national survey has since been maintained, with the latest findings having recently been released that describes the pattern and prevalence of drug use in the nation during 1985 (NIDA, 1988). These studies, together with other survey research funded by NIDA (summarized in Richards, 1981), have provided a clearer perspective on the nature and extent of drug use in the United States.

Drug Use in Alaska

Alaska, however, was not included in any national study. Because information about the nature and extent of drug use within Alaska was lacking, there was no data base or framework to measure changes in patterns and prevalence of drug use over given time periods. Nor was there a basis for comparing levels of drug use within the state to prevalence statistics reported for the 48-contiguous states ("lower-48" states). The need for a broad-based epidemiological study in Alaska was imperative because Alaska, with its predominantly youthful population and its "last frontier" environment, was alleged to have a higher prevalence of drug use than in the lower-48 states.

The need to gain information about drug use in the state was realized by the State Office of Alcohol and Drug Abuse (SOADA) when, in 1981, it commissioned a study by the Center for Alcohol and Addiction Studies (CAAS) to ascertain the nature and pattern of drug-taking behavior in the state. This study was undertaken in two ways: (1) a survey of the general population 18 years and older, and (2) a survey of school age youth in grades 7-12. The latter research involved studying eight widely-separated urban and rural school districts representative of the different regions of Alaska, except for the Aleutian chain. The locations were Anchorage, Barrow, Bethel, Fairbanks, Juneau, Kotzebue, Nome, and Sitka. These sites were selected in order to obtain a representative sample of the state's junior and senior high school students. This research also served to establish baseline information about drug-taking behavior among Alaskan youth so that comparisons could be made with findings from subsequent studies.

The results of both studies were reported in 1983 (Segal, 1983a, 1983b). Briefly, the findings indicated that lifetime use of a drug (ever tried) was higher among school age youth between 12 to 17 years, and adults 18 and older, than among comparable groups found in the lower 48-states. These findings indicated that allegations of higher levels of drug use in Alaska were substantiated. The findings from these two studies have formed a frame of reference that helped to address the problem of drug use in the state.

The School Follow-up Study

The present research, also under the auspices of SOADA, is a follow-up study of the initial survey research undertaken during 1981-1982 of youth in grades 7-12. The decision to resurvey school age youth was based on the following reasons: (1) accessibility of the survey population, (2) cost, (3) the need to determine how the pattern and extent of drug use compared to previous findings, and (4) an attempt to determine what effects prevention efforts, introduced in the interval between the initial and follow-up surveys, have had. The specific aims of the current study were: (1) to assess the nature and extent of current drug-taking behavior among Alaskan youth, (2) to compare the current findings with the previous study of drug-taking behavior, (3) to examine psychosocial characteristics associated with use and nonuse of chemical substances, and (4) to explore some of the implications that the findings have for prevention of substance abuse. Some of the study's specific objectives are:

- (1) To obtain demographic information about adolescents in grades 7 - 12 relative to use or nonuse of chemical substances.
- (2) To obtain information on the prevalence of specific chemical substances, including alcohol and tobacco.
- (3) To obtain data relating to patterns of drug-taking behavior, including alcoholic beverages and tobacco products, and
- (4) To obtain information about some of the consequences of drug use.

The information presented in this follow-up study will provide a more contemporary and more comprehensive understanding of drug-taking behavior and will also serve as a source of information to help human service providers increase their effectiveness in dealing with substance abuse. The findings also have implications for planning and policy development by governmental authorities, as well as value to local and state governments and governmental agencies in their efforts to understand and deal with the health, social, economic and legal consequences of drug-taking behavior.

Chapter 2

A Historical Review of Drug Use in Alaska

Drugs and the Oil Pipeline Construction Period

As early as 1973, in planning for the potential effect of drug use anticipated from the construction of the oil pipeline to start in 1974, the State of Alaska recognized that it was confronting a 'potential non-normal crisis situation, and will have to adopt unusual methods to cope with this unusual situation' (Poppe, 1973, p. 1). Before this time drug use was not considered to be a significant problem in the state. Except for marijuana use, and a few heroin addicts, the state considered itself to be isolated from the large-scale drug problems that were being experienced in the lower-48 states because of its relative geographic separation from the lower-48 states. By the early 1970s, however, there was evidence that the drug-taking behavior that had permeated school age youth in the lower-48 states had started to manifest itself in Alaska. Porter and her associates (1973), for example, found that 36.6% percent of Anchorage's school children (grades 6-12) had used one or more drugs other than alcohol or tobacco at least once, and that 19.8% had used drugs during the past seven days prior to being surveyed; 4.5% had also reported using drugs four or more times in the last seven days. Marijuana was the most commonly used drug, followed by solvents, stimulants, amphetamines, hashish, mescaline, and peyote. It was noted in the study that multiple drug use was evident, and that the prevalence of reported drug use exceeded such reports for students in Dallas, Texas, and in San Mateo, California (Porter et al., 1973).

The importance of these findings were apparently overlooked in the state's efforts to prepare for the health, social, and economic consequences of the pipeline construction. Had they been utilized they could have indicated that there was an immediate need to address drug use. This would have minimized the adverse effects of substance abuse on youth during the pipeline period. Additionally, Porter et al.'s (1973) finding could have served as a base line to assess any changes in drug-taking behavior among school age youth that occurred in succeeding years.

Alaska, however, did not take any specific steps to ready itself for this projected increase in drug use, and was thus unprepared for the dramatic changes it was to undergo with respect to drug use in the state. Instead, the state focused its resources on the problems resulting from a significant increase in alcohol consumption, and only limited attempts were made to assess or to begin to deal with other forms of drug use. The state was especially hampered in its effort to respond to the drug problem because there was little information available about drug use in the state to enable health planners to anticipate needs. The State Office of Drug Abuse, which was then charged with the responsibility for compiling statistics, and with developing treatment and prevention strategies, could only estimate the extent of drug use in Alaska in the mid 1970s. It reported as follows:

In Alaska, the major drug abuse problem is multiple drug use - that is, the use of a combination of drugs which may also include alcohol. This problem is the most severe both in terms of numbers of users, and in the potential for causing physical damage.

It is difficult to describe the drug-abusing population in Alaska. Clearly, young people are involved, and they show up most frequently in arrest and treatment statistics. Young adults and middle-aged individuals (particularly women) also impact the treatment and social service system, but their numbers are not known.

Native substance abuse rates appear to be higher than non-native rates, but this may be partially a reflection of greater Native use of public social service agencies as opposed to private physicians.

The major substances abused after multiple abuse are tranquilizers and anti-depressants, primarily among urban, non-native females age 36-50; and narcotic analgesics, including heroin and codeine. Prescription medications made up a large number of the cases in this category.

The precise nature and extent of the drug abuse problem, is not

clear at this time. It is anticipated that . . . the coming year (will) give . . .
(a) more accurate picture (State Office of Drug Abuse, 1975, pp. 1-3).

By this time, however, the state had begun to experience the initial effect of the oil pipeline construction project, and the information it needed to deal with drug use was late in coming. Additionally, what information that was derived was considered to be incomplete because of the limited population it was obtained from, and because "the rapidity of social and economic change in the state invite caution in interpreting the . . . statistics (State Office of Drug Abuse, 1976, p. 21)." More importantly, was that the lack of this information meant there was no way of precisely determining to what extent the incidence and prevalence of drug use in the state was affected by the construction of the pipeline¹.

That the construction of the transalaska pipeline (1974 to 1978) had an effect on drug use in the state is undisputable. This effect is well illustrated in a report by the Alaska State Troopers in 1976 which described the problem of drug use as "growing to such magnitude that illicit drugs were coming into Alaska by every conceivable means imaginable, and the drugs were being distributed to virtually every city and village in Alaska" (p. 2). But because reliable data were lacking to serve as a baseline to gauge what changes took place, this lack obstructed any attempts to identify related impacts that may have occurred in the state. It therefore became difficult to accurately determine the extent to which the pipeline contributed to the increase in drug use, and to identify the adverse health, social, and economic impacts related to drug use. Only general estimates or qualitative accounts of events were possible.

¹It should be noted that the lack of information about who impacts the treatment and social service system, with specific respect to alcohol and drug-related problems, has since been rectified. A statewide management information system (MIS), developed by the State Office of Alcoholism and Drug Abuse (SOADA), became operational in 1983, and important data about client utilization of alcohol and drug treatment programs has since been reported by SOADA.

Lonner (1983), in a comprehensive review of the health and social impacts of substance abuse during the pipeline construction period, described the few years of the pipeline construction as follows:

(It) . . . resulted in a new population entering Alaska which, because of its work force character (younger 20-29 and older 44-59, single, male, skilled and unskilled), exaggerated (through massive over-representation of these characteristics) the already skewed character of the resident Alaska population. Placing this new population atop the existing population, given some level of interaction between them, and compounding this situation with the excitement, wages, and other features of the project resulted in very expectable outcomes. (p. VIII - 8)

One of the outcomes of this situation was a rise in the level of substance use in the state, especially marijuana and cocaine. Lonner (1983) indicated that the use of cocaine and marijuana was probably directly related to the prevalence of money, and to the previously derived (drug) habits pipeline workers brought with them to Alaska. A general assessment of the changes that took place in the state that were largely related to the construction of the pipeline were outlined by Lonner:

1. An increase in marijuana use among the young.
2. An increase in concurrent poly-drug use (e.g., alcohol, marijuana and cocaine) resulting in a number of disabilities.
3. A lowering of the age for beginning drug use.
4. An increase in petty crimes related to obtaining money for drugs.
5. A continuing or increased tolerance for alcohol as a substance of choice for young people, particularly when abandoning or diminishing use of other substances and emulating the behaviors of their parents.
6. A continuing disapprobation of drugs by parents but more tolerance of youthful drinkers.
7. Continued excessive use of licit drugs.
8. Increasing penetration of all age groups of cocaine, based on ability to pay.

Attempts by the state to estimate drug use, beginning in 1976, were initially made by evaluating information about clients who entered treatment programs funded by state agencies. Although it is difficult to generalize from such data, it nevertheless provided some basis for describing drug use. These statistics indicated that out of 491 clients who entered a drug treatment program between July 1974 and June 1975, the largest number were admitted for a heroin related problem (31%). Problems with marijuana were second (12%), followed by amphetamines (10%), hallucinogens (4%), barbiturates (3%), and cocaine (2%). Based on these findings it was concluded that "drug abuse problems in Alaska appear to be increasing . . . and (are) reflected in a dramatic increase in heroin addicts entering treatment (State Office of Drug Abuse, 1976, p. 27)." As a result of these findings the State Office focused its efforts on addressing this addiction problem, investing both funds and resources to support established narcotic drug treatment programs and to start new ones.

The State Office of Drug Abuse also recognized that it lacked hard data on the nature of drug use in the state, particularly with respect to the impact of the pipeline on drug-taking behavior. In lieu of such data the State Office provided qualitative information, in the form of anecdotal reports from communities directly impacted by the pipeline construction. The report attempted to identify the treatment, rehabilitation and prevention needs that were perceived as necessary to combat substance abuse.

The description of the problems faced by the Municipality of Anchorage provided an excellent characterization of the problems that the state as a whole was experiencing (State Office of Drug Abuse, 1976):

Youth in the city of Anchorage, who constitute almost 40% of the population, are raised in a boomtown atmosphere that fosters immense cultural and communal dislocations. Anchorage as the center of the population in the state of Alaska and major transportation network for the entire state, has experienced an accelerated growth in population due to the discovery of oil on the

Northern Slope and concomitant pipeline construction activities. It is a city that is rapidly being transformed from the community it was a few short years ago to a rapidly growing metropolitan area with all the inherent problems of such growth.

Population growth in the Anchorage area increased by six percent between the first two quarters of 1975 and last two quarters of the same year. Most of that growth is largely due to immigration of a highly transient population seeking the wealth they had dreamed of in the 'lower forty-eight'. Many are single, unattached pipeline construction workers, who at peak season work nine week shifts on the pipeline. Many return to Anchorage for a two week rest and recuperation with more money in their pockets than they'd ever dreamed of earning. At this time they begin venting their frustrations in any ways available.

Many of these new immigrants as well as Alaskans must live separate from their families during these nine week periods. Housewives are often left alone with small children in desperate isolation during the long and dark winter months without the familiar support of family and friends. The additional stresses imposed by this life-style are destructive to one degree or another on all but the most solid relationships between people. The price being paid for the boom is reflected in such social indicators as the increasing divorce rate in Anchorage; the rapidly increasing reports of child abuse and neglect; and reports of increasing school vandalism in the city to the extent that armed security guards are being permanently stationed in city schools.

Many newcomers to the area were strong, independent people seeking increased opportunities. At the same time many new arrivals can only be considered 'misfits' who desperately see Alaska as their last chance for life improvements. Many of these people have brought with them a life-style of misery which is further intensified by the apparent abundance of others surrounding them. One measure of the depth of frustration and powerlessness felt by

these people are indications of increasing drug use.

The severity of the problem is increasing and is reflected by the increase of heroin among youth. As the incidence, as well as the social and economic costs of drug abuse steadily rises, the need for resources to combat drug abuse problems becomes imperative. (pp.10-14)

By the time the state organized its efforts to fully combat the problem of drug abuse the pipeline construction period was over, and some of the effects were immediately noticeable. Lonner (1983) indicated that following the pipeline period, which ended in late 1978, a variety of changes were noted with respect to substance abuse:

1. A decline in the range of available drugs, particularly amphetamines, tranquilizers, and LSD.
2. A decline in the prevalence of cocaine due to money nonavailability.
3. A stabilization of marijuana use, particularly in the 18-30 year old group.
4. A lowering in the age of drug experimentation.
5. Increasing resemblance between parents' and children's substance-of-choice, particularly alcohol and marijuana, as children mature.
6. A greater variation and differentiation of habits and fads among younger populations (health fads, religions, etc.) (p. VIII-38).

The full impact that the pipeline construction era had on the state, however, with respect to the health, economic and social consequences of substance use and abuse, was not fully realized until 1979. At that time the newly formed State Office of Alcoholism and Drug Abuse (SOADA), which was created by the legislature in 1977 to coordinate the state's efforts to combat substance abuse, began to compile data that allowed it to assess the nature and extent of drug use and abuse in Alaska. SOADA's aim was to not only to attempt to use this information to identify populations at risk of becoming abusers, but also to use it to begin to

develop treatment and prevention strategies. Additionally, SOADA began to formulate new data gathering procedures that would help to make possible a conclusive analysis of the extent of drug use in the state.

The initial results of SOADA's analysis were reported in its Drug Abuse Plan for 1979 (SOADA, 1979), which represented the first effort to assess comprehensively the nature and extent of drug use in the state, and to characterize some of the health, social and economic consequences that substance abuse had in Alaska. What was revealed was that there was a substantial change in the nature of drug-taking behavior and its subsequent effects. On the one hand the incidence and prevalence of drug use rose considerably after the start of the construction of the pipeline, and the adverse impacts of such use, such as drug-related arrests, deaths, accidents, treatment admissions, etc., rose accordingly. On the other hand, subsequent to the conclusion of the pipeline, these figures showed declines, but nevertheless remained at a level that was higher than before the impact of the pipeline.

There was thus little doubt that the pipeline construction period left a substantial legacy, both positive and negative, on the state. With respect to substance abuse, it appears not to only have reinforced those drug-taking behaviors that had been established, but to have also introduced new patterns of use, and to have spread such behavior to all segments of Alaskan society, particularly to the younger members of Alaska's population.

Patterns of Drug Use and Some Health, Social and Economic Impacts

ALCOHOL

The high level of alcohol consumption in Alaska, represented by a per capita rate of 4.58 gallons of absolute alcohol for persons 19 years and older in 1982, was the highest in the nation when cross-border sales are taken into account. The national figure for per capita sales of alcohol for persons 18 and older is 3.20 gallons; in Alaska it is 3.93 gallons. In 1958 the per capita figure for alcohol sales in Alaska for persons 19 and older was 2.52 gallons. Midway into the pipeline years, in 1976, the figure was 3.94 gallons, and after the pipeline, in 1979, it was 3.72 gallons. Once the figure

rose, it continued to climb. The fact that Alaskans have one liquor outlet for every 200 persons 19 years old or older, or one outlet for every 312 people of all ages, ratios that are among the highest in the nation, helps to insure that an adequate supply of alcohol is available for consumption. Additionally, given that the tax base for alcohol increased only twice during the last 19 years, the cost of alcohol is relatively modest compared to other beverages.

The health, social and economic consequences associated with this high level of alcohol consumption make alcohol abuse the state's primary health and social problem. The effect that alcohol abuse has on the state in terms of human welfare is extensive. In economic terms the problem is estimated to cost the state over \$200 million annually (DHSS, 1983). Some of the health and social impacts associated with excessive alcohol consumption have been listed as follows (Department of Health and Social Services (DHSS), 1983):

1. 55% of all crime in Alaska is alcohol related.
2. 78.9% of all violent felons in 1980 were using alcohol at the time of their offense.
3. During 1979-1982, youth 20 and under accounted for 16% of all alcohol related fatalities and for 15% of alcohol related accidents while comprising only 2.9% of all licensed drivers.
3. 40% of all arrests in 1982 were for alcohol related offenses.
4. 52% of all fire deaths are estimated to be alcohol related.
5. 80% of the suicides in Alaska were alcohol related in 1981.
6. 68% of all drownings in Alaska are alcohol related.
7. One-third of all child abuse cases are estimated as alcohol related.

In all, the problem of alcohol abuse is a significant one for the state, and efforts to combat it have recently intensified. An increase in the budget by the legislature for the State Office of Alcoholism and Drug Abuse in 1981, implementation of prevention programs in schools, public education campaigns, expanded treatment programs, development of rural treatment programs, revised alcohol legislation, increased penalties

for driving while intoxicated (DWI) offenses, and educational programs for service providers, among many other efforts, have all contributed to increase the level of awareness about alcohol abuse and alcoholism in the state, and have helped to counteract some of the serious adverse effects that alcohol abuse has in the state. In terms of state expenditures, it has been estimated by SOADA that in 1986 the state spent \$12.60 for every dollar collected in alcohol tax on alcohol-related problems. When, however, the total revenue was 1.45 million dollars, the amount allocated to combat the problem appears relatively modest.

DRUG ABUSE

The use and abuse of other drugs in Alaska does not present the same level of problems that alcohol consumption does. Nevertheless, there have been indications that drug use is extensive, and that the health, social and economic impacts are increasing.

Until recently estimates of drug use in Alaska were not obtained from samples of the general population. Instead, SOADA, which was responsible for tabulating data on drug use, relied on obtaining data from indirect indices, that is, characterizing and analyzing data that were believed 'to relate to drug use in such a way that changes in the indicators correspond to change in actual drug abuse patterns' (SOADA, 1979, p.1). It was assumed that if a number of indicators were analyzed together, and if consistent patterns were observed, over time, then these indirect indicators could have provided a reasonably reliable indication of the nature and extent of drug abuse within the state. While such a procedure may provide data indicative of a special population of drug abusers, the use of such data to reflect on the extent of prevalence of drug use among the general population is very restricted. But even if such data cannot be used to generalize to the population as a whole, the data nevertheless provides information pertinent to a needs assessment, and yields information relevant to the full scope of prevention and treatment activities.

The State Office of Alcohol and Drug Abuse has selected a variety of indicators to estimate the extent of drug abuse in the state. Some of the

indices are: drug-related mortality data, drug treatment program admission statistics, mental health data, and criminal justice data.

Drug Treatment Program Data: 1982-1983

The initiation of a new management information system by SOADA in 1982 enabled the State Office to accurately assess all client admissions to state funded programs. Between October 1, 1982 and September 30, 1983, 13,400 admissions were reported by the 35 alcohol and drug programs funded by state monies. Of these, 9,681 were unduplicated admissions. Evaluation of these data revealed that out of a subgroup of 12,711 cases, 6.44% were for drug-related problems. (Alcohol-related problem accounted for the remaining number of cases.)

Surprisingly, drug-related admissions accounted for a relatively small percentage of cases in proportion to alcohol-related admissions, and of those drug-related cases that come to the attention of treatment programs, problems with marijuana and cocaine represented the largest number of cases.

Criminal Justice Data

Although criminal justice data are available, it should be noted that problems exist with utilizing such data. Because Alaska's drug laws and enforcement policies have changed over the past few years, it is difficult to determine how criminal justice data should be interpreted. Are increases or decreases in statistics, for example, attributable to changes in the laws or to greater emphasis on law enforcement? There is little doubt that an interaction effect is at work, but it is extremely difficult to parcel out the extent that each factor has contributed to any changes in criminal justice statistics. Nevertheless, such data affords an opportunity to monitor trends in drug use and to gain information (e.g., age, race, gender, etc.) about who has been arrested or detained for drug-related offenses.

A review of arrest statistics for drug-related offenses from 1973 to 1977 indicated that marijuana-related arrests showed the highest proportion, averaging about 60% of all drug arrests. Cocaine-related arrests ranged from 5.5% to 17.4%, averaging 9.9% over this period. Arrests for heroin-

related charges averaged 5.7% of all drug arrests. Arrests for possession or sale of stimulants amounted to 7.6% of all drug arrests. The trend over this time span (1973-1977) was for a high percentage of juvenile arrests, that is, for persons 19 years of age and under, for marijuana-related charges. Most persons arrested for narcotics violations were in the 20-29 age group. The clear majority of arrests involved Caucasians.

More recent data for 1981-1982 showed an increase in narcotic-related arrests. Between 1977-79, narcotics arrests accounted for 11.6% of all drug arrests, while in 1981-82 this category increased to 25% of all drug arrests. Between 1980-1981 those 18 and under constituted the majority of arrests (55% in 1980; 57.5% in 1981), and men outnumbered women by better than a 5:1 ratio.

Statistics reported by the Alaska State Troopers (Department of Public Safety, 1988) for the period January 1, 1986 through June 30, 1987, indicate that a total of 521 drug-related arrests were made, and that street drug seizures amounted to over \$12 million.

The criminal justice system, however, has concerns that transcend the problem of only having to deal with alcohol and drugs users or traffickers. An analysis of sex offenders (Analysis, 1985), for example, revealed that of the 350 sex offenders incarcerated in Alaska as of March 1, 1989, 31 percent of the cases required some form of treatment intervention for alcohol or drug abuse at the time of sentencing.

Based on these data it may be concluded that drug use exists in Alaska in varying degrees. Although most of this use can be directly related to the pipeline construction period, the major drug-related effects from this period seem to have bottomed out. The state has entered a new period where current drug use, although rooted in the pipeline years, has become more closely related to contemporary events. As such, drug-taking behavior needs to be understood not only in terms of its antecedent causes, but also in terms of its current correlates and effects; this information needs to be obtained for the population as a whole, and not only for specific segments of the population.

As noted above, most of the information about drug use in Alaska has been largely derived from indirect indices or secondary sources that reflect drug use among special populations, thereby significantly limiting efforts to arrive at inferences about the nature and extent of drug-taking behaviors that occurs in the general population. Stated differently, despite all the information that was compiled, there was no definitive data on who in the general population was involved in drug use, and the nature and extent of such use. The need for such information was clearly recognized by Alaska's State Office of Alcoholism and Drug Abuse which, in 1981, undertook an effort to fill this void through a research grant awarded to the Center for Alcohol and Addiction Studies (CAAS) to assess the extent and pattern of substance use and abuse in the state. Additionally, as noted earlier, SOADA initiated a statewide management information system to obtain direct information about who is utilizing treatment services and to learn about the nature of the alcohol and drug-related problems which are impacting Alaska's treatment agencies.

The purpose of the present research was to identify patterns of drug-taking behavior as related to demographic, social and psychological factors, as well as to identify the frequency, context and consequences of drug use in the state among school-age youth in grades 7 - 12. The finding would be evaluated in terms of the unique characteristics of Alaska's current environment, as well as in terms of the influences that the pipeline construction had on the state. The results of the 1983 study are reported in the results section where they are compared with the present findings. The findings from the community study (members of the general population 18 and over), have been reported elsewhere (Segal, 1983b). The major findings of the adult study are summarized in the following statements:

- The overall level of lifetime prevalence (tried a drug one or more times) was high, with 57.3% of those sampled having indicated that they had tried at least one chemical substance.
- Of the drugs used, the most prevalent were marijuana, stimulants and cocaine.

- Comparison by age groups revealed that drug use was more prevalent in the 18-25 age group than in the 26 + group.
- Prevalence rates in Alaska for both the 18-25 and 26+ age groups exceeded prevalence rates for comparable groups in the lower-48 states.

The results of the Center's research reinforced the need to address the problem of drug use in Alaska. The findings from the study of school age students also revealed an extremely high prevalence rate, and indicated further the need to focus on youth. The remainder of this report describes the current levels of drug use found among youth during 1987 and 1988, and compares the results with the findings from the data obtained during 1981 and 1982.

Chapter 3 Method

Overview

In recent years the United States has witnessed an increase in the nonmedicinal use of illicit mood altering drugs by elementary, junior and senior high school age youth, a problem which has become one of national concern. Although legal and social sanctions exist to preclude nonmedicinal use of psychoactive drugs for recreational or social purposes, they continue to be taken, and youngsters who use them place themselves at risk for potential legal, social and health problems.

The current research was undertaken as part of an effort by the State Office of Alcoholism and Drug Abuse to continue to monitor drug-taking behavior by Alaskan youth. This research is the second study in Alaska reporting on drug use and related information on youth in grades 7-12. It was designed to obtain information on the use or nonuse of drugs ranging from legal, socially sanctioned drugs for those of legal age (i.e., alcohol and tobacco), to illegal and unsanctioned drugs, such as marijuana, cocaine, stimulants, hallucinogens, depressants, inhalants, heroin, and tranquilizers, taken for nonmedicinal purposes.

Research Design and Procedures

Ideally, the best method of learning about drug-taking behavior among Alaskan junior and senior high school students would have been to survey all secondary students within the state. Because of time, travel, and resource limitations, and the difficult accessibility of many areas of the state, it was not considered feasible to undertake such a comprehensive task. Nor did we deem it necessary to obtain a representative sample of students from all the secondary schools in the state. Given the special problems that Alaska presents in terms of accessibility, we decided that schools located in regional centers in the urban and rural areas of the state would provide an appropriate representative sample of secondary school students. This decision was based on the following reasons: (1) The communities that were selected are geographically and ethnically different and encompass the major regions of the state; and (2) approximately 65% of the school age population reside within the

boundaries of the school districts selected.

The sampling procedure which provided a satisfactory means of obtaining representative data, and which allowed for cooperative planning with school districts, was area cluster sampling, a technique that takes advantage of the fact that the state is subdivided into a number of different areas. Area sampling permits sampling within given areas, such as cities within regions; the cluster component is a procedure that allows elements of the sample to be chosen from the population in groups or clusters rather than singly. In the present study the clusters were the pre-existing junior and senior high schools within a given district - which is itself within a given geographical district of the state. This procedure ideally allows for generalization of results from the sample to the larger population (Moser and Kalton, 1971). Additionally, depending on the specific features of the sampling plan in relation to the object of the assessment procedures, cluster sampling can be as efficient on a per-case basis as is simple random sampling (Selltitz, Jahoda, Deutsch, and Cook, 1967). Moreover, once the population to be sampled is defined, random or nonrandom sampling procedures could be utilized to obtain the desired sample.

Because Alaska has been divided into several major geographical regions by the state government for administrative purposes, and as each of these regions encompass an urban center, each of these regional centers constituted a specific sampling area in which cluster sampling was undertaken. Six regional areas, encompassing the totality of mainland Alaska, excluding the Aleutian Chain, were selected to constitute the sampling areas. The initial study, conducted during 1981-82, used a total of eight school districts to serve as clusters. The school districts from which samples were initially obtained were located in the following communities: Anchorage, Barrow, Bethel, Fairbanks, Juneau, Kotzebue, Nome and Sitka.

The present study expanded the geographical areas to include two additional school districts, Cordova and Seward, resulting in a broader representation of Alaskan youth. The study's results will therefore be

presented in two principle ways: (1) an aggregation of findings from all ten districts, which provides a description of current drug-taking behavior; and (2) a comparison of the current findings with the eight districts sampled in the original (1981-1982) study.

The survey procedure involved two different methods, each contingent on the nature of a school district's approach to having students respond to a questionnaire, and on the size of the junior-senior school populations. The different survey procedures were either: (1) random sampling of students in grades 7-12, or (2) assessing the entire population of students in grades 7-12. Approval first had to be obtained from each of the district's school board. The sampling procedure and format of the survey were derived by working with school administrators in each district.

Some districts interpreted the drug survey as extracurricular, and allowed only those students who had parental consent to volunteer to participate in the study. In such cases samples were drawn from the body of students that had obtained parental consent. The number of refusals, however, amounted to less than 1.0%, a level that did not make any difference in the study. Other districts considered the research to be a legitimate school function that was consistent with their drug education curriculum. These districts did not require parental consent and allowed the students to decide for themselves whether to participate in the study.

The questionnaires were administered during school hours either by school personnel or by the principal investigator. The surveys were collected immediately after students completed them and forwarded to the University to ensure confidentiality.

Sampling

As described above, the state is divided into several regions so that schools could be sampled within each region in a manner representative of total students enrolled in that region. In those locations where there was only one junior and senior high school, all students present on a given day were surveyed. In such cases the actual population of students in grades 7 to 12 were surveyed. For purposes of this report, however, the data

obtained from an entire school district is treated as sample data.

When school districts contained more than one junior or senior high school, random stratification sampling was utilized to obtain adequate representation of men and women within grade levels in the different schools. The samples were not stratified for ethnic representation. It was thought that the process of random sampling would provide a representation of racial and ethnic groups proportionate to their representation in the general school population. The specific sampling procedure for each of the ten districts, together with a description of the respondents by gender and grade follows. A summary table of the total sample is presented afterward.

(1) Barrow

All students present in grades 7-12 in Barrow High School on Monday, May 4, 1987, who volunteered to participate in the study were surveyed by the principal investigator. Students who were absent were not solicited to participate. A description of the students responding to the survey is presented below.

Characteristics of the Barrow Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Male	62	42.5	Alaska Native	88	60.3	7	26	17.8
Female	80	54.8	White	37	25.3	8	24	16.4
Unreported	4	2.7	Am. Indian	1	0.7	9	30	20.5
Total	146		Asian	16	11.0	10	27	18.5
			Black	1	0.7	11	22	15.1
			Hispanic	1	0.7	12	17	11.6
			Unreported	2	1.4			

Participation by Gender and Grade: Barrow

<u>Gender</u>	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
Male	14	13	11	7	13	4	62
Female	12	11	15	20	9	13	80
Total	26	24	26	27	22	17	142

The extent to which this sample is representative of the school district's student population cannot be estimated because the actual class sizes and representation by gender are unknown. What is evident, however, is that there are more females than males, and that male seniors and seventh graders, and female 11th graders, may be underrepresented.

(2) Cordova

All students present in grades 7-12 who volunteered to participate in the study were surveyed on a given day by the School District. Students who were absent were not solicited to participate. A description of the students responding to the survey is presented below. A total of 118 completed questionnaires were obtained. A response rate cannot be provided because the total number of students asked to complete the questionnaire is not known. A description of the sample follows.

Characteristics of the Cordova Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Male	65	42.5	Alaska Native	13	60.3	7	16	13.3
Female	<u>53</u>	<u>54.8</u>	White	85	25.3	8	25	21.2
Total	118		Am. Indian	1	0.7	9	16	13.6
			Asian	5	11.0	10	17	14.4
			Black	7	0.7	11	14	11.9
			Hispanic	1	0.7	12	30	25.4
			Other	1	0.8			

Participation by Gender and Grade: Cordova

	<u>Grade</u>						
<u>Gender</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>Total</u>
Male	7	12	9	9	8	20	65
Female	9	13	7	8	6	10	53
Total	16	25	16	17	14	30	118

The extent to which this sample is representative of the school district's student population cannot be estimated because the actual class sizes and representation by gender are unknown. What is evident, however, is that there are more males, but that except for seniors, classes appear to be about equally represented by gender.

(3) Fairbanks

Sampling within the Fairbanks schools was undertaken by the School District itself, utilizing the method of disproportional stratified random sampling to obtain a representative sample of students in grades 7-12. Stratification was based on school, grade, and gender. Individual students were obtained by means of a simple random sample. Based on a computer generated list of all students in the district, who were classified into the appropriate strata, a total sample of 1450 students was then randomly selected for participation in the study. At the time of sampling, which occurred on May 12, 1987, each student selected was asked to report to a central location within their school at a given time. An explanation of how and why each student was selected was conveyed, and each student was then asked to volunteer to complete the questionnaire. A total of 836 completed questionnaires were obtained. Based on a target of 1450 students, a response rate of 57.7% was obtained, a level which is considered adequate based on an anticipated return of 50%. Information describing the Fairbanks sample is presented in the tables that follows.

(4) Juneau

Sampling within the Juneau schools was undertaken by the School District itself, utilizing the method of stratified random sampling to obtain a representative sample of students in grades 7-12. Stratification was based on class and gender. A target of 600 students was sought, but a total of 418 completed questionnaires were obtained, yielding an acceptable response rate of 70%. Since the total number of students in grades 7-12 is not known it is not possible to report what percentage of the total population of students in grades 7-12 is represented in the sample. A description of the sample follows.

(5) Sitka

Sampling within the Sitka schools was performed by the School District itself. All students present in grades 6-12 who volunteered to participate in the study were surveyed. A description of the students responding to the survey is described below. A total of 661 questionnaires were administered, of which 32 were excluded because of inconsistent or

Participation by School, Gender, and Grade: Fairbanks

<u>School/Gender</u>	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
Mckinley							
Males	17	9	13				39
Females	1	0	6				7
Ryan							
Males	17	9	13				39
Female	22	21	0				43
Tanana							
Males	16	16					32
Female	18	21					39
North Pole							
Males	21	16					37
Females	21	4					25
Eielson							
Males	18	18					35
Females	11	19					30
Alternative School							
Males			1	3	9	7	20
Females				1	2	9	12
Lathrop Sr.							
Males			14	15	22	8	59
Females			12	19	28	13	72
West Valley Sr.							
Males			14	13	16	7	50
Females			13	11	9	9	42
North Pole Sr.							
Males			20	17	17	11	65
Females			15	12	16	11	54
Eielson Sr.							
Males			24	27	22	13	86
Females			14	6	10	12	42

Total:	168	145	146	124	151	100	<u>834</u>
Males							468
Females							366

*Two student did not report gender.

Characteristics of the Fairbanks Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Males	468	56.0	Alaska Native	51	6.1	7	168	20.1
Females	366	43.8	White	661	79.1	8	145	17.3
Unreported	<u>2</u>	<u>0.2</u>	Am. Indian	17	2.0	9	146	17.5
Total	836		Asian-Pacific	18	2.2	10	126	15.1
			Black	46	5.5	11	151	18.1
			Hispanic	22	2.6	12	100	12.0
			Other	15	1.8			
			Unreported	6	0.7			

Characteristics of the Juneau Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Males	199	47.6	Alaska Native	41	10.0	7	86	20.6
Females	218	52.2	White	317	75.8	8	88	21.1
Unreported	<u>1</u>	<u>0.2</u>	Am. Indian	11	2.6	9	70	16.7
Total	146		Asian-Pacific	21	5.0	10	66	15.8
			Black	10	2.4	11	78	18.7
			Hispanic	6	1.4	12	29	6.9
			Other	6	1.4	NR*	1	0.2
			Not reported	6	1.4			

*Not reported

Participation by School, Gender*, and Grade:* Juneau

<u>School/Gender</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>Grade</u> <u>10</u>	<u>11</u>	<u>12</u>	<u>Total</u>
Drake							
Males	21	22					43
Females	22	27					49
Dryden							
Males	20	17					37
Females	23	21					44
J. Alternative							
Males		1	19	1			21
Females			15	0			15
Juneau-Douglas H.S.							
Males			11	37	37	13	98
Females			25	28	41	16	110
Total:	86	88	70	66	78	29	417
Males							199
Females							218

*One student did not report gender, and one did not indicate grade.

incomplete responses, yielding a response rate of 95.2%, a level well above acceptable limits. A description of the sample is provided below. Ethnicity was not asked for in the Sitka questionnaire.

Characteristics of the Sitka Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Male	253	47.1	7	99	18.4
Female	279	52.0	8	101	18.8
Unreported	<u>5</u>	<u>0.9</u>	9	88	16.4
Total	537		10	88	16.4
			11	81	15.1
			12	80	14.9

Participation by Gender and Grade: Sitka

<u>Gender</u>	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
Male	54	54	33	37	36	39	253
Female	44	45	54	51	44	41	279
Total	98	99	87	88	22	17	532

(6) Seward

All students present in grades 7-12 who volunteered to participate in the study were surveyed on a given day prior to Christmas Vacation. Students who were absent were not solicited to participate. A description of the students responding to the survey is described below. A total of 197 completed questionnaires were obtained. A response rate cannot be provided because the total number of students asked to complete the questionnaire is not known. A description of the samples follows.

Characteristics of the Seward Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Male	102	51.8	Alaska Native	19	6.1	7	40	20.3
Female	95	48.2	White	168	85.3	8	43	21.8
Total	197		Am. Indian	6	3.0	9	25	12.7
			Other	4	2.0	10	31	15.7
						11	40	20.3
						12	18	9.1

Participation by Gender and Grade

	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
<u>Males</u>	24	27	8	13	23	7	102
<u>Females</u>	16	16	17	18	17	11	95
Total	40	43	25	31	40	18	197

The extent to which this sample is representative of the school district's student population cannot be estimated because the actual class sizes and representation by gender are unknown. What is evident, however, is that seniors appear to be underrepresented.

(7) Kotzebue

The school district conducted its own survey during the spring of 1988, following the procedures established by the principal investigator. The survey was administered system-wide, encompassing all 7th to 12th graders in the school district. In order to ensure the anonymity of the outlying schools, due to their smaller number of students, the Kotzebue data was merged into a single data file without identifying specific schools.

The 1982 school survey was limited to junior and senior high school students in Kotzebue. A direct comparison of the finding from the two surveys, therefore, can only be made if the data are weighted to adjust for the differences in sample sizes. A description of the Kotzebue sample follows.

Characteristics of the Kotzebue Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Male	162	54.4	Alaska Native	244	81.9	7	58	19.5
Female	135	45.3	White	25	8.4	8	55	18.5
Unreported	1	0.3	Am. Indian	2	0.7	9	42	14.1
Total	298		Asian	3	0.3	10	54	18.1
			Hispanic	5	0.3	11	49	16.4
			Other	5	1.7	12	40	13.4
			Unreported	3	1.0			

Participation by Gender and Grade: Kotzebue

<u>Gender</u>	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
Male	39	27	21	31	23	21	162
Female	19	28	20	23	26	19	135
Total	58	55	41	54	22	40	297

As may be observed, there are more males than females, with higher representation in the 7th and 10th grades. The extent to which this sample is representative of the school district's student population cannot be estimated because the actual class sizes and representation by gender are unknown.

(8) Bethel

All students present in grades 7-12, who volunteered to participate in the

study, were surveyed by the principal investigator on Thursday, March 6, 1987. Students who were absent were not solicited to participate. A description of the students responding to the survey is described below.

Characteristics of the Bethel Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Males	108	47.0	Alaska Native	124	53.9	7	44	19.1
Females	121	52.6	White	47	20.4	8	42	18.3
Unreported	<u>1</u>	<u>0.4</u>	Am. Indian	3	1.3	9	41	17.8
Total	230		Asian-Pacific	3	1.3	10	36	15.7
			Hispanic	2	0.9	11	37	16.1
			Other	2	5.2	12	30	13.0
			Unreported	2	0.9			

Participation by Gender and Grade: Bethel

	<u>Grade</u>						
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>Total</u>
<u>Males</u>	23	18	16	19	17	15	108
<u>Females</u>	21	24	24	17	20	15	121
<u>Total</u>	44	42	40	36	37	30	229

More females than males were present, but the proportion of males and females was generally consistent. As with the other districts, the extent to which this sample is representative of the school district's student population cannot be estimated because the actual class sizes and representation by gender are unknown.

(9) Nome

Students present in grades 7-12, who volunteered to participate in the study, were assessed by Nome school personnel following the procedures initiated by the principal investigator. Students who were absent were not solicited to participate. A description of the students responding to the survey is described below.

Characteristics of the Nome Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Males	112	55.4	Alaska Native	99	49.0	7	41	20.3
Females	90	44.6	White	62	30.7	8	33	16.3
Total	202		Am. Indian	5	2.5	9	44	21.8
			Asian-Pacific	1	0.5	10	38	18.8
			Hispanic	1	0.5	11	33	16.3
			Other	31	15.4	12	13	6.4
			Unreported	3	1.5			

Participation by Gender and Grade: Nome

	<u>Grade</u>							
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>Total</u>	
<u>Males</u>	17	19	26	28	15	7	108	
<u>Females</u>	24	14	18	10	18	6	121	
<u>Total</u>	41	33	44	38	33	13	202	

Most apparent is that seniors seem to be underrepresented but, as with other districts, the extent to which this sample is representative of the school district's student population cannot be estimated because the actual class sizes and representation by gender are unknown. Representation by gender within grade levels also varies.

(10) Anchorage

The Anchorage School District (ASD) undertook its own assessment under the supervision of the District's Assessment and Evaluation unit. Working in conjunction with the principal investigator, a sampling scheme was developed to obtain a representative sample, and to administer the survey in accordance with the study's methodology. The district elected to survey only grades 8, 10, and 12 in its secondary schools rather than grades 7-12. Grades 4 and 6 were substituted for grades 7, 9 and 11. The district elected to survey the lower grades in order to (a) assess drug-taking behavior among younger students, and (b) to establish baseline data using lower grade levels in order to measure changes in drug-taking behavior over a longer period of time.

The modification of the present sample precludes a direct comparison of Anchorage's results with those obtained in the 1981-1982 study, as well as with findings from other school districts. Anchorage's school sample will thus be weighted accordingly when it is included in the aggregated sample for 1987-1988, and when comparisons are made with previous ASD findings or with other communities.

The method of proportionate stratified random sampling was used to obtain a representative sample of students in grades 8, 10, and 12. Stratification was based on school, grade, and gender. The ASD, however, in order to provide anonymity within the district, elected to not have the schools identified. Accordingly, only the number of students listed by gender and grade are described.

A total sample of 1500 students (500 per grade) was randomly selected for participation in the study, which was conducted during April and May, 1988. A total of 1147 completed questionnaires were obtained. Based on a target of 1500 students, a response rate of 76.5% was obtained, a level which is considered highly adequate based on an anticipated return rate of 50%. Information describing the Anchorage sample is presented in the following table.

Characteristics of the Anchorage Student Sample

<u>Gender</u>	<u>n</u>	<u>%</u>	<u>Ethnicity</u>	<u>n</u>	<u>%</u>	<u>Grade</u>	<u>n</u>	<u>%</u>
Males	566	49.3	Alaska Native	43	3.7	8	421	36.7
Females	<u>581</u>	<u>50.7</u>	White	874	76.2	10	326	28.4
Total	1147		Am. Indian	27	2.4	12	400	34.9
			Asian-Pacific	42	3.7			
			Hispanic	43	3.7			
			Black	63	5.5			
			Other	51	4.5			
			Unreported	4	0.3			

Participation by Gender, and Grade: Anchorage

<u>Gender</u>	<u>Grade</u>			<u>Total</u>
	<u>8</u>	<u>10</u>	<u>12</u>	
Males	223	157	186	566
Females	<u>198</u>	<u>169</u>	<u>214</u>	<u>581</u>
Total	421	326	400	1147

As can be observed, the total Anchorage sample is relatively comparable with respect to gender, but the distribution by gender varies within grade levels.

Aggregate Samples

(1) Total Sample: 1987-1988

The total sample resulted in 4,129 students in grades 7-12 obtained from ten school districts: Anchorage, Barrow, Bethel, Cordova, Fairbanks, Juneau, Kotzebue, Nome, Seward and Sitka. Table 3-1 provides a description of the characteristics of this sample.

(2) Subsample Totals: Eight Comparison School Districts - 1987-1988

Table 3-2 provides a description of the characteristics of the students from the eight communities that constituted the follow-up study. These were: Anchorage, Barrow, Bethel, Fairbanks, Juneau, Kotzebue, Nome and Sitka.

(3) Characteristics of the 1981-1982 Baseline Study

Since comparisons will be made with the major findings from the initial drug-use study conducted during 1981 and 1982, a description of the former sample is provided in Table 3-3. The baseline study, however, did not include ethnicity in the questionnaire, which precludes comparisons on this variable.

3. THE QUESTIONNAIRE

A self-administered questionnaire was used to obtain information about use or nonuse of drugs. The questionnaire, which was similar in content to the one used in the 1981-1982 study, but formatted differently, was pilot tested to assess its reliability and to confirm that its wording was consistent with a ninth grade reading level. The instrument demonstrated sufficient content validity to assure that it adequately assessed use or nonuse of drugs, and the nature and extent of drug use by those students reported having tried a drug (Segal, 1983a). The new questionnaire was also reviewed by each school district, which had the option to make revisions or to add questions to obtain specific information that was of interest to them. Few changes, except for Nome, were made. The questionnaire

Table 3-1

Sample Characteristics
Ten School Districts: 1987-1988

<u>Gender</u>	<u>n</u>	<u>Percent</u>
Males	2097	50.8
Females	2018	48.9
Unreported	14	.3

<u>Ethnicity*</u>	<u>n</u>	<u>Percent</u>	<u>Relative Percent</u>
Alaska Native	721	17.5	20.2
American Indian	73	1.8	2.0
Asian-Pacific	113	2.7	3.2
Black	129	3.1	3.6
Hispanic	77	1.9	2.2
White	2277	55.1	63.9
Other	175	4.2	4.9
Not reported	564	13.6	

<u>Grade</u>	<u>n</u>	<u>Percent</u>
7	578	14.0
8	977	23.7
9	502	12.2
10	810	19.6
11	505	12.2
12	757	18.3

	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
Males	314	513	240	414	259	358	2097
Females	<u>263</u>	<u>462</u>	<u>255</u>	<u>393</u>	<u>246</u>	<u>399</u>	<u>2018</u>
Total	577	975	495	807	504	757	4115

<u>Age</u>	<u>n</u>	<u>Percent</u>	<u>Relative Percent</u>
10	1	0.0	0.0
11	29	0.7	0.7
12	282	6.8	6.9
13	680	16.5	16.7
14	720	17.4	17.7
15	625	15.1	15.4
16	676	16.4	16.6
17	646	15.5	15.9
18	383	9.3	9.4
19+	27	0.7	0.7
NR**	60	1.4	

* Sitka not included. **Not reported.

Table 3-2

Sample Characteristics
Eight School Districts: 1987-1988

<u>Gender</u>	<u>n</u>	<u>Percent</u>				
Male	1930	50.6				
Female	1870	40.0				
Unreported	14	0.4				

<u>Ethnicity*</u>	<u>n</u>	<u>Percent</u>	<u>Relative Percent</u>			
Alaska Native	689	18.1	21.2			
American Indian	66	1.7	2.0			
Asian-Pacific	102	2.7	3.1			
Black	122	3.2	3.8			
Hispanic	76	2.0	2.3			
White	2024	53.1	62.3			
Native/White	79	2.1	2.4			
Filipino	6	0.2	0.2			
Other	87	2.3	2.7			
Not reported	563	14.8				

<u>Grade</u>	<u>n</u>	<u>Percent</u>				
7	522	13.7				
8	909	23.8				
9	461	12.1				
10	762	20.0				
11	451	11.8				
12	709	18.6				

	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
Males	283	474	223	392	227	331	1930
Females	238	433	231	367	223	378	1870
Total	521	907	454	759	450	709	3800

<u>Age</u>	<u>n</u>	<u>Percent</u>	<u>Relative Percent</u>
10	1	0.0	0.0
11	24	0.6	0.6
12	240	6.3	6.4
13	620	16.3	16.5
14	670	17.6	17.8
15	587	15.4	15.6
16	620	16.3	16.5
17	591	15.5	15.7
18	376	9.9	10.0
19+	27	0.7	0.7
NR**	58	1.5	

* Sitka not included. **Not reported.

Table 3-3

Sample Characteristic
Eight School Districts: 1983

<u>Gender</u>	<u>n</u>	<u>Percent</u>
Males	1770	49.0
Females	1732	48.0
Unreported	<u>107</u>	3.0
Total	3609	

<u>Grade</u>	<u>n</u>	<u>Percent</u>
7	665	18.4
8	685	19.0
9	603	16.7
10	658	18.2
11	564	15.6
12	345	9.6
NR*	89	2.5

	<u>Grade</u>						<u>Total</u>
	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
Males	318	321	294	322	318	186	1759
Females	<u>337</u>	<u>355</u>	<u>303</u>	<u>332</u>	<u>241</u>	<u>154</u>	<u>1722</u>
Total	655	676	597	654	559	340	3481
Unreported							128

<u>Age</u>	<u>n</u>	<u>Percent</u>	<u>Relative Percent</u>
11	2	0.1	0.1
12	202	5.6	5.9
13	633	17.5	18.4
14	623	17.3	18.1
15	611	16.9	17.8
16	610	16.9	17.8
17	482	13.4	14.0
18	254	7.0	7.4
19	16	0.4	0.5
NR*	176	4.9	

*Not Reported

used in Nome involved changing individual questions about use or nonuse of drugs into matrix form. The two types of questionnaires are presented in Appendix A.

The only exception to the utilization of the revised questionnaire for the 1977-78 study was the Sitka School District. That district, prior to the inception of the present research project, initiated its own self-study of drug use and choose to use a revised 1981-1982 questionnaire. The district released its questionnaires to CAAS for evaluation and for inclusion in the follow-up study. Results describing aggregated data, therefore, will not always include items from Sitka because the Sitka measure was not totally comparable.

Each of the three questions contained sets of items designed to obtain the information, which are listed below:

(1) Demographic

This section included question that inquired about gender, ethnic background, age, participation in drug education programs, grades obtained, and length of time lived in community.

(2) Drug Usage

Information on drug usage included an extensive set of questions on nonprescription or social/recreational use of marijuana, cocaine, crack, stimulants, hallucinogens, depressants, heroin, inhalants, and tranquilizers, with specific reference to recency and frequency of use, problems resulting from use, age of first use, and estimates of level of peer use.

(3) Alcohol

This section includes information about the quantity and frequency of consumption, and about some adverse consequences of drinking.

(4) Tobacco

Information on cigarette smoking and on use of smokeless tobacco products, including the quantity and frequency of use.

(5) Personality Items

The use or nonuse of drugs is in part influenced by personality characteristics. The incorporation of a measure of personality attributes facilitates an evaluation of what personality traits are related to use or nonuse of drugs, and to different patterns of drug use.

Confidentiality and Anonymity

The purpose of the study was to gain an understanding of drug use among Alaskan youth, not to identify individuals who used drugs. In an effort to acquire reliable answers from the students, precautions were taken to protect their confidentiality and anonymity. The students' names were not asked for in any phase of the research. The only identifying information requested on the survey was age, ethnicity, gender and grade; no birthdate was requested. All students that were eligible were asked to volunteer to participate in the research. Few refused to participate when asked. In some locations students actively supported the study, viewing it as a means of helping their school combat the use of drugs.

In addition to protecting the anonymity of students, the confidentiality of the school districts was also protected. In accordance with an agreement with each district no findings would be disclosed by the principal investigator - each district would have the option of releasing its findings. Because some districts have not yet received their reports, and because some communities have requested anonymity, no school districts are identified in this document. Findings will be reported as aggregated data either representative of the total sample or school districts grouped together to form regional samples. No community will be able to be singled out when regional comparison are provided.

4. Data Checking

All the data obtained were entered into a computer file for detailed analysis. Prior to entry, each questionnaire was checked for inconsistencies or improbable response patterns. Questionnaires which contained partial or indistinct responses were corrected when possible. Any improperly completed questionnaires, or those with incomplete pages, were discarded. The response rate for each school district was noted above.

After each school district's data was entered into a computer data file, the file was screened to check for inaccuracies by determining if any responses were out of range for the questions asked, or for inconsistent responses.

5. Return Rate (Completion Rate)

A total of 4,381 questionnaires were returned to the Center for Alcohol and Addiction Studies from the ten school districts surveyed. After the checking process, 252 were discarded for one or more of the reasons cited above, resulting in a return or completion rate of 94.2%, which exceeds a minimal level of 90%. A total of 4,129 completed questionnaires were therefore entered into the 1987-1988 system file for statistical analysis. Any results reported for the 1987-1988 study are based on this figure unless otherwise stated.

6. Data Analysis

SPSSX system files were formed on the University's Digital Vax 8800 computer, running the VMS operating system, version 4.7. Analysis of the data was undertaken utilizing SPSSX programs (SPSS, 1988).

Because the research involved disproportionate samples, prevalence data was obtained by utilizing weighted and unweighted statistical analyses. A weighted analysis adjusts for differences in sample sizes by computing means and percentages that are based on their exact representation of the population sampled, except for sampling error. It is therefore possible to adjust for the differences in sample sizes among the ten different school districts. Weighting was accomplished by utilizing the SPSSX "weight command," identifying each community as the weighting variable. The results section contains a comparison between the weighted and unweighted findings.

Chapter 4

Results: Part I TOTAL SAMPLE

Overview

This chapter describes the results of the survey inquiring about nonmedicinal drug use by students in grades 7-12. Information compiled from over 4,000 students by means of a comprehensive questionnaire can be very extensive. There are many ways to analyze and report the results. Some may have either special or unique significance, while some may be too general to be of value. It is necessary to place limitations on the reporting of the survey findings with the aim of presenting data that would be best utilized by the schools, by the State Office of Alcoholism and Drug Abuse (SOADA), by health planners, and by governmental bodies. Additional information will be forthcoming in supplemental reports.

The results are divided into two chapters. Chapter four reports the findings from the total sample, representing an aggregation of the ten school districts. Chapter five describes the findings from the eight communities that were followed-up in the present research, and focuses on comparisons with the 1981-1982 findings.

The findings within this chapter are grouped into four categories: (A) prevalence data, which describes the type, extent, pattern, and frequency of drug-taking behavior, (B) demographic characteristics, which describe the association between prevalence and specific characteristics of the sample, such as the relationship between gender and drug use, (C) comparison with other research findings, and (D) correlates of drug use, which describe some of the factors that may be viewed as either cause or consequences of drug use.

The data are presented in both tabular and graphic form. In some figures the names of each substance has been abbreviated. The following is a legend to help interpret the abbreviations used when the findings are presented graphically.

MJ = Marijuana
CK = Cocaine
CR = Crack
ST = Stimulants
HL = Hallucinogens
DP = Depressants
HR = Heroin
IN = Inhalants
TQ = Tranquilizers
AL = Alcohol
TB = Cigarettes

A. Prevalence and Patterns of Drug-Taking Behavior

(1) Opportunity to Try Drugs

Drugs cannot be experienced unless there is an opportunity to try them. Data addressing the opportunity to try drugs conveys an indication of the availability of drugs, what trends in use may be present and, by implication, information about the extent to which those who have a chance to try a drug do so. Table 4-1 describes how many adolescents in the sample indicated having had an opportunity to try any of the different chemical substances, except for alcohol and tobacco. (Figure 4-1 provides a graphic illustration of the findings in Table 4-1.) Both weighted and unweighted results are provided in the table.

A comparison of the actual (unweighted) and projected (weighted) findings indicates that the differences between them tend to be small, suggesting that the actual sample is representative of the population sampled, except for sampling error. The following discussion is therefore based on the unweighted or actual sample results.

What can be observed from the data in Table 4-1 (and from Figure 4-1) is that opportunity to try different chemical substances was fairly pervasive, but with some variations. Marijuana was the drug most in evidence (70.1%), followed by inhalants (44.9%). Just less than two-fifths (39.3%) of the sample reported an opportunity to try cocaine. Concerning crack, a concentrated form of cocaine, less than 10 percent of the sample (8.4%)

reported an opportunity to try it, suggesting that crack may not be generally available in the state. Stimulants were next, with 36.4 percent of the sample having indicated an opportunity to try them. Reports on the opportunity to try the remaining substances were less extensive, but over a quarter of the sample had an opportunity to try hallucinogens (23.1%), and less than a fifth indicated a chance to try depressants (18.6%) or tranquilizers (17.6%). Last among the opportunity to try was heroin, with 7.4 percent of the sample noting an opportunity to try it.

(2) Opportunity to Try and Trying a Drug

An important piece of information related to the opportunity to try a drug is the number of students who actually tried a substance when the chance occurs. Table 4-2 (and figure 4-2) report the percent of students who indicated that they tried a substance when the opportunity arose. As noted from the Table, except for crack and heroin, over half the students tried one of the substances when an opportunity occurred. Consistent with its level of apparent availability, three-quarters (75.9%) of those who had an opportunity to try marijuana did so. Stimulants were the next highest tried substance, with two-thirds (66%) of the sample indicating that they tried it when a chance arose. Over half of those who had a chance to try cocaine (52%), hallucinogens (56.7%), depressants (50.6%), Inhalants (57.1%), or tranquilizers (54.3%), did so.

Based on the findings reported in Tables 4-1 and 4-2, opportunities to try drugs exist in varying degrees, and over half the adolescents who have a chance to try a drug apparently try it. Table 4-3 describes how many students reported having tried any given substance at least once.

(3) Lifetime Experience with a Chemical Substance (Lifetime Prevalence)

Table 4-3 (and Figure 4-3) show the findings related to the percent of students who reported ever having tried any of the substances one or more times during their lifetime (except for alcohol and tobacco). Both weighted and unweighted percent-ages are presented. The differences between the weighted and unweighted figures are relatively small, suggesting that the unweighted sample is representative of the sample population. The following interpretation of the findings is based on the

unweighted data.

As can be observed, over half the students (53.2%) reported having tried marijuana at least once during their lifetime. Marijuana is thus the substance that most students had an opportunity to try, the one that most did try when presented with an opportunity to try, and the one tried most by members of the sample. Conversely, heroin and crack, which were the least available, and least taken advantage of when an opportunity arose, are also least experienced (2% and 2.4% respectively). Of the remaining substances, inhalants were the second most experienced, with a quarter of the sample (25.7%) having indicated at least one experience with an inhalant. Cocaine was tried at least once by just less than a quarter of the sample (24.0%). Hallucinogens were tried by over one-tenth of the sample (13.1%), while tranquilizers (9.6%) and depressants (9.4%) were tried by just less than one-tenth of the students surveyed.

In summarizing the first three tables, it appears that a pattern of use has emerged, one that revolves around using selected drugs to obtain what might be characterized as a 'cheap high.' The three most tried substances, marijuana (a popularized mood altering drug taken to induce a pleasant feeling state), inhalants (cheap and available products such as gasoline), which also produce euphoria, and stimulants (relatively inexpensive substances which induce a high), are all euphoria-inducing substances. Cocaine and hallucinogens, substances that also induce a pleasant altered state of consciousness, are also used, but to a lesser extent. It is possible that their cost, together with a cautiousness about their use due to extensive publicity about their dangers, may be mitigating against more extensive use. Of the remaining substances, depressants and tranquilizers, possibly due to cost and because neither is a particularly good euphoria-inducing drug, are not used extensively. Heroin and crack, which were least experienced, may either be unavailable, too costly, or perceived as substances to avoid.

(4) Lifetime Experience and 95% Confidence Intervals

Table 4-4 presents the lower and upper confidence intervals for the statistics describing lifetime experience with a drug reported in Table 4-3.

Table 4-4
 Lifetime Experience with a Chemical Substance
 with 95% Confidence Intervals
 Unweighted Frequencies
 Total Sample
 1988
 (n=4129)

<u>Substance</u>	<u>Lower Limit*</u>	<u>Percent</u>	<u>Upper Limit*</u>
Marijuana	51.7	53.2	54.7
Cocaine**	13.3	14.4	15.5
Stimulants	22.7	24.0	25.3
Hallucinogens	12.0	13.1	14.2
Depressants	8.5	9.4	10.4
Heroin	1.7	2.0	2.4
Inhalants	24.4	25.7	27.0
Tranquilizers	8.6	9.6	10.6

*95% Confidence Intervals. **Includes Crack.

The prevalence data represent the unweighted sample figures. The confidence intervals have been included in order to show the range around which the actual population value may lie 95 out of one hundred times ($p < .05$).

(5) Lifetime Experience: Total Number of Students Having Tried One or More Drugs

Figure 4-4 indicates that out of the total 1988 sample of 4,129 students, 59.9 percent, or three-fifths of the students surveyed, reported having tried one or more drugs at least once during their lifetime. Although lifetime prevalence is a high, it needs to be noted that lifetime experience includes students who tried a drug once and stopped, and those who had used more than one substance more than one time, without accounting for recency of use.

(6) Past Year Experience

The above findings changes dramatically when experience during the past year is reported. As shown in Figure 4-5, less than a quarter of the

Figure 4-4
Lifetime Experience with One or more Drugs
Total Sample
1988
(n=4129)

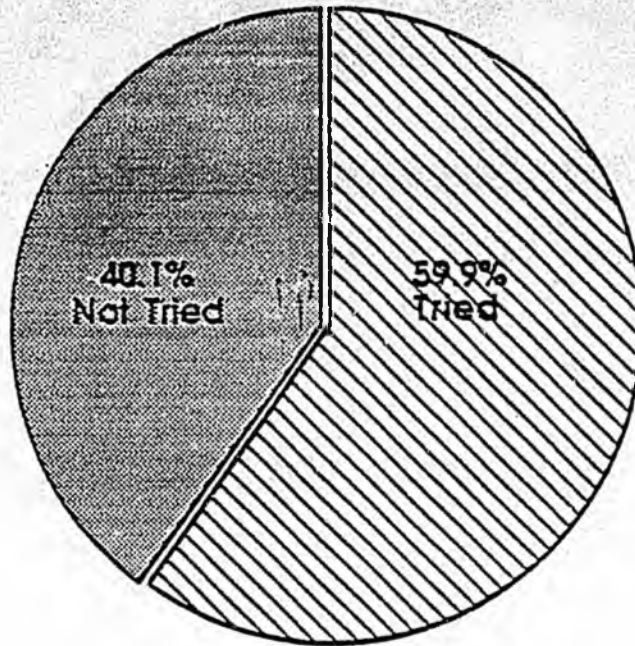
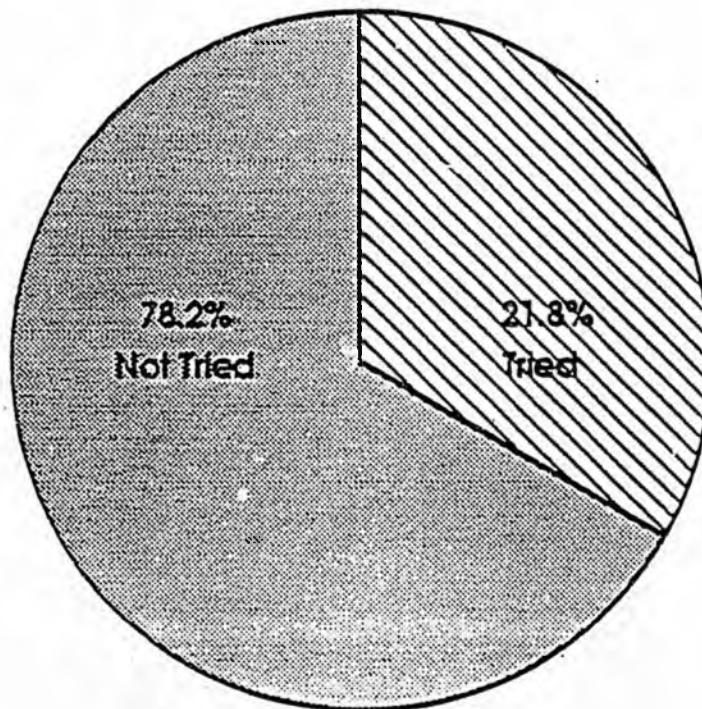


Figure 4-5
Past Year Experience with One or More Drugs
1988

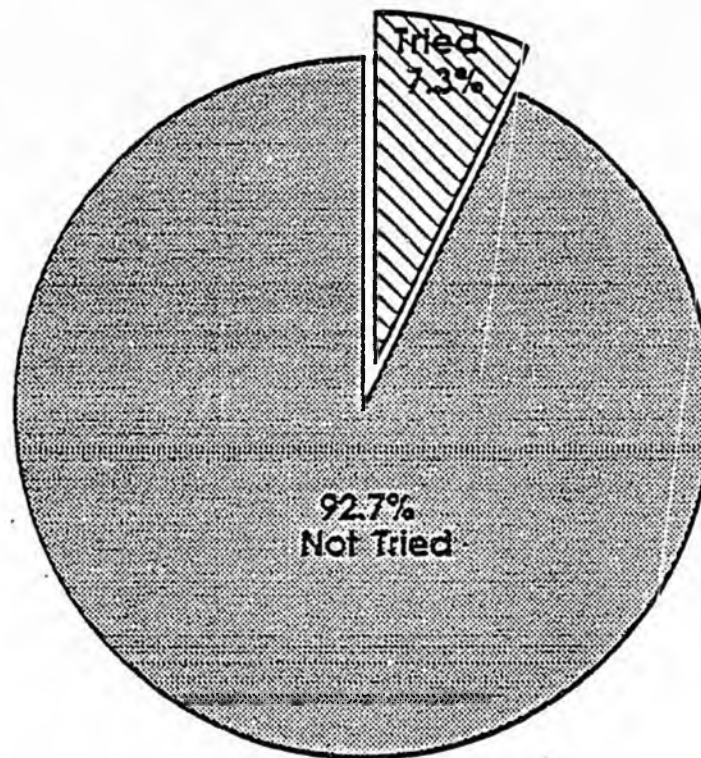


sample (21.8%) indicated having experienced any substance during the past year.

(7) Past Month Experience

A further substantial decrease is noted for past month use (Figure 4-6), with less than ten percent (7.3%) of the students having indicated using a drug during this time period.

Figure 4-6
Past Month Experience with One or More Drugs
1988



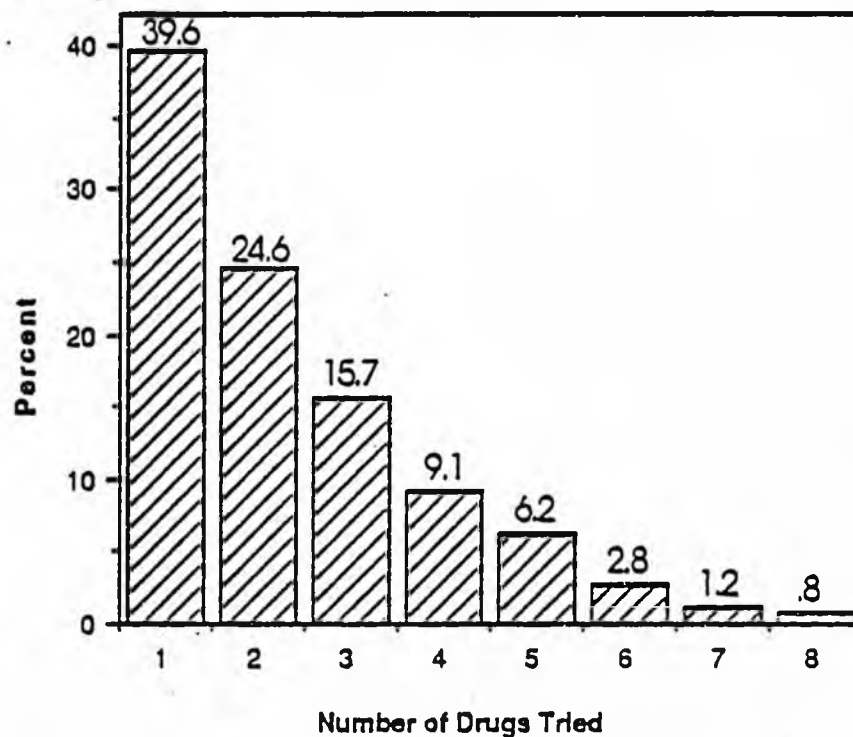
Different drug experience results occur when different time periods are referenced (Figures 4-4 to 4-6). Lifetime experience yields the highest prevalence because it encompasses all forms of use, experimental or regular, during a student's lifetime. Past year use provides a more recent picture which does not include students who experimented with drugs more than a year ago and stopped, or who were more frequent users but also stopped. What the findings reveal is that there is a substantial difference between those who ever tried a drug, and those who had a more recent drug experience.

This difference becomes even more pronounced with respect to use during the past month. These data provide an estimate of students who are actively involved in drug use, which amounts to only 7.3 percent of the sample.

(8) Number of Drugs Tried

Figure 4-7 describes how many students tried one or more drugs. Inspection of the data reveals that the largest percentage of students who had experiences with drugs restricted their experience to only one drug (39.6%). The proportion of students who experienced two or more drugs decreases steadily thereafter. A quarter of the sample (24.6%) experienced two drugs, while 15.7 percent tried three drugs. Less than 10% four drugs (9.1%), and a total of ten percent (10.2%) tried 5 to 7 drugs. Less than 1% of the total sample (0.8%) of those who tried drugs indicated having experienced all eight of the drugs listed in the survey.

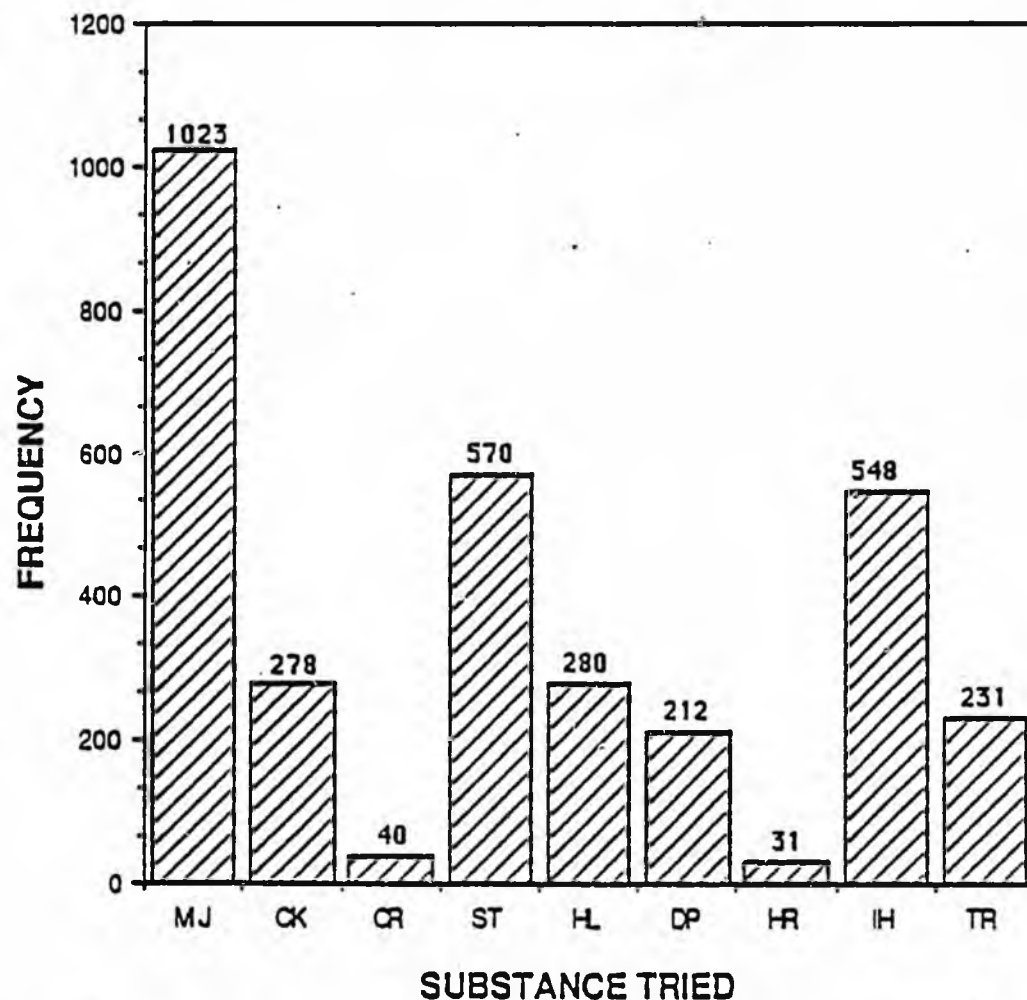
Figure 4-7
Number of Drugs Tried
Among Students Having Tried
1988
(n=2475)



(9) Drugs Experienced

Thus far the discussion has been reporting students' experience with one or more drugs. Figure 4-8 shows the actual number (frequency) of students who tried a single substance to the exclusion of others. Inspection of the data shows that the greatest number of students ($n=1,023$) restricted their experience to marijuana. About an equal number limited their experience to having tried stimulants ($n=570$) or inhalants ($n=548$), which ranked second and third, respectively. Least tried were crack ($n=40$) and heroin ($n=31$). Experiences with cocaine, hallucinogens, depressants, and tranquilizers, were relatively comparable. The overall configuration generally follows the pattern of use described above.

Figure 4-8
Frequency of Experience With a Single Drug
1988

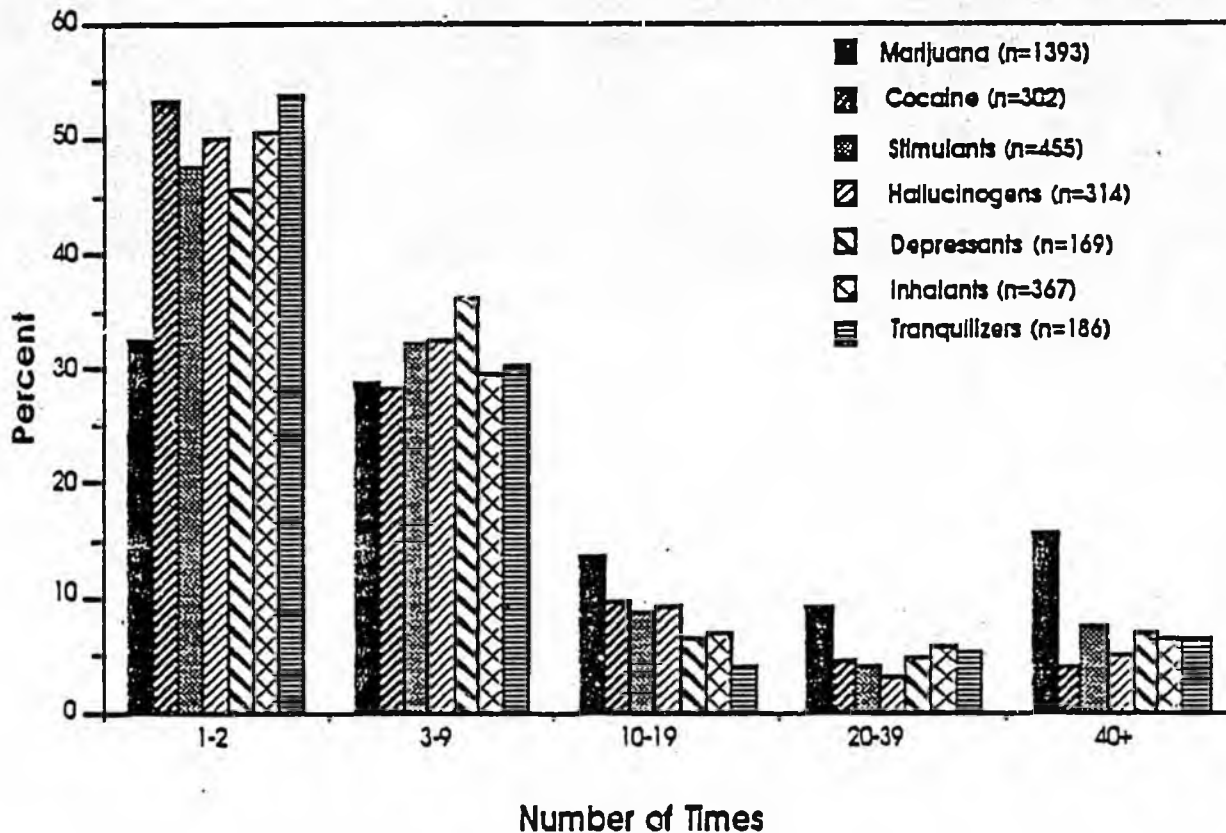


(8) Past Year Experience

Figure 4-9 shows the distribution of reports of the frequency of use of

seven different chemical substances during the past year (prior to having been surveyed). Heroin, because of its low prevalence, was not included. The figures in the legend next to each drug listed represent the actual number of respondents who indicated having tried each of the substances during the past year.

Figure 4-9
Past Year Experience with Chemical Substances
1988



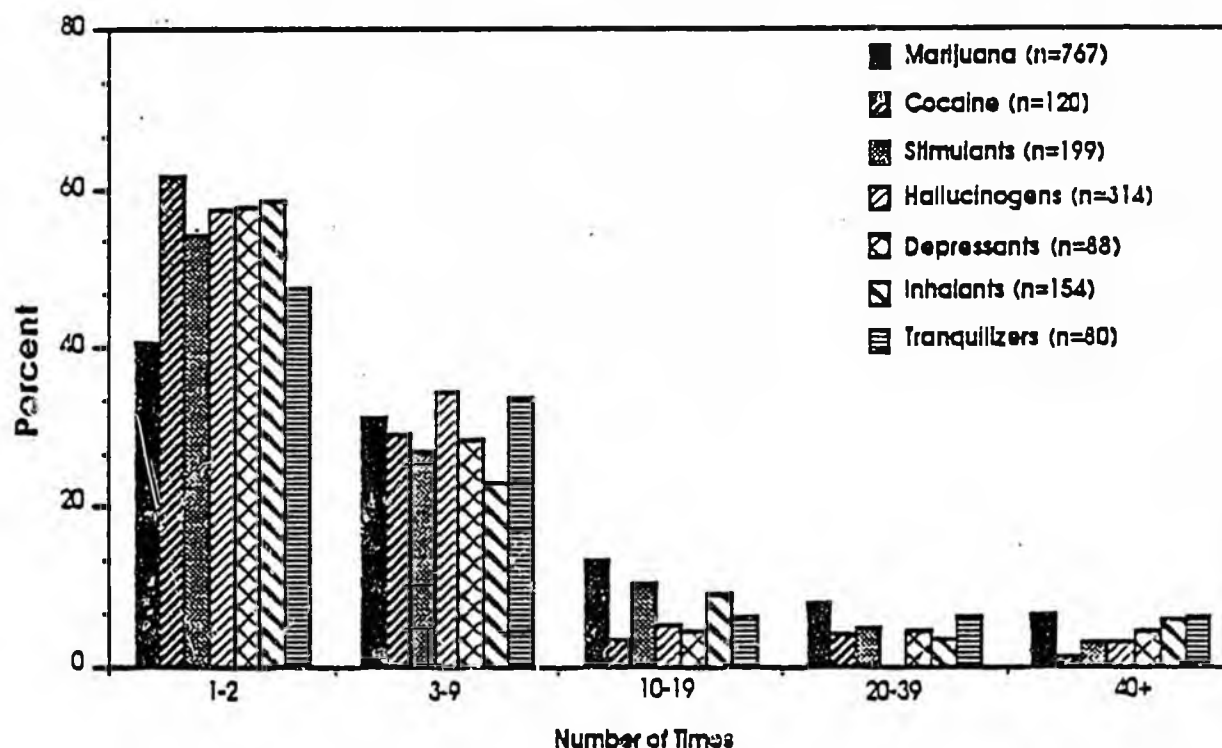
Foremost among the findings is that experimentation (1-2 times) with the different substances appeared to have been the primary mode of use. Over 50% of the students tried either cocaine or tranquilizers once or twice, while close to 50 percent tried either stimulants, hallucinogens, depressants, or inhalants. Interestingly, marijuana was the least experimented with drug (<35%). Between 30 and 35 percent of the students used drugs between 3 and 9 times, and thereafter the report of use begins to decline. Of interest, however, is the pattern of use. There is a clear trend of less experimentation and more frequent use of marijuana, with about 15 percent of the sample indicating having used marijuana more than 40 times during the past year. In contrast, there is greater experimentation with the other

substances and less frequent use. About ten percent of those who tried a substance, however, tend to have been frequent users of one or more of the drugs listed in the figure.

(11) Past Month Experience

Figure 4-10 presents the same information as in Figure 4-9 but shows the frequency of use during the past month. The findings indicate that drugs were used recently, and generally follows the pattern found in Table 4-9. Of particular significance in this Table is that about five percent of the students appear to be active and moderately heavy (20-39 times) or heavy (40+ times) users of marijuana, inhalants and tranquilizers. The latter figure represents greater than daily use of drugs by some students.

Figure 4-10
Past Month Experience with Chemical Substances
1988

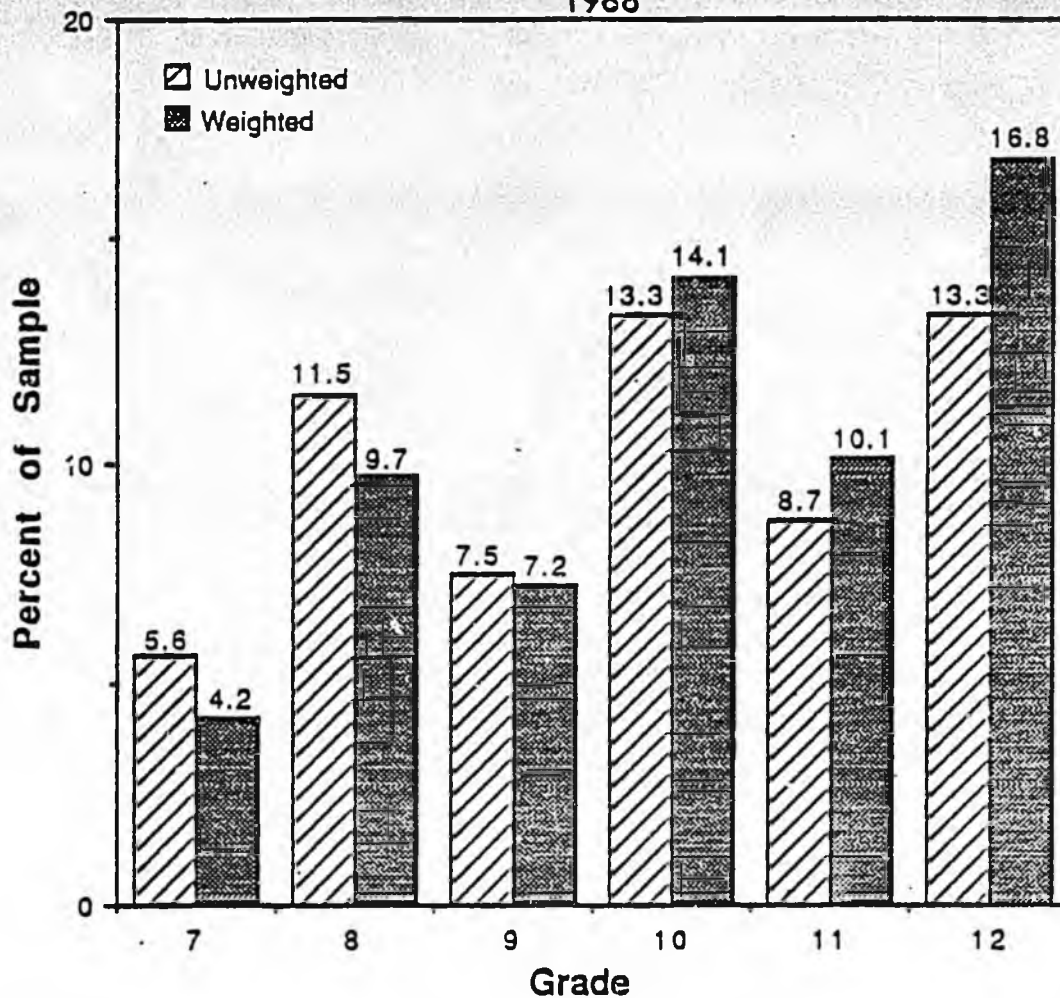


(12) Experience by Grade Level

Figures 4-11 through 4-13 present findings related to grade level and drug use.

Figure 4-11 shows a comparison of weighted and unweighted results of the percent of students, from among the entire sample, who have tried

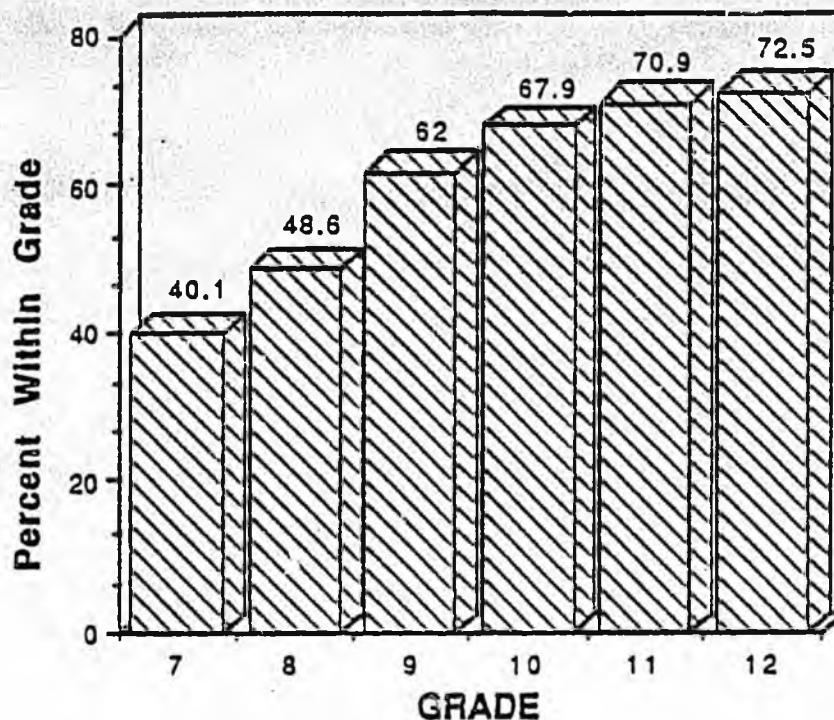
Figure 4-11
Lifetime Experience and Grade Level
Comparison of Weighted and Unweighted Results
Total sample
1988



one or more drugs (except alcohol and tobacco) either before or during they have reached their current grade level. The data were weighted to account for differences in grade levels among the school districts. Although there are some relatively small differences between the weighted and unweighted data, the overall pattern is nevertheless similar. What is revealed is a pattern of use in which grades 8, 10, and 12 show higher prevalence levels than students in grades seven, nine, and eleven. More specifically, prevalence levels are lowest in grade 7, rise in grade 8, decrease in grade 9, increase again in grade 10, decrease in grade 11, and increase in grade 12. It thus appears that students may be at higher risk for drug use within grades 8, 10, and 12 than in grades 7, 9, and 11.

The data in Figure 4-12, which are based on a weighted sample to

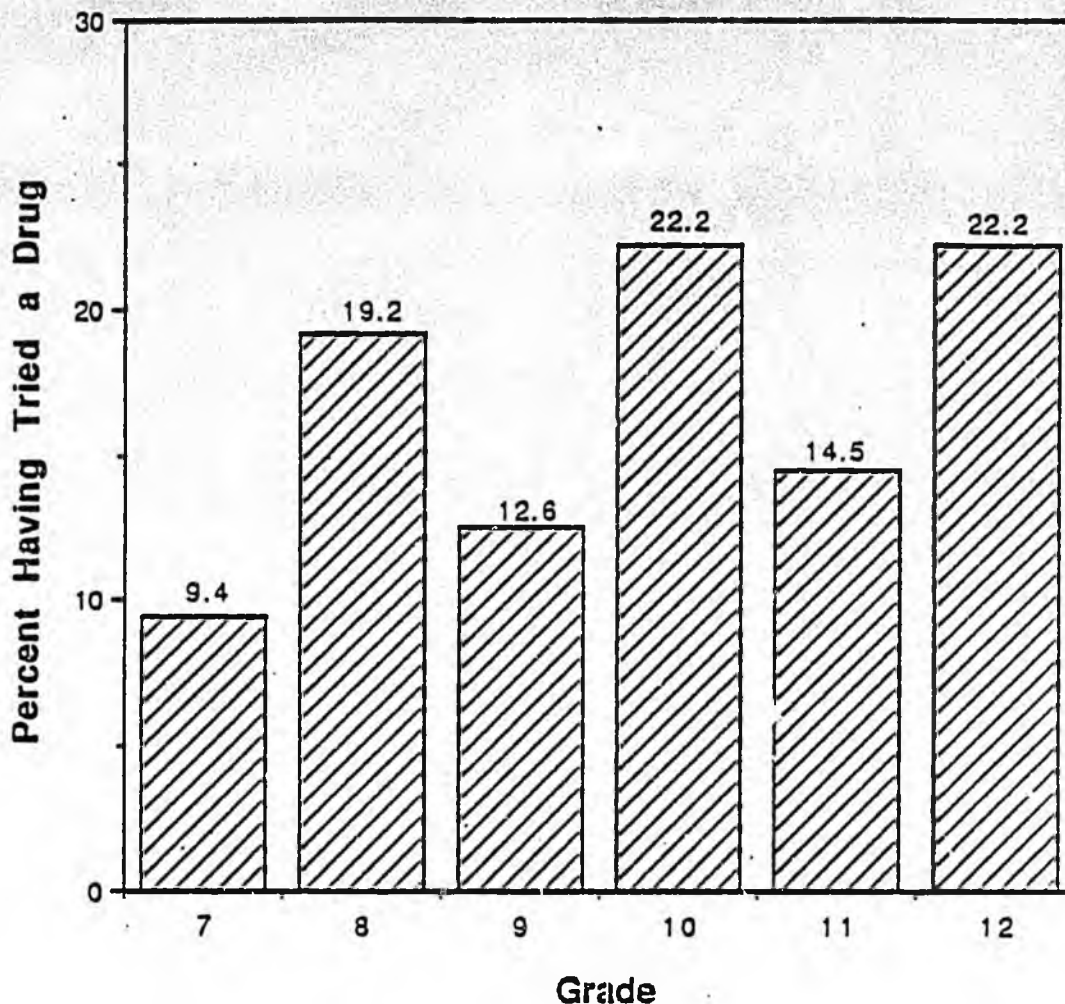
Figure 4-12
Lifetime Experience Within Grade Levels
Weighted Sample
1988



account for differences in the number of students within grade levels, represents the percent of students within each grade level who reported having tried a drug (i.e., the actual number of students among all seventh graders who tried a drug). Figure 4-12 shows a different pattern of drug use with respect to grade level and use than found in Figure 4-11 because the data for each grade level would total 100% if those not using drugs were included. (The data in Figure 4-11 is based on the proportion of students within each grade from among the total sample who reported ever having tried a drug.) This configuration indicates a rather direct relationship between grade and use: As grade level increases, the number of students having tried increases. By the time students are in the ninth grade, or higher, at least three-fifths have tried a drug, and by the time students become high school seniors nearly three-quarters have tried one or more drugs.

Shown in Figure 4-13 are the findings pertaining to the percent of students within each grade among who tried a drug either before or during their current grade level. The overall configuration is similar to that shown in Figure 4-12.

Figure 4-13
Lifetime Experience Within Grade Levels Among
Students Having Tried A Drug
1988
(n=2475)



(13) Age of initiation

Figures 4-14 through 4-17 present information related to age of initiation into drug-taking behavior for seven substances. Heroin and crack were not included because of their low prevalence rates. Figure 4-14 shows the ages of initiation for seven substances: marijuana (MJ), cocaine (CK), stimulants (ST), Hallucinogens (HL), Depressants (DP), inhalants (IH), and tranquilizers (TQ). From this table it appears that although some youth are beginning drug use at or before 11 years of age, the most common time for initiation into each type of drug is between 12 and 13 years. Except for inhalants, which decrease after age 12, there is a sharp increase in initiation between 11 and 13 years. Thereafter some drugs continue to peak, some decline, while others show a brief plateau. Initiation into all substances begins to decline after age 15.

Figure 4-14
Age of Initiation
1988

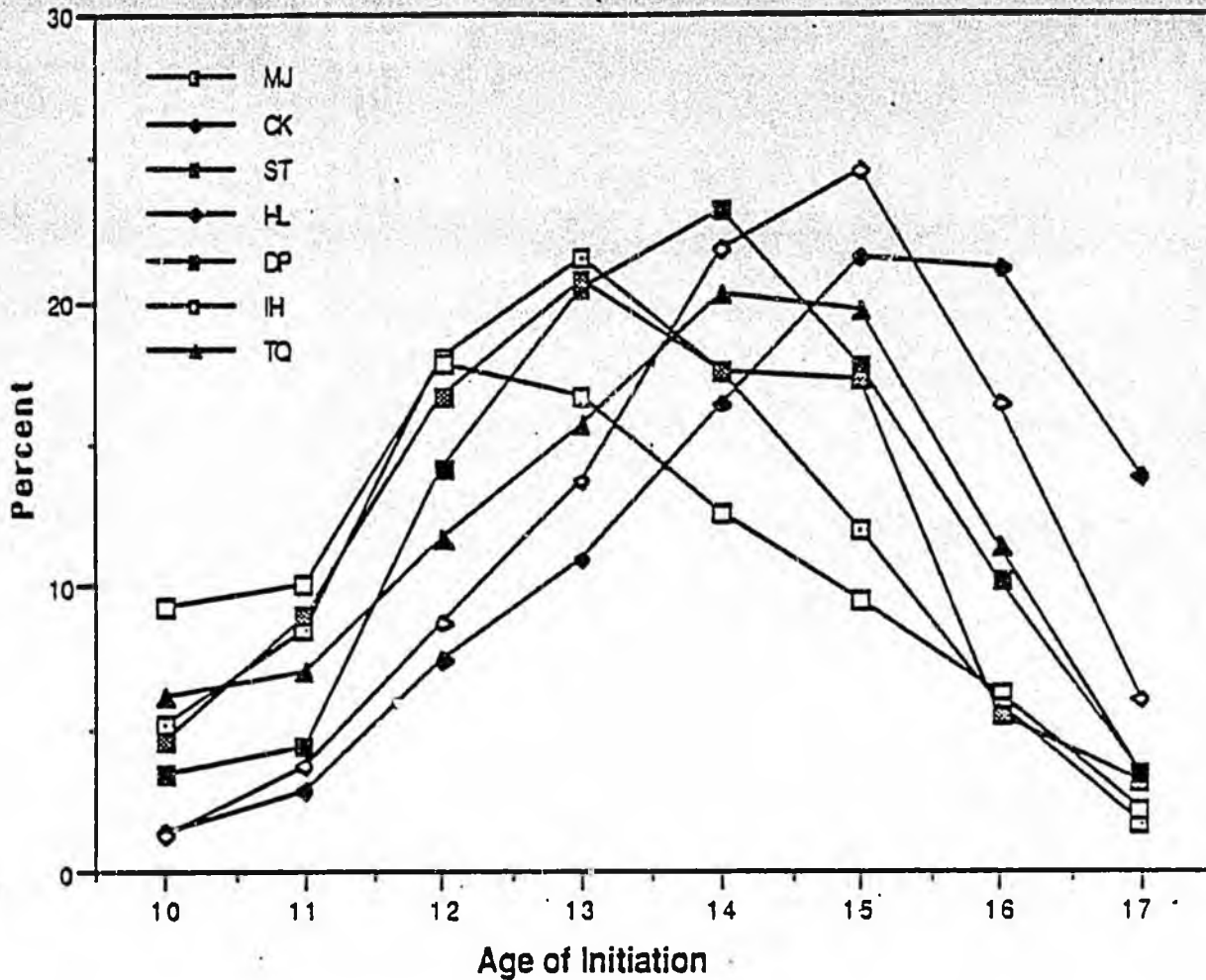
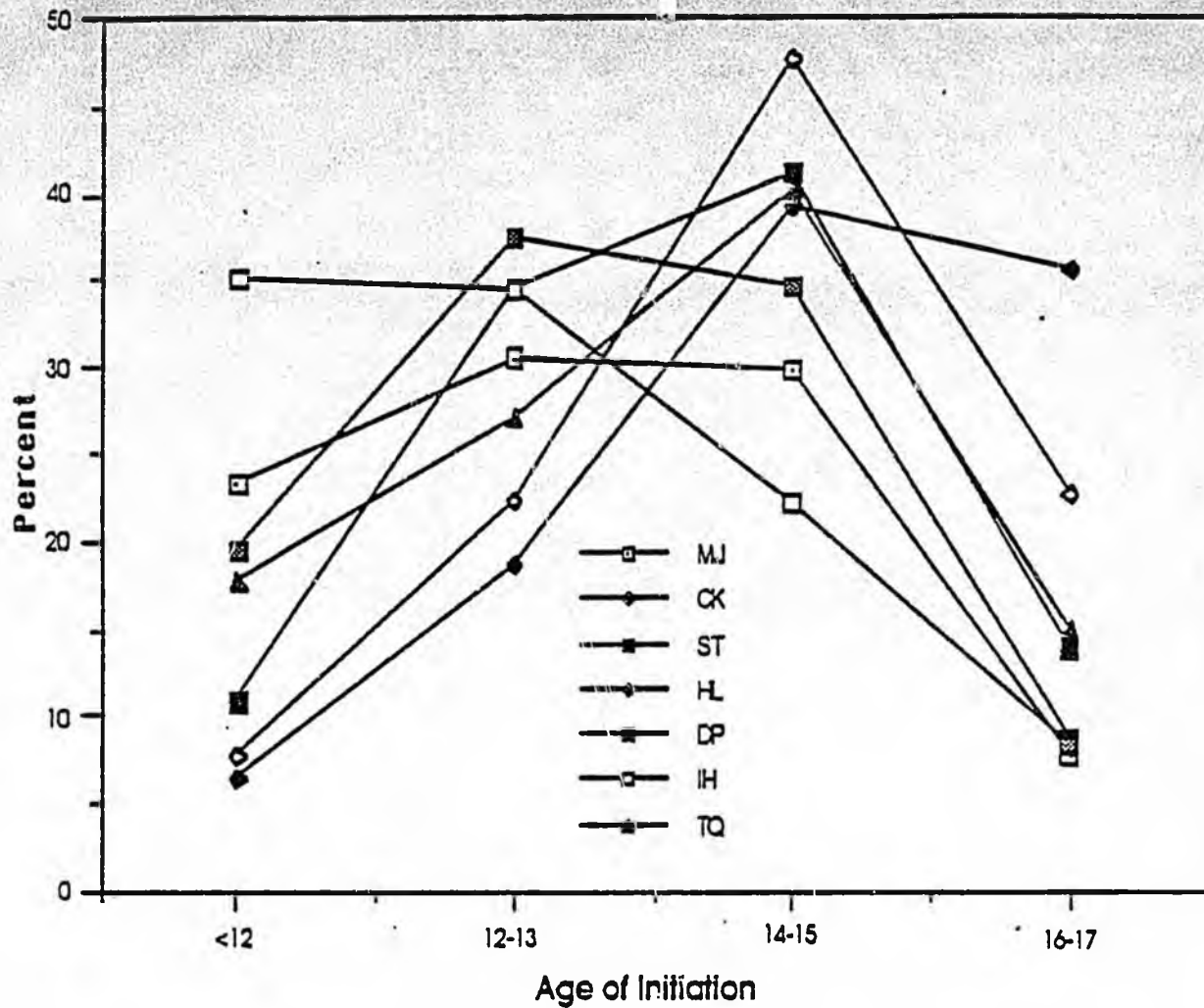


Figure 4-15 shows the same data Figure 4-14, but the ages are grouped into two-year intervals. The increase in initiation up to age 13 is dramatically illustrated by the sharp rise in the slope of the line for each drug from less than 12 years to between 12-13 years. Thereafter initiation into hallucinogens and cocaine continues to increase very sharply. What is of particular concern is the large number of students (about 35%) who have tried inhalants before they are twelve. Over 20 percent of the students had also tried marijuana, while initiation into depressants and tranquilizers is also relatively high.

Figure 4-16 shows a direct comparison of the age of initiation by age groupings for marijuana, cocaine, stimulants and inhalants, the four most prevalent substances tried by members of the sample. What may be observed more clearly from this table is that while many students try

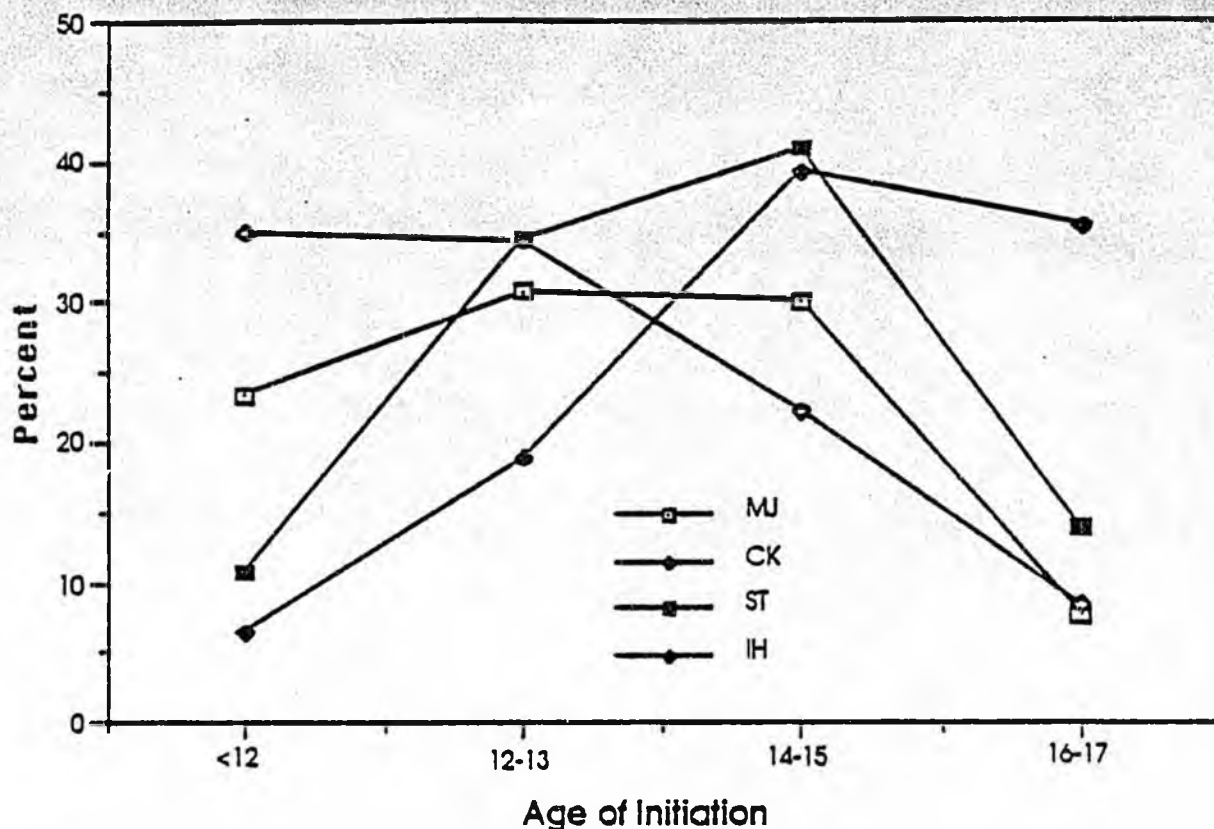
Figure 4-15
Age of Initiation
1988



inhalants at an early age (<12), its initiation begins to decline thereafter. But as initiation into inhalants declines, initiation into marijuana, stimulants, and cocaine increase. The most dramatic increase occurs for cocaine, which rises sharply between 12-13 and 14-15 years, and remains high at 16-17 years. Marijuana tends to stay steady between 12-13 and 14-15 years and then declines. Stimulants also increase sharply up to 12-13 years, then less slowly until 14-15 years, and then declines rapidly.

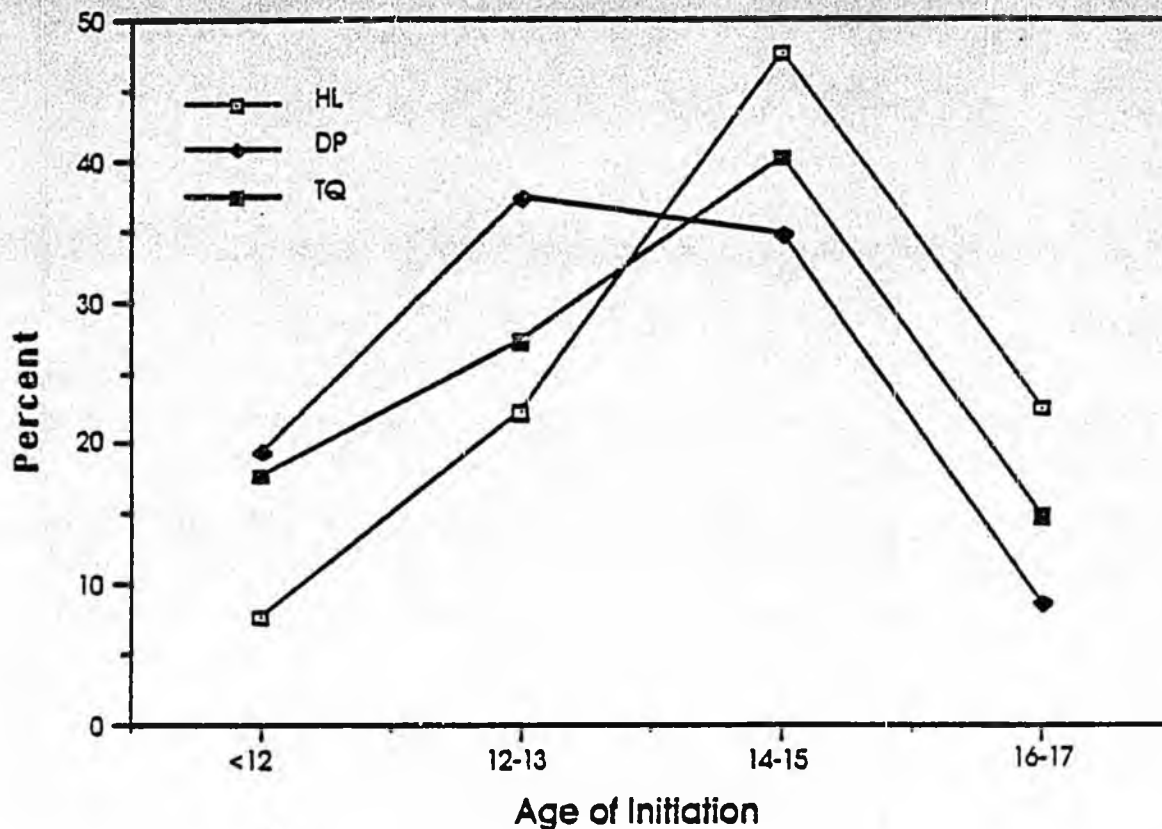
Shown in Figure 4-17 are initiation rates by age groupings for hallucinogens, depressants, and tranquilizers. Among these substances, hallucinogens show the most dramatic increase, peaking at 14-15 years then declining rapidly. Depressants increase up to 12-13 years, then begins to decline thereafter, while tranquilizers tend to show a steady increase up until age 14-15, and a rapid decline thereafter.

Figure 4-16
 Age of Initiation
 Marijuana - Cocaine - Stimulants - Inhalants
 1988



In summary, of the findings on initiation into drug-taking behavior, it is evident that the period between 12 and 13 years presents the greatest risk for initiation into or experimentation with drugs. Subsequent to age 13 initiation continues to increase for some substances, while it decreases for others. The major exception to this pattern is initiation into cocaine, which peaks at age 15, and remains high through 17 years of age. It thus appears that students may have started to try cocaine after other substances were tried first. Additionally, there is a uniform trend showing a decrease in initiation subsequent to age 15.

Figure 4-17
 Age of Initiation
 Hallucinogens - Depressants - Tranquilizers
 1988

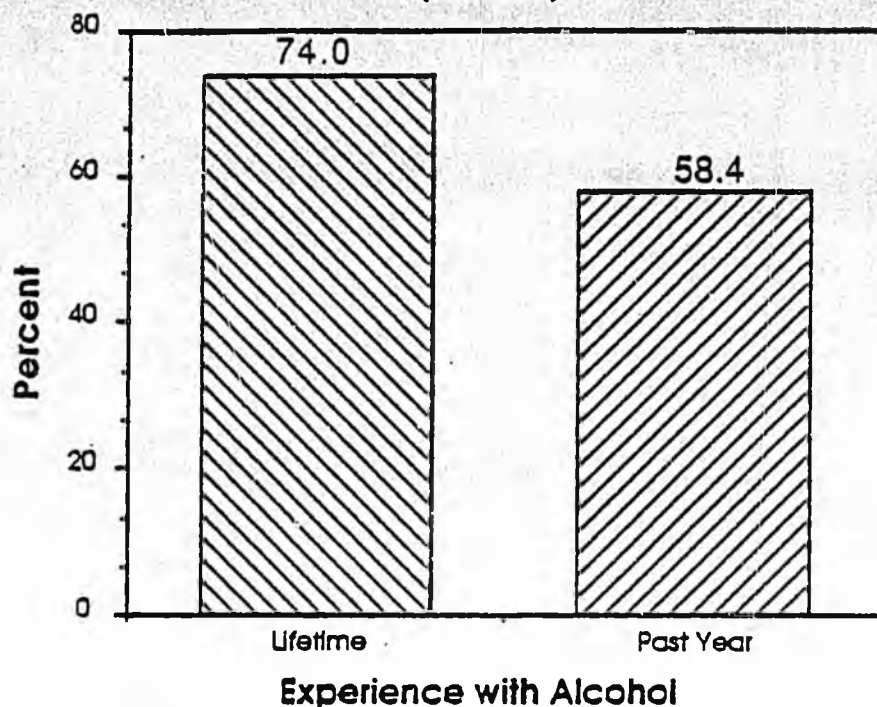


 (14) Alcohol: Lifetime and Past Year Prevalence

Findings concerning alcohol or drinking behavior among the sample have been separated from the results pertaining to other drugs in order to discuss each as separate entities.

Figure 4-18 indicates the proportion of students who had ever consumed alcohol outside their home with friends, and the percent of students who had reported drinking alcohol beverages during the past year. Approximately three-quarters of the sample (74%) had indicated that they had consumed an alcoholic beverage during their lifetime, and close to two-thirds of the sample (58.4%) noted that they had consumed an alcoholic beverage during the past year.

Figure 4-18
Experience with Alcohol
Total Sample
1988
(n=4129)



(15) Frequency of Drinking: Past 30 Days

Figure 4-19 shows the number of occasions students used alcohol during the past thirty days (prior to having been sampled). The data in the table are derived from those students who reported ever having consumed alcohol (n=2292). It is apparent from the data in Figure 4-19 that the majority of students who drank did so only 1-3 times (44.3%). Fewer (13.8%) drank 1-2 times a week, and less (6.8%) used alcohol 3-4 times a week. Cumulatively, 3.7% of the students drank more than 5-6 times a week. Thirty-one percent of the students reported that they did not drink any alcoholic beverages during the past 30 days.

(16) Quantity of Drinking: Past 30 Days

Among those who drank during the past 30 days (n=2633), the majority (35.9%), as shown in Figure 4-20, consumed 2-5 drinks. Over ten percent had 6-10 drinks, while 7.1 percent had 11 or more drinks. About a third of the students (32.2) did not drink, while 11.6 percent had only one drink.

Figure 4-19
Frequency of Drinking Past Thirty Days
1988
(n=2962)

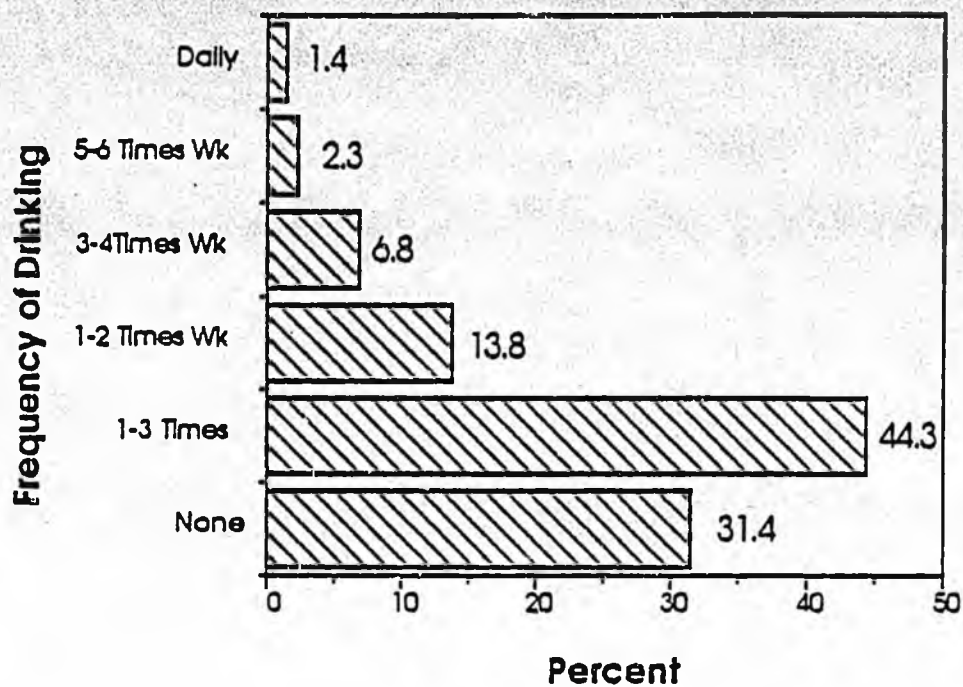
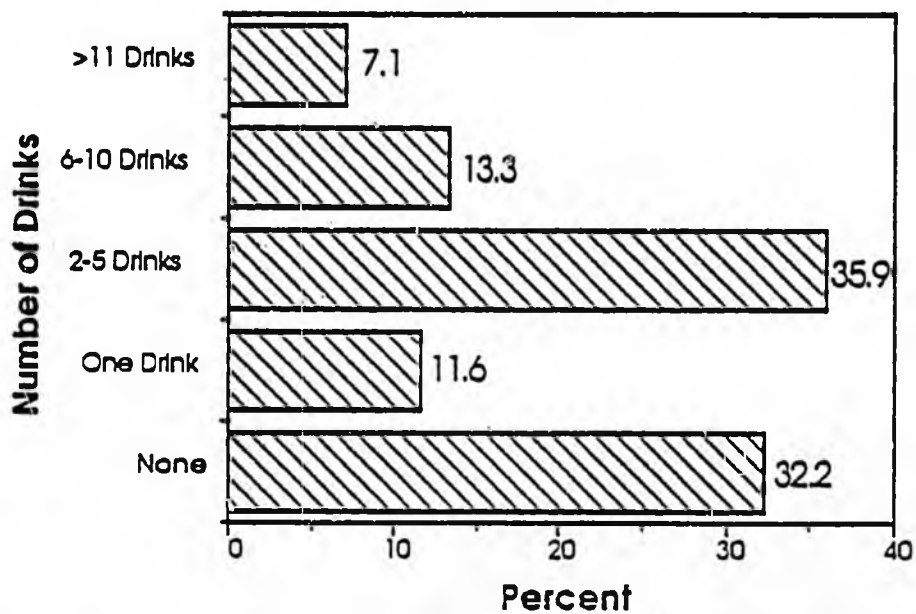


Figure 4-20
Amount of Drinks Consumed
Past Thirty Days
1988
(n=2633)



(17) Alcohol and Grade Level

Figure 4-21 describes the percent of students, from among the total sample and based on unweighted data, who reported having consumed alcohol prior to or at their current grade level. The configuration is identical to the pattern observed in Figures 4-11 and 4-13 for use of drugs. Grades 8, 10 and 12 all show peaks or increases, while grades 7, 9 and 11 show decreases. The similarity of these findings reinforces the notion that certain grades may be more critical than others with respect to use of alcohol and other drugs.

Figure 4-21
Lifetime Experience With Alcohol By Grade
Total Sample
1988
(n=4129)

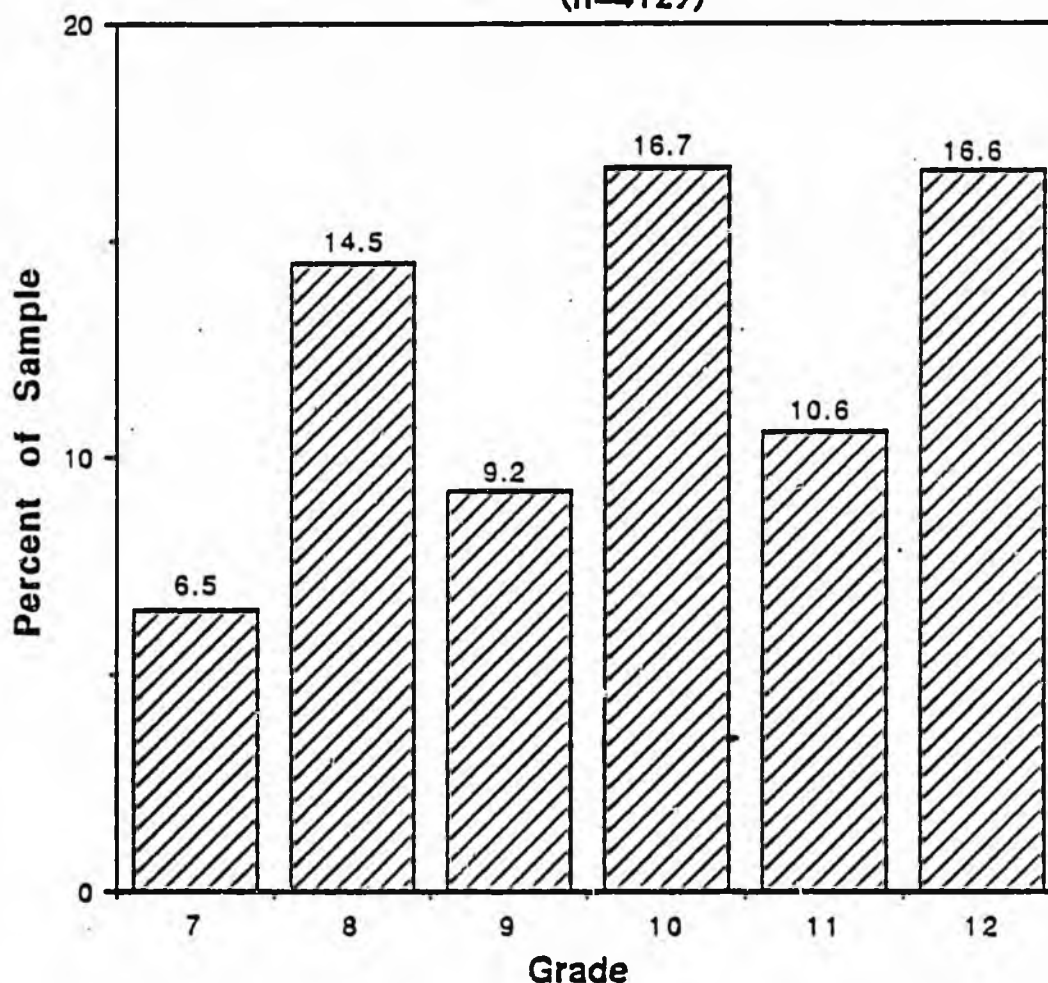
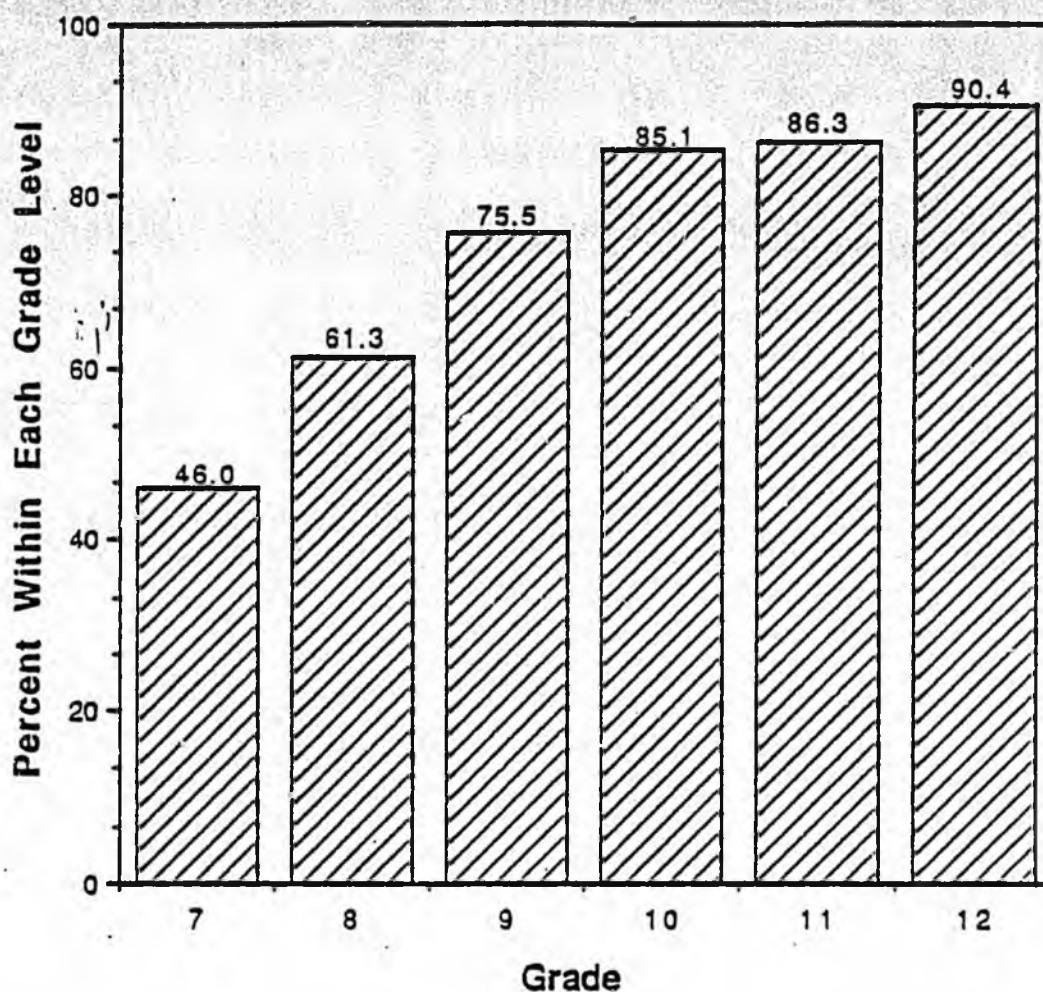


Figure 4-22, which reports lifetime prevalence with alcohol within each grade level, shows a similar configuration to that in Figure 4-12. As is shown, as grade level increases, a greater proportion of students drink alcohol.

Figure 4-22
Lifetime Experience With Alcohol Within Grade Levels
1988
(n=3057)



(18) Cigarettes and Smokeless Tobacco

Figure 4-23 presents data on the prevalence of smoking cigarettes and on the use of chewing or smokeless tobacco. Slightly over three-fifths (61.9%) of the sample have smoked cigarettes, and over a third (38.4%) have tried either smokeless or chewing tobacco at least once.

(19) Frequency of Smoking: Past 30 Days

The frequency with which students reported smoking is described in Figure 4-24. Interestingly, of those who reported ever having tried smoking, over half (55.5%) did not smoke during the past 30 days. Among those who did smoke, it appears that they can be divided into two primary groups, one which tends to smoke infrequently (less than 4 times a week (19.0%)), and another of equal amount who tend to be heavier smokers

(two-three times a day or more (21.8%)).

Figure 4-23
Use of Tobacco Products
Lifetime Experience
Total Sample
1988
(n=4129)

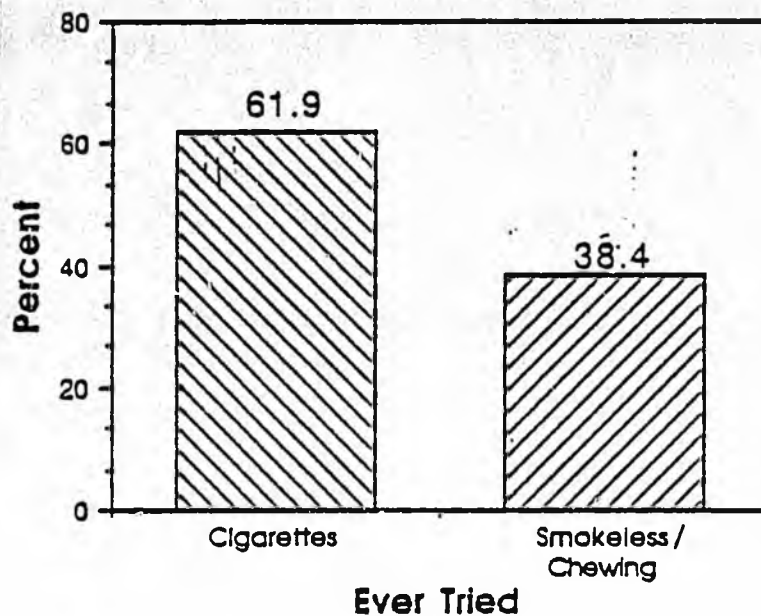
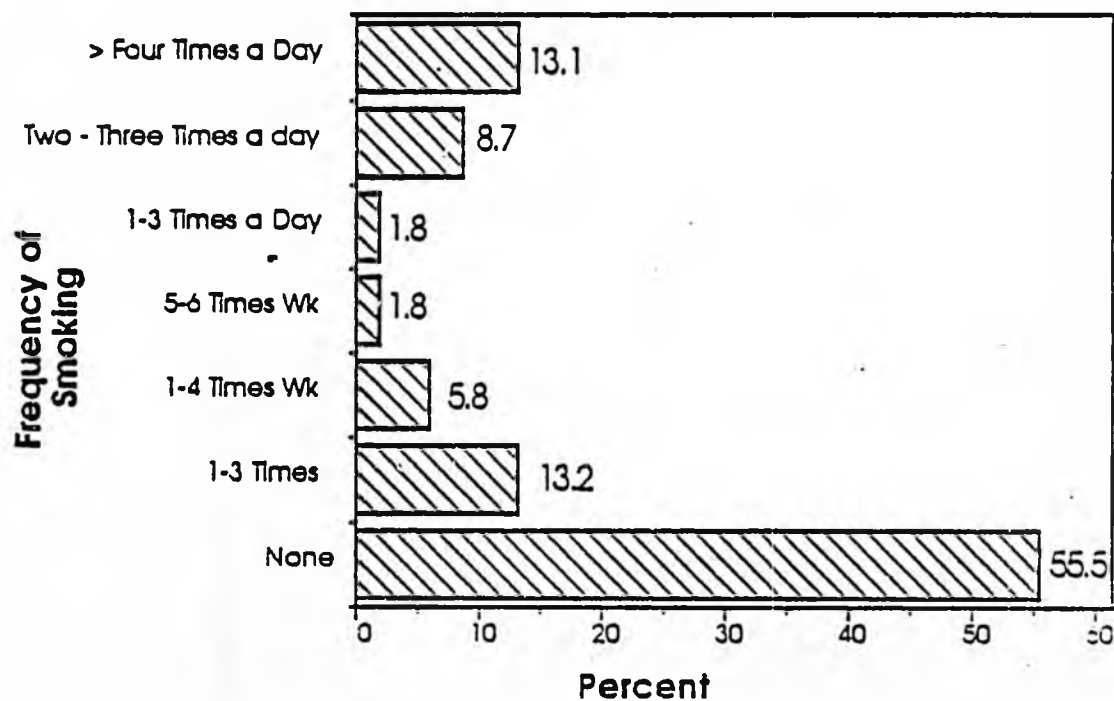


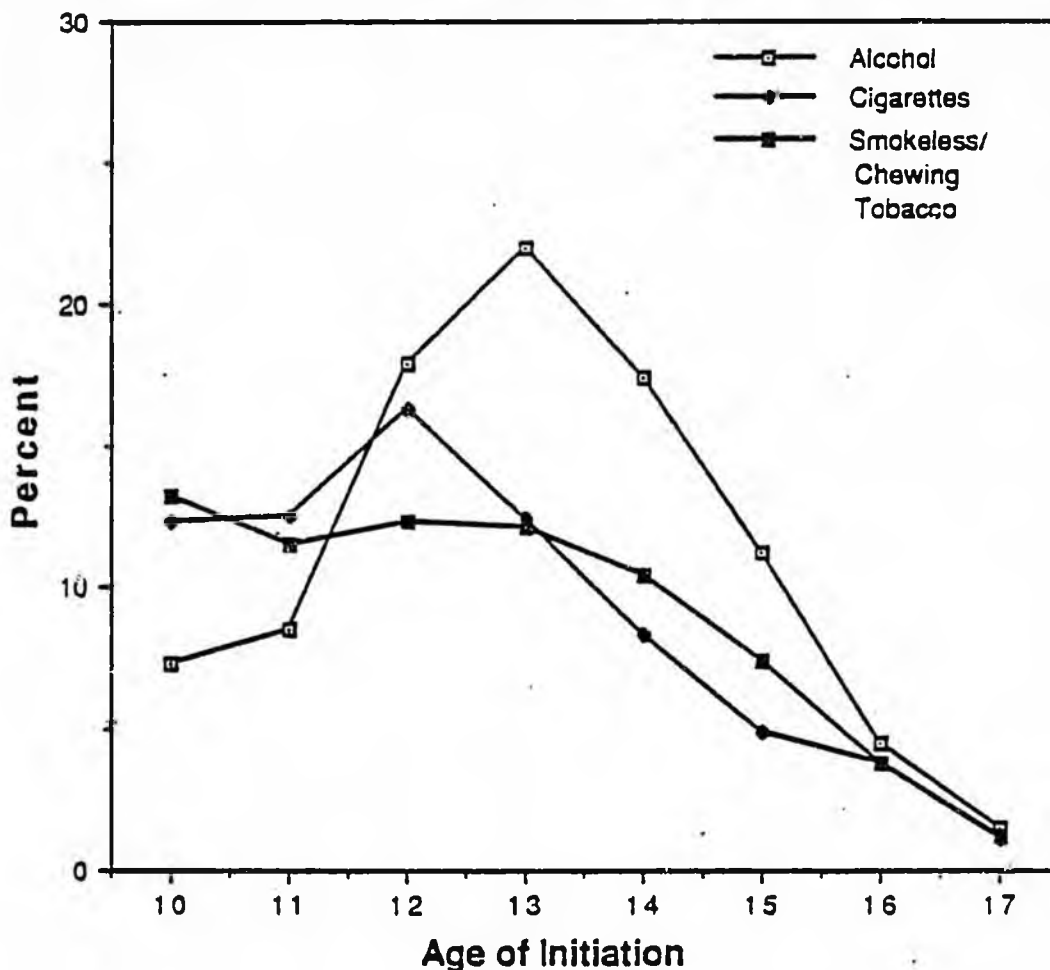
Figure 4-24
Frequency of Smoking Past Thirty days
1988
(n=2381)



(18) Initiation into Alcohol, Cigarettes, and Smokeless/Chewing Tobacco

A comparison of ages of initiation into alcohol, cigarettes, and smokeless or chewing tobacco is shown in Figure 4-25. A higher percentage of students are initiated into tobacco products than alcohol at ages 10 and 11, but thereafter initiation into alcohol increases steadily until age 13, and decreases thereafter. Initiation into tobacco products declines steadily after peaking at 12 years of age. Although a large number of students have reported smoking cigarettes or using smokeless or chewing tobacco (see Figures 4-23 and 4-24), their use would appear to have its largest occurrence prior to age 13.

Figure 4-25
Age of Initiation
Alcohol-Cigarettes-Smokeless/Chewing Tobacco
1988

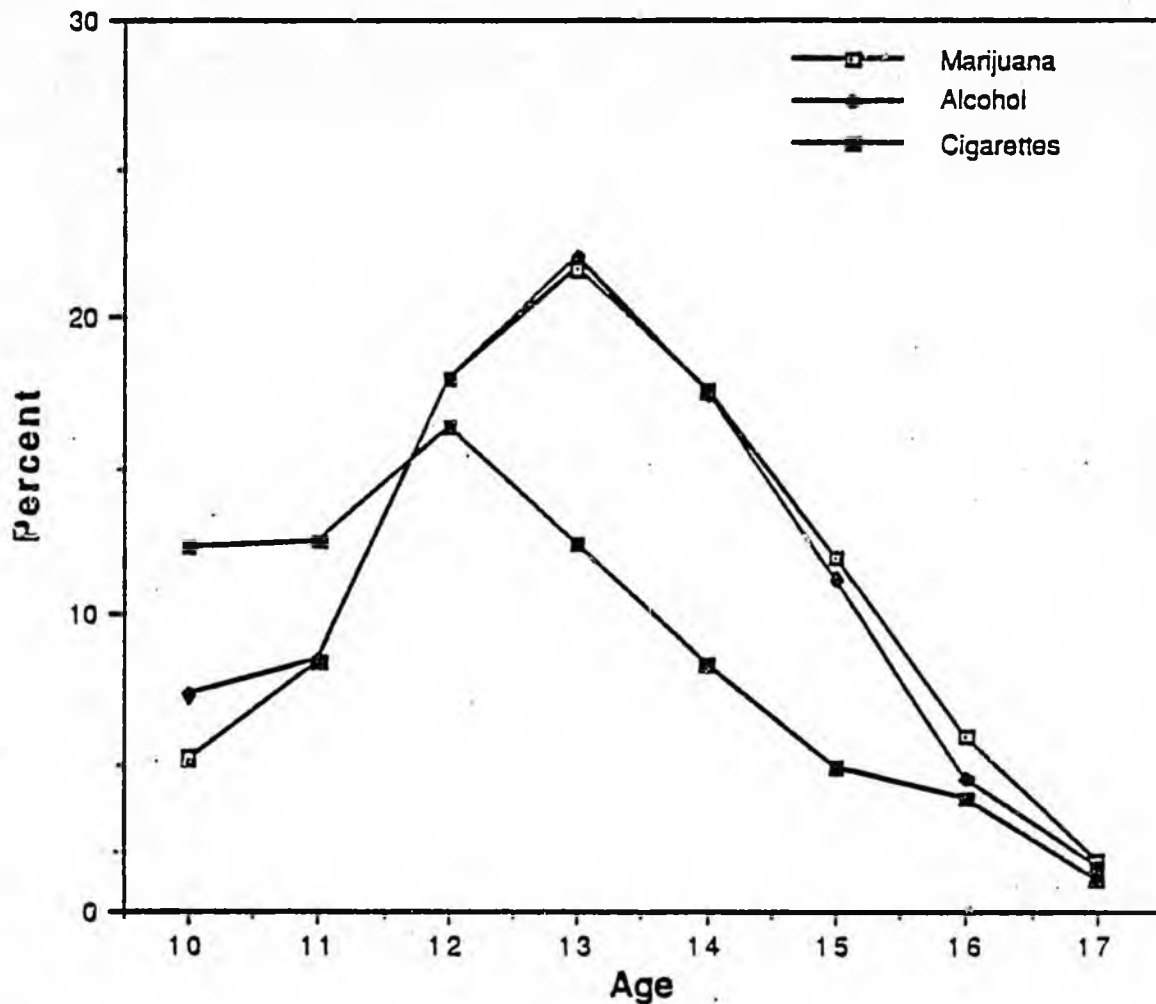


(21) Initiation into Alcohol, Cigarettes and Marijuana

Figure 4-26 provides a comparison of age of initiation into alcohol, cigarettes and marijuana, three of the most widely used substances by

the students in the sample. Although more students start using cigarettes than either alcohol or marijuana at ages 10 or 11, its initiation declines very sharply after peaking at age 12, the age level when initiation into alcohol, and marijuana begins to increase. Initiation into marijuana and alcohol peaks at 13 years, and then declines steadily. The initiation curves for alcohol and marijuana are almost identical, suggesting that their onset may be highly interrelated.

Figure 4-26
Age of Initiation
Alcohol-Cigarettes-Marijuana
1988



Summary

The nature and pattern of drug-taking behavior reported by the students in the sample tends to reflect high prevalence rates for experiences with chemical substances. More than half of the students have reported having tried marijuana, nearly one in every three reported

having tried stimulants or inhalants, and nearly one out of every five have tried cocaine. Experiences with other drugs are also high, including alcohol and tobacco products. What is evident is that when there was a chance to try a drug (albeit illicitly), over half of the students tried a drug. Although the majority of experiences with chemical substances seem to be experimental, about ten percent of the sample appear to be frequent or heavy drug users. Additionally, a large number of students have consumed alcohol, of which about 70 percent may be considered to actively consume alcohol in varying amounts and with varying frequency. A large percent of students have smoked cigarettes or tried smokeless or chewing tobacco, with approximately a quarter of the sample actively smoking.

There is also a definite relationship between age and grade and drug-taking behavior. As age and grade increase there is a corresponding increase in the prevalence of drug-taking behavior, but this relationship is more complex than it seems, in that it varies greatly with respect to ages at which different drugs are first experienced. Nevertheless, ages 12 and 13 are the ones at which drugs are most likely to be tried for the first time.

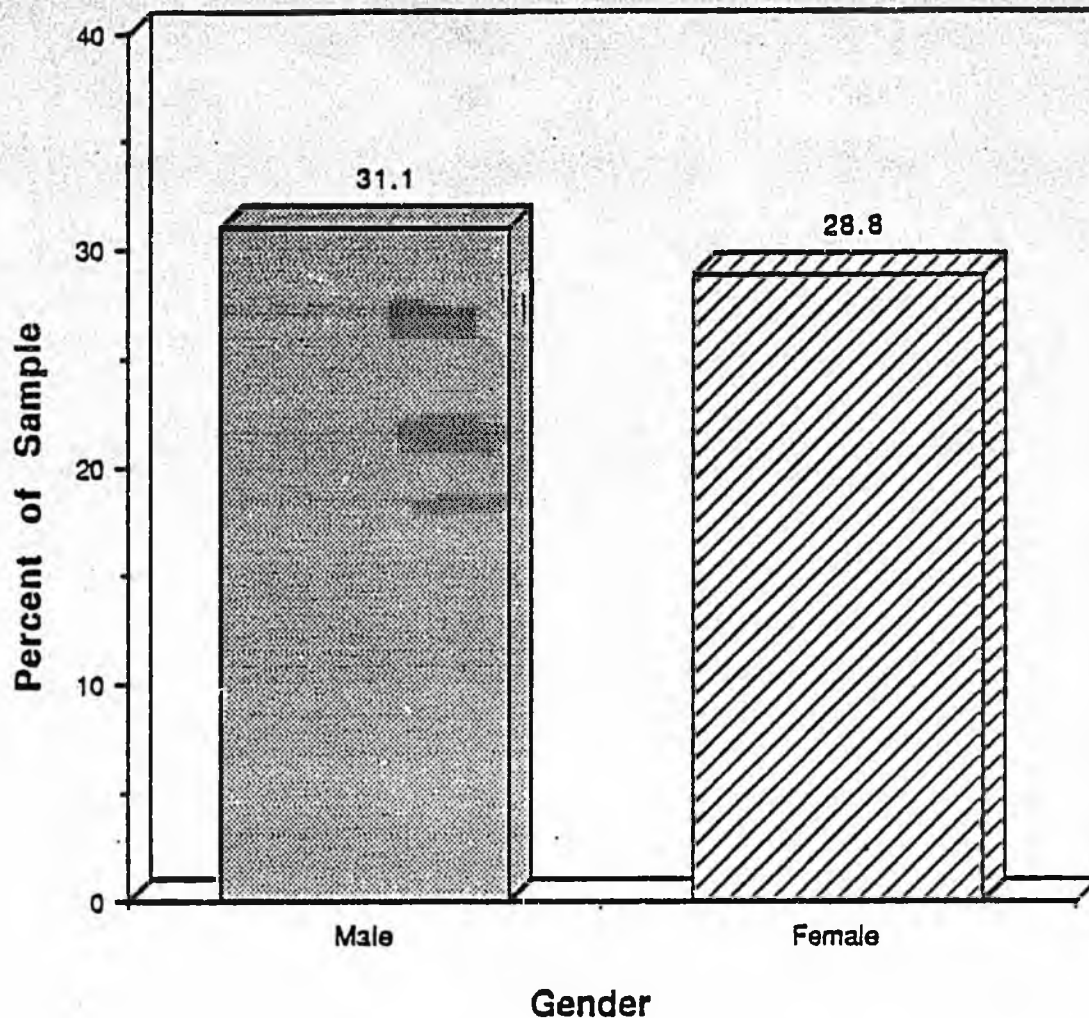
B. Demographic Characteristics and Drug Use

This section describes some of the relationships between prevalence and specific characteristics of the sample.

(1) Gender and Drug Use: Percent of Sample

Figure 4-27 indicates the percent of males and females within the total sample who reported ever having tried a drug. The proportions are about equally distributed, but slightly more males (31.1%) than females (28.8%) tended to have tried one or more drugs.

Figure 4-27
Gender and Lifetime Experience with a Drug
Total Sample
1988
(n=4129)



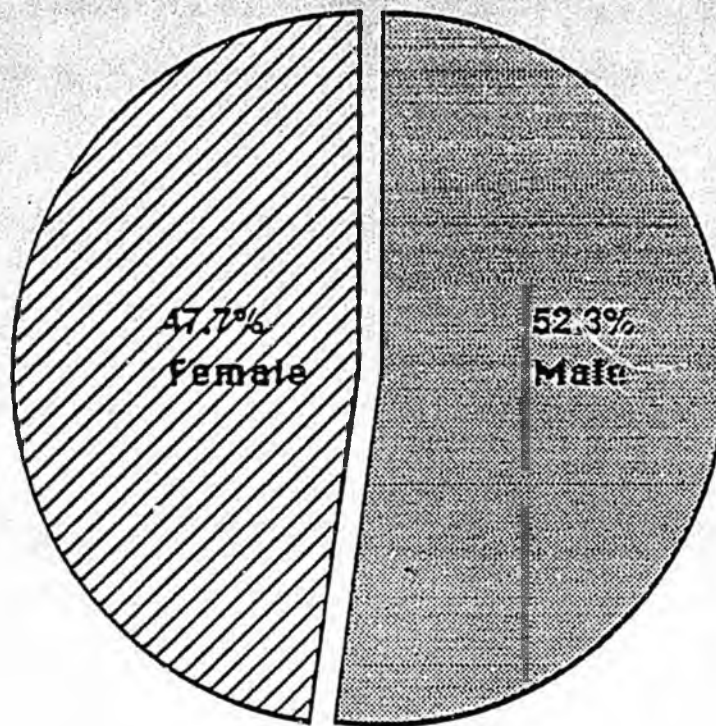
(2) Gender and Drug use: Percent of Students Trying

Figure 4-28 shows the proportion of males and females who tried a drug based on the total number of students trying a drug. Males (52.3%) tend to exceed females (47.%) to a modest extent.

(3) Grade and Drug Use by Substance

The data in Figure 4-29 are based on the number of students among the total sample, at different grade levels, who ever tried a substance. Heroin and tranquilizers were not included because of their lower prevalence levels. The overall configuration generally follows the patterns of use reported previously when describing grade and drug use, but varies for different drugs. One clear pattern involves cigarettes (TB).

Figure 4-28
Gender and Drug Use
Lifetime Experience With a Drug Among Those Having tried
(n=2097)



alcohol (AL), and Marijuana (MJ), the substances showing the highest prevalence levels. Use, which is relatively high in the seventh grade compared to inhalants (IH), stimulants (ST), depressants (DP), and cocaine (CK), increases at grade eight, then rises and falls thereafter. This same pattern is observed for the other substances, but at much lower prevalence levels, and with less dramatic increases and decreases. The overall configuration not only continues to suggest that grades 8, 10, and 12 may be important periods related to drug-taking behavior, but also that use of some drugs remain fairly consistent while use of others may either be low or minimal after initiation.

(4) Grade, Gender, and Lifetime Experience with a Drug

The pattern of use observed in Figure 4-30, which illustrates the relationship between gender, grade, and experience with a drug, is consistent with the data observed in Figure 4-29. (The data in figure 4-30 are based on the number of students within each grade who reported ever having tried a drug from among all students.) Except for grades 9 and 11, where use is about equal, males generally tried drugs to a greater extent than