

**Evaluation of the
National Youth Anti-Drug Media Campaign:
Campaign Exposure and Baseline Measurement of
Correlates of Illicit Drug Use From
November 1999 Through May 2000**

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Evaluation of the National Youth Anti-Drug Media Campaign: Campaign Exposure and Baseline Measurement of Correlates of Illicit Drug Use from November 1999 through May 2000

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EXECUTIVE SUMMARY

The number one goal of *The National Drug Control Strategy* is to “Educate and enable America’s youth to reject illegal drugs as well as alcohol and tobacco.” Objectives in support of that goal include “Pursue a vigorous advertising and public communications program dealing with the dangers of drug, alcohol, and tobacco use by youth.” Under the Treasury-Postal Appropriations Act of 1998, Congress approved funding (P.L. 105-61) for “a national media campaign to reduce and prevent drug use among young Americans.” Pursuant to this act, the Office of National Drug Control Policy (ONDCP) launched the National Youth Anti-Drug Media Campaign (the Media Campaign).

This program has progressed through three phases of increasing complexity and intensity. Phases I and II are not discussed in this report. ONDCP has other reports available that evaluate those phases. This report focuses on Phase III, which began in September 1999 and is planned to run at least until 2003. An evaluation of Phase III is being conducted under contract to the National Institute on Drug Abuse (NIDA) by Westat and its subcontractor, the Annenberg School for Communication at the University of Pennsylvania. Funding of the evaluation is provided by ONDCP from the appropriation for the Media Campaign itself. This is the first semi-annual report of the Westat and Annenberg evaluation of Phase III of the Media Campaign.

This report by Westat and Annenberg provides four types of information:

1. A brief description of the Media Campaign’s activities to date;
2. A review of the logic and approach of the evaluation;
3. Statistics on the level of exposure to messages achieved by the Media Campaign in the first 9 months of Phase III; and
4. A description of baseline behaviors, beliefs, attitudes, and intentions of both parents and youth. These descriptions focus on the outcomes that will be monitored over time for possible changes that might be brought about by the Media Campaign.

This report from the Westat and Annenberg evaluation presents a first round of measurement. It includes early estimates of exposure to the Media Campaign, and it identifies anti-drug beliefs and drug use behaviors that will be watched over time both for movement and for their association with exposure. It thus sets the stage for the evaluation. This report contains no findings about the effectiveness of the Media Campaign. Such findings after only 9 months of operation of Phase III of the Media Campaign would be premature. This reflects both substantive and technical concerns. From the substantive perspective, effects are expected to be achieved and measurable after a longer period of Media Campaign operations. From the technical perspective, there would be little confidence in inferences from a simple cross-sectional analysis, without even accompanying evidence for change over time in outcomes.

The first report on tentative analyses of effects will be issued after the next wave of data collection in March 2001. At that time, there will be some evidence presented about changes, if any, in outcome measures like the cognitive variables of interest such as beliefs about the

consequences of marijuana use at least once or twice in a lifetime. This evidence about change will be complemented by evidence about association of exposure with the outcome measures. However, it is possible that Media Campaign-produced change will take longer to achieve and/or to detect. Indeed, conclusive evidence will take several years to accumulate and analyze. The final report is scheduled for March 2004. At that time, the sample youth and their parents will have been studied for 3 to 4 years.

Background on the Media Campaign

The Media Campaign has three goals:

- Educate and enable America's youth to reject illegal drugs;
- Prevent youth from initiating use of drugs, especially marijuana and inhalants; and
- Convince occasional users of these and other drugs to stop using drugs.

The Media Campaign targets paid advertising at youth aged 9 to 11, 12 to 13, and 14 to 18, parents of youth in these age ranges, and other influential adults. Phase III advertising is being disseminated through a full range of media or “channels” following a *Communications Strategy* developed by ONDCP. Phase III also includes components other than advertising. There are partnerships with the media, entertainment and sports industries, as well as civic, professional, and community groups. These other components, which are being coordinated by a public relations firm, include encouraging entertainment programs with anti-drug themes, coverage of the anti-drug campaign in the news media, community activities, corporate co-sponsorship, and special interactive media programming.

ONDCP runs the Media Campaign in collaboration with the following groups:

- The Partnership for a Drug-Free America (PDFA), which provides the creative advertising for the Media Campaign through its existing pro bono relationship with leading American advertising companies;
- A Behavioral Change Expert Panel (BCEP) of outside scientists who help to inform the content of the advertisements to reflect the latest research on behavior modification, prevention, and target audiences;
- Ogilvy, a national advertising firm, which organizes and executes media buying, carries out some supportive research, assures a coherent advertising strategy, and conducts day-to-day management of the Media Campaign; and
- Fleishman-Hillard, a public relations firm, which coordinates the non-advertising components of the Media Campaign.

For Phase III, advertising space is purchased on television, radio, newspapers, magazines, billboards, transit ads, bus shelters, movie theaters, video rentals, Internet sites, Channel One broadcast in schools, and other venues as appropriate. The television buys include spot (local), network, and cable television. One of the requirements in the Media Campaign

appropriations language is that each paid advertising slot must be accompanied by a donation of equal value for public service messages from the media, known as the pro bono match. The pro bono match involves one-to-one matching time for public service advertisements or in-kind programming. The pro bono spots may include anti-alcohol, anti-tobacco themes, and mentoring, but such themes will not be part of the paid advertising.

Methodology

The report presents results from an in-home survey of 3,312 youth from 9 to 18 years old and 2,293 of their parents undertaken between November 1999 and May 2000. These respondents represent the approximately 40 million youth and 43 million of their parents who are the target audience for the Media Campaign. The name of this survey is the National Survey of Parents and Youth (NSPY).

NSPY was designed to represent youth living in homes in the United States. Sampling of eligible youth was designed to produce approximately equal sized samples within three age subgroups (9-11, 12-13, 14-18). One or two youth were randomly selected from each eligible sample household. One parent was randomly chosen for each eligible household. A second parent was drawn in the rare event where the two sample youth were not siblings.

The interviewers for NSPY achieved a response rate of 64 percent for youth and 61 percent for parents. Final estimates are adjusted for nonresponse, for differences with known population characteristics, with confidence intervals accounting for the complex sample design.

NSPY questionnaires were administered in respondents' homes on touch-screen laptop computers. Because of the sensitive nature of the data to be collected during the interviews, a certificate of confidentiality was obtained for the survey from the Department of Health and Human Services, and confidentiality was promised to the respondent. All sensitive questions and answer categories appeared on the laptop screen and were said to the respondent in a recorded voice over headphones that could only be heard by the respondent. The responses were chosen by touching the laptop screen.

The NSPY questionnaire for youth included extensive measurement of their exposure to Media Campaign messages, and other anti-drug messages, their beliefs, attitudes, intentions, and behaviors with regard to drugs and a wide variety of other factors either known to be related to drug use or likely to make youth more or less susceptible to Media Campaign messages.

The NSPY questionnaire for parents also included measures about exposure to Media Campaign messages, and other anti-drug messages. In addition, it included questions about their beliefs, attitudes, intentions, and behaviors with regard to their interactions with their children. These included talk with their children about drugs, parental monitoring of children's lives, and involvement in activities with their children.

Ad exposure was measured in NSPY for both youth and parents by playing TV and radio advertisements for respondents on laptop computers to aid their recall. The NSPY questionnaires and procedures were designed to mesh well with the nature of the Media

Campaign. Production of commercials is frequently finished only days before they go on the air and the commercials change often. Every 2 months, a CD-ROM of new ads is distributed to the interviewers. Also, a new schedule of planned air dates is distributed by email every month. At the time of interview, the computer calculates which ads were scheduled to be on the air during any part of the 2 calendar months preceding the month of interview. A sample of these ads was then shown to the respondent. When the data were processed, data about an ad were kept only if the final air dates included at least 1 day in the 60 days leading up to the date of interview. Thus, everyone in the sample was measured with respect to advertising that was current at the time of their interview.

The Media Campaign included ads aimed at youth and ads aimed at parents. In NSPY, youth were only shown youth-targeted ads and parents were only shown parent-targeted ads. Every youth and parent was also shown a TV “ringer ad,” an ad that had an anti-drug message but for various reasons had never been aired on TV. These ringer ads were included as a tool for assessing the quality of ad recall by respondents. In addition, there were some unaided questions about recall of ads seen or heard on TV and radio, and in other media such as newspaper, magazines, and billboards.

NSPY Estimates of Youth Drug Use and Other Behavior

Following the goals of the Media Campaign given earlier, NSPY was specifically designed to assess the particular influence of the Media Campaign on trial (i.e., using at least once in a lifetime) and regular use (i.e., using at least 10 or more times in a year) of marijuana and inhalants. NSPY includes questions about drug use primarily so that the correlations of cognitive variables with actual usage can be studied. It was also designed to measure linkages in a theoretical model for Media Campaign action: linkages between ad exposure and attitudes, between attitudes and intentions, and between intentions and actions (drug use).

Because they have larger samples and long trend lines, two other surveys sponsored by the federal government – the National Household Survey on Drug Abuse (NHSDA) and Monitoring the Future (MTF) study – provide better measurements of change in drug use behaviors. Nonetheless, it is interesting to compare NSPY estimates with those of other surveys. Some comparisons are made in Chapter 6 of this report, but they are difficult to interpret because of confounding with time. Estimates for early 2000 will not be available from the other surveys until late 2000 and mid-2001. In general, NSPY estimates for early 2000, displayed in Table ES-A, tend to be comparable to the most recent (1999) NHSDA marijuana estimates and lower than the estimates from the most recent (1999) MTF study. This may be because NHSDA and NSPY are both household surveys whereas MTF is a school-based study. The set of youth who participate in household surveys is somewhat different than the corresponding set for school-based studies, and youth may feel different constraints or pressures on their reporting in the different environments.

The available data from the 1999 MTF study suggest that marijuana use has been stable since 1998. However, those data were collected in the spring of 1999; it is too early to have expected to see any effects of the Phase III Media Campaign.

The estimates from NSPY for both marijuana and inhalant use among youth in early 2000 are presented in Table ES-A. Consistent with findings from other surveys, usage increases with age and marijuana is much more popular than inhalants. Regular use of inhalants is a rare behavior.

Table ES-A
Use of marijuana and inhalants (percentages) in early 2000

Age group	Marijuana use			Inhalant use		
	Ever	Past year	Past month	Ever	Past year	Past month
9-11	1.0	0.8	0.4	1.0	0.4	0.1
12-13	5.1	3.3	1.8	1.9	1.1	0.4
14-15	16.8	11.2	3.1	5.3	2.4	0.5
16-18	40.0	29.0	13.3	8.8	3.1	1.0

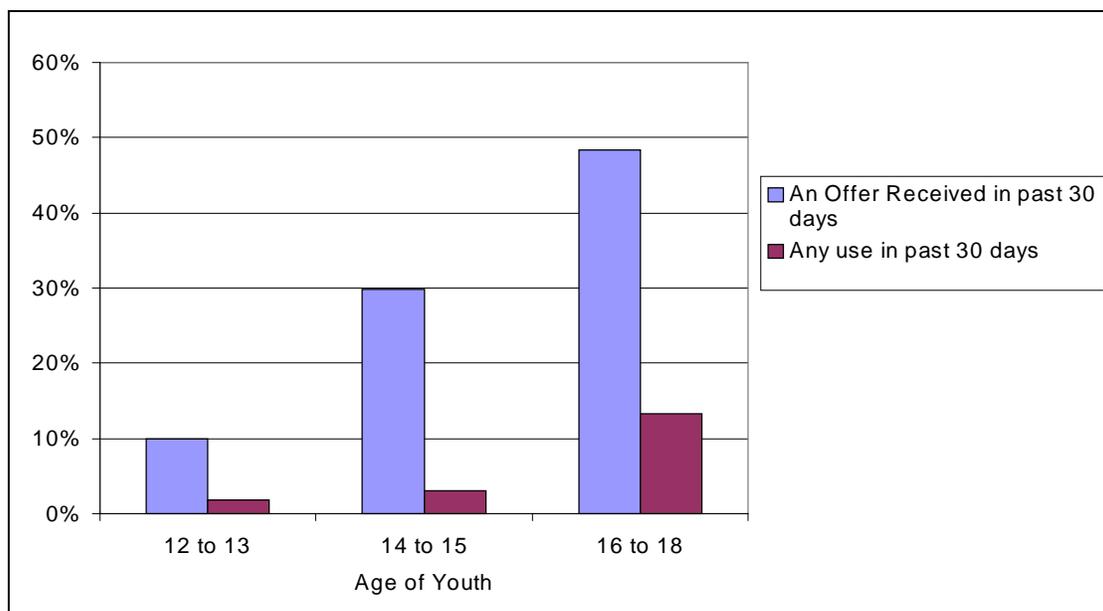
Since parents are also interviewed in NSPY, it is possible to contrast parent knowledge of drug usage by the youth with what the youth reports. As shown in Table ES-B, fewer parents report drug use by their children in the last year than youth do themselves. However, the gap is not very wide until the youth are 16 to 18. The gaps for inhalants (not shown) are much narrower.

Table ES-B
Percentages of parents and youth reporting past year usage of marijuana

Report	Age of youth			
	9-11	12-13	14-15	16-18
Parent: My child has used marijuana in last 12 months.	0.2	2.9	9.0	19.5
Youth: I have used marijuana in last 12 months.	0.8	3.3	11.2	29.0
Gap	-0.6	-0.4	-2.2	-9.5

Youth receive many offers of marijuana, but they claim they rarely accept. Almost 50 percent of youth aged 16 to 18 have received a marijuana offer in the past 30 days. In contrast, just 13 percent of youth aged 16 to 18 report having smoked marijuana in the past 30 days. See Figure ES-A.

Figure ES-A
Offers and use of marijuana by age



Youth Beliefs and Attitudes About Marijuana Use

Analyses presented here separate non-users from occasional users and deal separately with ideas about trial and regular use. Non-users are defined to be youth who have never tried marijuana. Occasional users are those who have used marijuana 1 to 9 times in the past 12 months. There are also regular users (10 or more uses in last 12 months) and former users (lifetime trial but no usage in last 12 months), but these groups are too small for separate reporting.

Among 9- to 11-year-old non-users, beliefs were strongly negative toward trial use of marijuana. On a 1- to 7-point attitude scale, where 7 indicates a strongly negative attitude, their mean response was 6.8. However, they are not convinced about the gateway hypothesis that marijuana usage leads to or causes its users to progress to harder drugs. Only 18 percent strongly believe that marijuana trial would make them go on to use harder drugs.

Older non-using teens also generally expressed negative attitudes and beliefs about trial marijuana use, but they were less consistent than the 9- to 11-year-olds. While their mean attitude was strongly negative (6.6), and almost all of them were definitely not intending to even try marijuana in the next year (92% of 12-13 year olds and 83% of 14-18 year old non-users), the older they were the less likely they were to see all aspects of marijuana trial as completely negative.

Perception of use by friends and peers increases sharply with age. Among youth aged 14 to 18, 69 percent (vs. 94% of 12- to 13-year-olds) believe that none or a few of their friends have tried marijuana and just 29 percent (vs. 75% of 12- to 13-year-olds) believe that none

or a few of “other kids in their grade in school” have tried marijuana. The majority believe that more than a few of their peers have tried marijuana.

Almost all non-using youth agreed that their parents would strongly disapprove of their own (the youth’s) marijuana trial. Only 7 percent thought otherwise. There was no significant pattern in this belief by the age of the youth.

With respect to getting in trouble with the law, 45 percent of non-using youth aged 12 to 13 viewed this as a very likely outcome of trial use. The corresponding percentage was just 32 percent for non-using youth aged 14 to 18.

With respect to being like the coolest kids, 63 percent of non-using youth aged 12 to 18 viewed this as a very **unlikely** outcome of trial use.

With respect to friends approval of marijuana trial, 77 percent of non-using youth aged 9-11 expect strong disapproval from their friends if they were themselves to try marijuana. This figure does decline with age. Among non-users aged 12 to 13, the percentage is 69, and among non-users aged 14-18, it falls to 54 percent.

Beliefs about consequences of regular marijuana usage (i.e., monthly or more frequent use) among non-users are generally more strongly anti-drug than their attitudes toward trial use. Ninety-eight percent of non-using 12- to 13-year-olds, and 95 percent of non-using 14- to 18-year-olds say “definitely not” when asked about their likelihood of using marijuana regularly in the next year. A majority of non-using youth aged 12 to 18 believe it very likely that regular use would lead them to damage their brains, “mess up” their lives, and do worse in school. Also, a majority of non-using youth aged 12 to 18 believe that regular use would be very **unlikely** to make them more creative and imaginative. However, regular marijuana use is not strongly disassociated from good times. Just 35 percent of youth aged 14 to 18 believe that marijuana use would be very unlikely to help them have a good time with their friends.

Not surprisingly, current occasional users of marijuana held sharply less critical views of the consequences of regular use. Nonetheless, around 55 percent of the 14- to 18-year-old occasional users said they were definitely not intending to start regular usage.

Parental Behaviors: Talk about Drugs, Monitoring, and Family Activities

Parents report that they already often engage in the behaviors that are the primary targets for the parent segment of the Media Campaign. However, they report much higher levels of these behaviors than do the independent reports of their children.

Parents say they are talking with their children about drugs. About 91 percent report having talked with their 9- to 18-year-old child at least once in the previous 6 months about drugs, and 77 percent report having talked at least twice. Children report fewer conversations overall. The gap increases with age as shown in Table ES-C. Among teens aged 16-18, just 48 percent report 2 or more conversations with their parents about drugs.

Table ES-C
Parent-child reports of conversation about drugs:
Percent who had two or more conversations in the past 6 months

Report	Age of youth			
	9-11	12-13	14-15	16-18
Parent	71.3	80.2	81.9	78.2
Child	62.7	59.2	58.6	48.4
Gap	8.6	21.0	23.3	29.8

Strikingly, more than 90 percent of the parents report talking with their 16- to 18-year-old children about the anti-drug ads (Table ES-D). However, only 21 percent of the children recalled a conversation about anti-drug ads.

Table ES-D
Parent-child reports of conversations about anti-drug ads:
Percent reporting at least one conversation in recent months

Report	Age of youth			
	9-11	12-13	14-15	16-18
Parent	50.5	63.3	93.3	92.8
Child	49.6	40.1	31.0	21.1
Gap	0.9	23.2	62.3	71.7

Parents say they are doing a good deal of monitoring of their children's lives. Children often disagree with this assessment, but the two reports grow closer together as children age, as shown in Table ES-E. The gap narrows because parents report less monitoring as their children grow older.

Table ES-E
Percentages of parents and youth reports of monitoring

Report	Age of youth			
	9-11	12-13	14-15	16-18
Parent: I always or almost always know what my child is doing when away from home.	78.2	66.4	61.4	49.1
Youth: My parents always or almost always know what you are doing when I am away from home.	49.5	52.7	48.0	40.8
Gap	28.7	13.7	13.4	8.3

Almost all parents report they engage in fun activities with their children. Nearly all parents of 9- to 18-year-olds (90.5%) claimed to have done some home (81.7%) and/or out-of-home fun activity (76.4%) with their child in the past week. There are no parallel youth data for comparisons.

Parent Beliefs, Attitudes, and Intentions

In addition to asking parents about past conversations with their children about drugs, the NSPY questionnaire includes questions about intentions for future conversations, attitudes about conversation, perceived social expectations for them to have such conversations, and feelings of self-efficacy to have such conversations. Similarly, in addition to questions about past monitoring of their children, there are questions about intentions for future monitoring, attitudes about monitoring, and likely consequences of future monitoring.

The majority of parents expressed strong intentions to talk about drugs with their child as well as to monitor their children. This is consistent with their behaviors. There may be some room for movement on some specific types of monitoring behaviors or for talk about specific topics. These question arrays will be most interesting to analyze in association with exposure levels to advertising as will be done in the next report.

However, one interesting early finding shown in Table ES-F is that parents were not strongly convinced that their monitoring would affect their children’s likelihood of using drugs. Only 52 percent of parents of 12- to 13-year-olds strongly agreed that monitoring would “make it less likely my child will use any drug nearly every month.” Moreover, they perceived obstacles and unpleasantness. Eighty-four percent of parents of youth aged 14 to 18 expressed at least some concern that their children would view close monitoring of the child’s daily activities as an invasion of privacy. Even among parents of children aged 9 to 11, only 25 percent strongly dismissed privacy concerns.

Table ES-F
Parental beliefs of consequences of monitoring

Parental belief about closely monitoring their child’s daily activities over the next 6 months:	Age of youth			
	9-11	12-13	14-15	16-18
I strongly agree that this would make it less likely that he/she will use any drug nearly every month	NA	51.8	44.7	39.1
I strongly disagree that this would make him/her feel like I am invading his/her privacy	24.6	18.0	16.9	14.7

Note: NA – This question not asked of parents of 9- to 11-year-olds.

Youth at Risk: Youth Intentions and Parental Concerns

Most parents think their children will not use drugs in the future as shown in Table ES-G. Among parents of 12- to 13-year-olds, 86 percent were adamant that their children would not use marijuana at all in the next year; that proportion declined to 70 percent among parents of 16- to 18-year-olds. Youth agree with this assessment at ages 12 through 15, but youth 16 to 18 are less certain that they will avoid all marijuana usage.

Table ES-G
Percentages of parents and youth reporting about any use of marijuana by the youth in the next year

Report	Age of youth			
	9-11	12-13	14-15	16-18
Parent: It is very unlikely that my child will use marijuana even once or twice over the next 12 months.	NA	86.4	75.3	69.8
Youth: I definitely will not use marijuana (or hashish), even once or twice, over the next 12 months.	NA	87.5	75.3	59.2
Gap	NA	-1.1	0.0	10.6

Parents and youth were in better agreement about *regular* usage of marijuana than about *any* usage, as shown in Table ES-H. Interestingly, parents of youth aged 12 to 15 are a little less confident that their children will avoid regular marijuana usage than are the youth themselves. Parents tend to discount the possibility of any usage more strongly than do youth, but youth discount the possibility of regular usage more strongly.

Table ES-H
Percentages of parents and youth reporting about regular use of marijuana by the youth in the next year

Report	Age of youth			
	9-11	12-13	14-15	16-18
Parent: It is very unlikely that my child will use marijuana nearly every month for the next 12 months.	95.0	90.7	83.4	76.1
Youth: I definitely will not use marijuana nearly every month for the next 12 months.	NA	94.4	89.6	76.2
Gap	NA	-3.7	-6.2	-0.1

Media Purchases and Evidence about Exposure

Across its multiple media outlets, the Media Campaign reports that it purchased enough advertising time to achieve an expected exposure to 2.3 youth-targeted ads per week for the average youth and to 2.7 parent-targeted ads per week for the average parent over the 39-week period covered by this report (September 1999 through May 2000). Each group may have been exposed to ads targeted to the other group, as well. These statistics do not include “spill,” which is defined to be youth viewing of ads targeted at parents or parent viewing of ads targeted at youth.

For adults, the primary media buys, as reported by Ogilvy, the media buyer for the Media Campaign, were in outdoor media (39%) network radio (28%), network television (20%), magazines (8%), and newspapers (5%), where the percentages refer to the percent of exposures that are projected to occur through each channel. For youth, the primary media

buys, as reported by Ogilvy, were on network television (24%) and network radio (22%) with the rest on in-school television (16%), spot buys of radio (8%) and television (11%) and in magazines (10%). About half of the media buys for adults were on channels with the potential to reach most of the population. About two-thirds of the buys for youth were on channels with the potential to reach most of the population.

Recalled exposure results from NSPY:

- Using general exposure measures, and summing across all media, 90 percent of parents and 93 percent of youth recalled exposure to one or more ads each month.
- Sixty-eight percent of parents and 70 percent of youth recalled exposure to one or more ads each week.
- The median recall by parents was 10 ads per month (i.e., at least half of parents saw 10 or more per month and at least half saw 10 or fewer). The median recall by youth was around 11 ads per month.

A second measure of exposure asked for recall of television and radio ads that were played for the respondent:

- The median aided recall of specific TV ads by youth was 4 exposures in recent months. This is roughly equivalent to 0.5 exposures per week. Thirty-five percent reported weekly television ad exposure or more. Eighteen percent recalled none of the TV ads. Exposure of youth was thus fairly uneven.
- The median aided recall of specific TV ads by parents was 3 exposures in recent months. This is roughly equivalent to 0.35 exposures per week. Twenty-five percent reported exposure once per week or more. One-third of the parents recalled none of the TV ads. Exposure of parents to TV advertising was thus lighter than for youth and very uneven.
- The median aided recall of specific radio ads by parents was 0 exposures in recent months. Ten percent reported exposure once per week or more. Fifty-two percent of the parents recalled none of the radio ads. Exposure of parents to radio ads was thus minimal. The majority of parents either never heard the radio ads or heard them only rarely. Youth radio advertising largely consisted of the soundtracks of television ads and this did not permit an independent estimate of exposure to radio-specific advertising.
- The NSPY measures of aided recall for specific ads correlate well with the Ogilvy data based on purchasing patterns and general media consumption. Ads that should have higher viewership levels based on Ogilvy data usually have higher NSPY exposure estimates. Also, the recall of real ads by youth was much higher than the recall of the “ringer” ads.

Respondent Reactions to Ads

- Both parents and youth gave moderately favorable evaluations of the ads they recalled (around 1.0 on a scale from -2 to +2) with respect to power to attract attention, power to convince, and having content that was personally important.
- Neither parents nor youth felt that the ads exaggerate the problem. Strikingly, even occasional users of marijuana aged 14 to 18 tended to disagree with the statement that the ads “exaggerate the problem.”

The Internet

The data confirm that Internet use is very high among 12- to 18-year-olds and even among parents. But this does not translate into exposure to anti-drug information.

- Visits among youth to sites where anti-drug information is to be found is still quite uncommon; 10 percent or less of youth have visited such sites even once in the past 6 months.
- Visits to sites with pro-drug information are less common than to sites with anti-drug information among 12- to 13-year-olds.
- Parents use the Internet less than their children and recall visits to anti-drug sites and to parenting-skill sites with less frequency than their children visited anti-drug sites.

Exposures to Other Drug Messages

Both youth and parent audiences receive messages about drugs from other sources besides Media Campaign paid advertising.

Most youth report receiving anti-drug education in school during the past year and in previous years. More than three-quarters of all youth report in-school drug education by the time they are 18, with 60 to 76 percent of all children 12 and older saying they attended such a program within the past year.

However, many fewer youth report that their involvement with extracurricular activities has led to anti-drug education. Only 12 percent have ever participated in anti-drug programs or discussions outside of school, and only 8 percent have participated in such programs within the past year.

Youth see and hear a good deal about drug use among young people in the mass media. More than half of all youth noticed media coverage about drug use among young people at least once a week.

Most older youth have conversations about drugs, and many of them have such conversations frequently. More than half of youth aged 12 to 18 report having such conversations with parents or friends four or more times in the previous 6 months. The

partners for such conversations shift sharply as youth mature with parents replaced by friends. Among 9- to 11-year-olds, 35 percent had four or more conversations with parents, but only 15 percent had four or more conversations with friends. Among 16- to 18-year-olds these numbers are reversed: 22 percent had four or more conversations with parents, but 46 percent had that many conversations with friends.

In the course of conversation about drug use, young people of all ages discuss negative things about drugs. But, many older youth also speak positively about drugs. For 12- to 13-year-olds, conversations with the theme “marijuana use isn’t so bad” occurred for only 10 percent of the respondents, at about one-fifth the rate as conversations about “bad things that happen if you use drugs.” Among 16- to 18-year-olds the pro-marijuana conversations are reported by 32 percent of the respondents, about three-fifths as often as discussions of the bad things that can happen if you use drugs.

Parents report high basic awareness of anti-drug activities taking place in their communities. For example, more than 80 percent know at least a little about anti-drug programs in schools or community centers. Parents, like their children, often see drug themes presented in the media. More than 90 percent of parents report at least monthly exposure and 65 percent report weekly exposure to at least one media source dealing with the issues of youth and drugs.

Fewer than half of parents report having attended drug prevention or parent effectiveness programs. Twenty-six percent reported attendance at a drug abuse prevention activity in the previous 6 months. About the same number (29%) said they attended a parent effectiveness program in the previous year.

Key Findings and Future Reports

This first semi-annual report from NSPY describes the Media Campaign, provides some measures of exposure to Campaign advertising over the first 9 months of Phase III, and has set a baseline for cognitive parent and youth attributes and for parent and youth behavior.

Most youth express negative attitudes and negative beliefs about the consequences of marijuana use, both with regard to trial use, and more strongly about regular use. Older youth tend to have less consistently negative attitudes. Youth tend to disbelieve the gateway theory that marijuana usage will lead to usage of harder drugs. Parents say that they talk about drug use with and that they monitor their children. They are not altogether convinced that monitoring protects against drug use. Parents report more frequent conversations and monitoring behavior than do their children. New estimates of youth usage of marijuana and inhalants have been presented. Regular inhalant usage is rare. The marijuana estimates are generally consistent with estimates from NHSDA.

Most parents and youth have seen at least some of the ads, with one estimate suggesting both audiences are exposed to 2 or 3 ads per week across all media. Another approach puts the estimate for television advertising alone per week at 0.5 exposures for youth and 0.3 for parents. Some parents and youth have seen the ads much more often than other parents and youth. The parent radio Media Campaign has low awareness. Initial respondent reactions to

the TV ads are generally favorable. Few youth or parents report exposure to anti-drug web sites on the Internet.

No inferences about the effectiveness of the Media Campaign have been drawn in this report. Given that Phase III of the Media Campaign was only 9 months old by the end of Wave 1 data collection for NSPY, such inferences would be premature. Also, the most telling measurements have not yet been made. There will be a series of six more semi-annual reports over the next few years, culminating in a final report in March 2004.

Some of the topics for future reports include the following:

- Continued examination of population exposure to the components of the Media Campaign. Additional analyses of the exposure of African American and Hispanic population exposure to advertising;
- Change in population averages for outcomes, as well as changes for subgroups of the population at particular risk for marijuana use;
- The contemporaneous association of exposure with outcomes, while controlling for the confounding effects of pre-existing conditions;
- Contemporaneous association of outcomes with exposure to subcomponents of the Media Campaign while controlling for the confounding effects of pre-existing conditions;
- Patterns of growth and change in outcomes at the individual level and the prospective association of both initial and cumulative exposure with subsequent growth and change;
- Evidence that patterns of contemporaneous or prospective associations between exposure and outcomes differ among important subgroups of the population; and
- Indirect effects of the Media Campaign on youth through parents, friends, and institutions.

1. INTRODUCTION

This is the first in a series of semi-annual reports from the National Survey of Parents and Youth (NSPY), a new survey designed to evaluate the National Youth Anti-Drug Media Campaign. The National Youth Anti-Drug Media Campaign (the Media Campaign) is part of an effort by the Office of National Drug Control Policy (ONDCP) to “educate and enable America’s youth to reject illegal drugs as well as alcohol and tobacco” by means of an advertising and public communications program about the dangers of drugs, alcohol, and tobacco use. Other important Media Campaign goals are to convince occasional users of drugs to stop using them, to enhance adult perceptions of harm associated with use of marijuana and inhalants, and to emphasize to parents and influential adults that their actions can make a critical difference in preventing youth drug use.

In this introductory chapter, there is a review of the nature of the Media Campaign, the paid advertising component of it, other components of it, the administrative structure of the evaluation, and the structure of this report. This first report is mostly descriptive, discussing the media exposure achieved by the Media Campaign and baseline behaviors, beliefs, attitudes, and intentions of both parents and youth. Later reports in the series will have a stronger evaluative content.

1.1 NATURE OF THE MEDIA CAMPAIGN IN PHASE III

The Media Campaign is now in Phase III. Phase I of the Media Campaign involved pilot testing the intervention in 12 metropolitan areas, using existing Partnership for a Drug-Free America (PDFA) advertisements. During Phase I, ads were placed on television and radio, in newspapers, and on billboards. In Phase II, these advertisements appeared nationwide, not just in the test areas. New advertisements were added to the Media Campaign. The advertisements appeared not only on television, radio, billboards, and in newspapers but also on cable television, Channel One (educational television for schools), in movie theatres, on the Internet, and on schoolbook covers.

Phase I January 1998- June 1998	Phase II July 1998- July 1999	Phase III September 1999- Continuing
<ul style="list-style-type: none"> ■ Pilot test in 12 metropolitan areas, with 12 sites selected for comparison ■ Previously produced ads ■ Paid and donated advertising (pro-bono ad matching required) 	<ul style="list-style-type: none"> ■ National level intervention ■ Previously produced and new ads ■ Paid and donated advertising on a full range on media (pro-bono ad matching required) 	<ul style="list-style-type: none"> ■ National level intervention ■ New ads ■ Paid and donated advertising on a full range of media ■ Partnerships with media, entertainment and sports industries, and civic professional and community groups

Phase III marks the full implementation of the Media Campaign. As in the past, an extensive range of media is used to disseminate Media Campaign messages to a national audience of

youth and parents; in addition, Phase III features a significant interactive media component, involving content-based web sites and Internet advertising. Most of the ads used in Phase III are new, although some existing ads that were considered effective in the past have been also used. New ads are developed and disseminated according to the ONDCP Communication Strategy, a strategy that was developed over the course of a year with the help of hundreds of individuals and organizations with expertise in teen marketing, advertising and communication, behavior change, and drug prevention.

The development of the ads follows a complex process involving four major organizations. The primary supervisor for the production of most of the ads has been the PDFA, which has historically led anti-drug advertising efforts. However, since the ONDCP uses Federal funds to finance some production costs as well purchase media time, it has instituted a multifaceted review process for defining broad behavior change strategies and for developing and approving specific ads. Behavior change expertise comes from a continuing panel of experts who are responsible for designing behavioral briefs that provide a framework for creative development, specifying objectives and message strategies for each priority audience. The panel reviews strategies and proposed advertisement executions at bimonthly meetings. Overall responsibility for media buying, for some supportive research, and for assuring a coherent advertising strategy, as well as for day-to-day management of the Media Campaign lies with Ogilvy, a national advertising agency. Finally, all of these agencies work closely with ONDCP itself, which provides final approval for all major decisions and for all advertising that is broadcast.

Phase III of the Media Campaign is “an integrated social marketing and public health communications campaign.” Thus, it attempts to reach the target audience indirectly, as well as directly through advertising. A critical component of the Media Campaign in Phase III involves partnerships with the media, entertainment and sports industries, and with civic, professional, and community groups. Through these organizations, the Media Campaign intends to strengthen local anti-drug efforts, reinforce desirable portrayals of the effects of drug use in entertainment programming, and provide drug-free role models for young people. The goal of the non-advertising component of the campaign is to influence the “entire message and image environment” regarding drug use. (National Youth Anti-Drug Media Campaign Fact Sheet, “How the Campaign is Different.” March 2000.)

It is expected that any youth may receive anti-drug messages from each of the following sources:

- Exposure to Media Campaign messages
- Interaction with friends and other peers
- Interaction with parents
- Involvement with organizations

Exposure to Media Campaign messages will occur as a result of direct advertising. The possibility of exposure to anti-drug messages through involvement with an organization will be enhanced by the partnerships fostered in Phase III of the Media Campaign. Exposure to anti-drug messages through interactions with friends, peers, or parents may occur as a direct

result of either or both of these Media Campaign efforts. Although it is difficult to measure, exposure may also occur indirectly, as a result of a social environment in which prevention of drug abuse is a salient issue; the Media Campaign may contribute to this environment.

The following two sections outline some of the projected activities of the Media Campaign in Phase III. These accomplishments will provide a sense of the magnitude of Media Campaign efforts to prevent or reduce drug use through various channels.

1.2 PAID AND DONATED ADVERTISING

The Media Campaign had budgets of \$195 million and \$185 million in FY 1998 and 1999 respectively. The FY 2000 budget is \$185 million. Of that approximately \$145 million was to be spent on the purchase of advertising time. Congress mandated that media organizations that accept Media Campaign advertising must match Media Campaign purchases with public service messages of equal value. The Media Campaign has reported that it exceeded the original goal of one-for-one funding: from January 1998 through June 2000 the total value of the pro-bono match was reported to be \$334 million. (National Youth Anti-Drug Media Campaign Fact Sheet, “Pro-bono Match,” March 2000.)

Ogilvy was selected to coordinate the purchase of Media Campaign advertising; in turn, it developed partnerships with five agencies that specialize in communicating with minority audiences. Of special concern was that African Americans, Asian Americans, Pacific Islanders, Hispanic Americans, Puerto Ricans, American Indians, Alaskan Natives, Aleuts, and urban youth be sufficiently exposed to Media Campaign messages.

In Chapter 3 we present the Phase III media buying strategies for youth and adults in detail, including how much paid advertising was directed through each channel. The target audience was reached nationally through television networks ABC, CBS, NBC, FOX, UPN, and Warner Brothers’ Network, through cable networks, and through national radio networks. Additional advertising was purchased in 102 television and 106 radio “spot” markets representing about 86 percent of the population. Online advertising was placed on 37 web sites and America Online. Additionally, the Media Campaign has paid for advertising banners to appear on commercial web sites, such as online music retailer CDNOW. CDNOW encloses drug-prevention information with CD shipments. Media Campaign advertisements have appeared in schools through Channel One; through Scholastic, Weekly Reader, and React Magazine; through free book covers; and online, through education portal sites Searchopolis.com and Bess.com. Media Campaign messages are also disseminated through radio, in newspapers and magazines, on home video, and in movie theatres. Parents are addressed through billboards, bus shelter placards, and other outdoor advertising.

The advertising component of the Media Campaign was expected to reach 90 percent of America’s youth at least four times per week during the course of the Media Campaign, including youth viewership of advertising directed at their parents. (ONDCP Fact Sheet, “Summary of Campaign Accomplishments,” March 2000.) More than three quarters of the total multicultural advertising budget of \$34 million (National Youth Anti-Drug Media Campaign Fact Sheet, “Multicultural Outreach,” March 2000) was planned to reach African

American and Hispanic youth, and as a result, young people from these groups were to be reached more frequently than the general population.

The target audiences of the Media Campaign are youth aged 9 to 18 and their parents. The primary focus of messages for youth is for “tweens” or youth aged 12-13. Also, the Media Campaign is designing advertising for sensation-seeking youth, who have been shown in research as more at risk for drug use (Donohew, Lorch, and Palmgreen, 1991).

For both parent audiences and youth audiences, the Media Campaign chose to focus on a limited set of message strategies.

For parents the strategies included the following:

- Your child at risk. Every child is at risk for drugs, even yours.
- Parenting skills and personal efficacy. There are simple skills parents can learn to help their child avoid drugs (e.g., monitoring activities and praising good behavior).
- Perceptions of harm. Be aware of little-known harmful effects of inhalants and marijuana on your child’s life and future.

For youth the strategies included the following:

- Resistance skills and self-efficacy. Building confidence that individuals can avoid drugs.
- Positive social norms. The idea that most other youth don’t use drugs and that not using drugs leads to good consequences.
- Negative consequences. Some negative consequences that can accompany drug use (e.g., loss of parental approval, reduced performance in school and as an athlete).

Starting with Phase III, the Media Campaign has begun to incorporate branding to unify its advertising. This began with the parent campaign, which focused on the idea of The Anti-Drug (e.g., Love: The Anti-Drug; Communication: The Anti-Drug). During the fall of 2000, branding will be extended to the youth campaign, focusing on the related idea: Your Anti-Drug, with advertising making suggestions of possible activities that might serve as “anti-drugs” and allowing audience members to fill in their own (e.g., Soccer: My Anti-Drug). The evaluation will begin its measurement of brand recall with interviews in January 2001.

Among the celebrities who have appeared in the anti-drug advertising during the part of Phase III evaluated here include singers Mary J. Blige, the Dixie Chicks, and Scatman and athletes including tennis stars Venus and Serena Williams, skateboarder Andy MacDonald, and track star Michael Johnson. But celebrities were only one part of the advertising effort. There were more than 60 distinct ads played or scheduled to be played during this period from September 1999 through May 2000, including radio and television, general market and African American and Hispanic-specific ads, and ads for parents as well as youth. Only eight of these ads relied on celebrities to carry the message, although the Mary J. Blige and Williams sisters’ television ads received considerably more airplay than most other ads. A

full set of ad descriptions appears in Appendix D of this report. Most of the ads can be viewed or played by visitors to ONDCP's web site: <http://www.whitehousedrugpolicy.gov>.

1.3 OTHER ACTIVITIES

Although advertising is the cornerstone of the Media Campaign, non-advertising activities are considered critical to Media Campaign success. Public relations contractor Fleishman-Hillard develops and coordinates all non-advertising activities related to the Media Campaign. The Media Campaign is a comprehensive social marketing campaign that seeks to reach the audience directly and indirectly, through both traditional and nontraditional channels. The Media Campaign is designed to strengthen existing anti-drug efforts in communities, to generate talk among youth and parents about drug use, and to increase the salience of drugs as an issue generally. In short, non-advertising Media Campaign activities are designed to foster or enhance an environment in which drug use is noticed, recognized as a problem, and discussed. In such an environment, advertising can be expected to have a greater and more lasting impact.

The Media Campaign has formed partnerships with several national and local organizations already involved with drug prevention: Community Anti-drug Coalitions of America, National Association of State Alcohol and Drug Abuse Directors, Prevention through Service Alliance, National Drug Prevention League, Youth Service America, and the YMCA. In support of the Media Campaign the National YMCA instituted substance abuse training for all staff and began to provide drug prevention resources. The YMCA also included anti-drug messages in their curriculum. Partnerships with these organizations are intended to increase the amount of drug-related information in communities, including information about consequences of drug use and how to resist drugs.

Popular institutions also supported the Media Campaign. Marvel Comics developed a special comic book series called *Fast Lane* that asks young people if they are “getting the real message” about drugs. The series, which features Spider-Man, Captain America, and X-man Wolverine, attacks the idea that most young people are involved with drugs and illustrates consequences of drug use.

Because the entertainment industry produces material that is highly visible, credible, and is often influential, ONDCP enlisted the help of producers, scriptwriters, directors, and creative executives from major broadcast networks to disseminate anti-drug messages. The overarching goal of the partnership with the entertainment industry is to use popular culture to disseminate drug prevention messages; in particular to dispel myths about drug use and to portray consequences of drug use accurately. A variety of popular television programs have incorporated information about drug use.

In Phase III of the Media Campaign, interactive media were utilized as a message source for the first time. The Media Campaign maintains a number of web sites that provide drug-related information and a forum for young people to discuss drug use and consequences of drug use. The following are Media Campaign sites: theantidrug.com (www.theantidrug.com); [Freevibe](http://freevibe.com), (www.freevibe.com); The Freevibe Teachers Guide (www.teachersguide.com); StraightScoop.org (www.straightscoop.org); and Mediacampaign.org (www.mediacampaign.org). In addition, there are two proprietary sites

available to those with America Online. The sites differ in the audience they serve (parents, teachers, youth, teens) and in the type of content they provide (parenting advice, drug information, testimonials about drug involvement), which is intended to result in a wider audience for Media Campaign messages. Traffic is routed to these sites from traditional and online advertising, through links from other web sites, and through Internet search engines. Together, the Media Campaign has reported, these sites have been viewed 10 million times through March 2000. (NYAMC Fact Sheet, "Interactive Program," March 2000.)

1.4 ADMINISTRATIVE STRUCTURE FOR THE EVALUATION

The evaluation is being conducted by Westat and Annenberg under contract to the National Institute on Drug Abuse (NIDA). The funding for the evaluation is provided by ONDCP from the appropriation for the Media Campaign. NIDA prepared a tentative research design based on a meeting with experts in the field, and then contracted with Westat and its subcontractors to fully develop the design and carry out the study. Westat has general responsibility for all aspects of the project, and in particular for supervising all aspects of sample design, data collection, and data preparation. The Annenberg School for Communication at the University of Pennsylvania, one of the subcontractors, has lead responsibility for study design and data analysis. A second subcontractor for the first two years of the project, the National Development and Research Institute, provided expertise in the development of the drug usage questions and assisted in the preparation of the first special report on historical trends in drug use.

1.5 STRUCTURE OF THE REPORT

The report is organized in nine chapters and five appendixes, along with an extensive set of detail tables. There is a companion volume that reproduces the questionnaires used in the study. The companion volume is entitled, "National Survey of Parents and Youth: Questionnaires for Waves 1 and 2."

This chapter and the next provide background for the Media Campaign and the evaluation. Chapter 3 presents the first evidence about the extent to which the primary target audiences for the campaign, youth and their parents, recall Media Campaign messages. Chapters 4 and 5 provide information about exposure to other sources of information about drugs among youth and parents, respectively. Chapters 6 through 9 begin the presentation of results about the outcome variables. For this first round of data collection the presentation is limited to descriptions of the current status of the full set of youth behaviors (Chapter 6), youth attitudes and beliefs (Chapter 7), parental practices from both the youth's and the parent's perspectives (Chapter 8), and parental attitudes and beliefs (Chapter 9).

The five appendixes provide detailed information about sample design weighting, variance estimation and geography (Appendix A), data collection procedures (Appendix B), measurement quality (Appendix C), the ads in the Media Campaign (Appendix D), and information about predictors of youth and parent intentions (Appendix E). The remainder of the report provides a large number of detailed tables supporting and supplementing each of the text chapters. In some cases these tables present results from some additional variables not presented in the text and always provide detailed breakdowns of responses by age,

gender, ethnicity, urbanicity, region, and sensation-seeking score for youth and for parents, child age, parental education, as well as parent gender, ethnicity, urbanicity, and region.

2. SUMMARY OF EVALUATION PLAN

2.1 MODELS FOR MEDIA CAMPAIGN ACTION

2.1.1 Focus and Scope of the Evaluation

The Media Campaign seeks to educate and enable America's youth to reject illegal drugs; prevent youth from initiating use of drugs, especially marijuana and inhalants; and convince occasional users of these and other drugs to stop using drugs. It is the task of the Media Campaign Evaluation to determine how successful the Media Campaign is in achieving these goals and to provide ongoing feedback useful to support decisionmaking for the Media Campaign.

Although there are literally hundreds of questions that the Evaluation can and will answer, four overarching questions form the central focus of the Evaluation: (1) Is the Media Campaign getting its messages to the target populations? (2) Are the desired outcomes going in the right direction? (3) Is the Media Campaign influencing changes in the outcomes? (4) What is learned from the overall Evaluation that can support ongoing decisionmaking for the Media Campaign?

The range of additional questions that will be answered is indicated by the following five major objectives for the Evaluation:

1. To measure changes in drug-related knowledge, attitudes, beliefs, and behavior in youth and their parents;
2. To assess the relationship between changes in drug-related knowledge, attitudes, beliefs, and behavior and their association with self-reported measures of media exposure, including the salience of messages;
3. To assess the association between parents' drug-related knowledge, attitudes, beliefs, and behavior and those of their children;
4. To assess changes in the association between parents' drug-related knowledge, attitudes, beliefs, and behavior and those of their children that may be related to the Media Campaign; and
5. To assess the extent to which community-based drug prevention activities change in response to the Media Campaign and how these changes relate to changes in the other objectives.

The circumstances of the Media Campaign present a serious challenge to evaluation. Because the Media Campaign goal is to reach out to youth all across America to help them avoid drug problems, it is not appropriate to use experimentation to evaluate the Media Campaign. Experimentation would require conducting the Media Campaign in a random sample of media markets. Instead, the Media Campaign will be evaluated by studying natural variation in exposure to the Media Campaign and how this variation appears to correlate with phenomena predicted by the theoretical model for the Media Campaign. This means comparing groups of people with high exposure to other groups with low exposure.

The evaluation has been designed to make it very sensitive to variation in exposure. The primary tool for the evaluation will be a new household survey, the National Survey of Parents and Youth (NSPY).

If groups are indeed found with different levels of exposure to the Media Campaign, it will be necessary to study whether there were any pre-existing differences between the groups that might explain both the variation in exposure and any variation in outcomes. Therefore, NSPY includes many questions on personal and family history, which may support alternative explanations for an observed covariation of exposure and outcomes.

2.1.2 Model of Media Campaign Influence

In developing the overarching Media Campaign model, two foundations are relied on: basic theory about communication and health behavior change, and evidence about what influences drug use. The overarching model of Media Campaign influence can be largely presented in the form of four interrelated figures, each of which describes a component of the overall model in detail. Three of these figures focus on influences on youth drug use. The other outlines influences on parents' actions with regard to their children's drug use. However, these figures cannot portray some complex ideas about how the Media Campaign may produce its effects. For this reason, five routes by which the Media Campaign may have influenced behavior are described in text rather than graphically. These five routes of influence reflect current thinking in public health communication theory and have driven the process of data collection and analysis. The figures are presented first, followed by text descriptions of the five potential routes of campaign influence.

2.1.3 Overview of the Figures

Figure 2-A presents the overall model of effects. It includes the model for Media Campaign influence in broad outline and names the categories of external variables likely to influence the process. All of the Media Campaign activities (advertising, work with partnership organizations, encouragement of parent and peer conversations about drug use) are intended to increase youth exposure to anti-drug messages. The process through which these activities will produce exposures is laid out in Figure 2-B. Those exposures are meant to produce changes in young people's thinking about drugs, their perceptions about what others expect them to do, and their skills to resist drugs. These influence paths are laid out in some detail in Figure 2-C. A youth's changed thinking about drugs is meant to reduce his or her intention to try drugs or to graduate from trial to occasional or regular use of drugs.

Audience Exposure

Figure 2-B portrays the complex and multiple routes through which the Media Campaign will work. The audience may receive anti-drug messages from each of the following four sources.

Figure 2-A
Overall model of Media Campaign influence

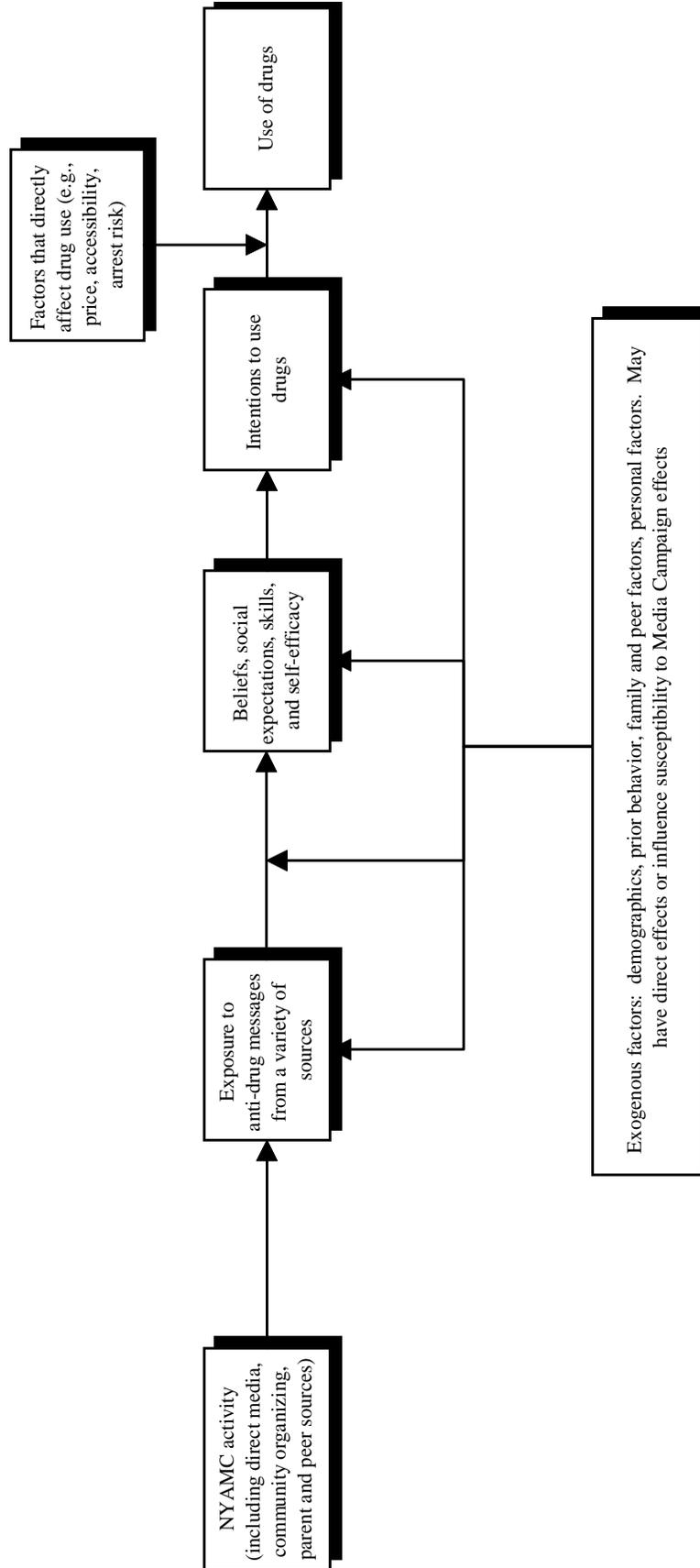


Figure 2-B
Model of influences on exposure to anti-drug messages

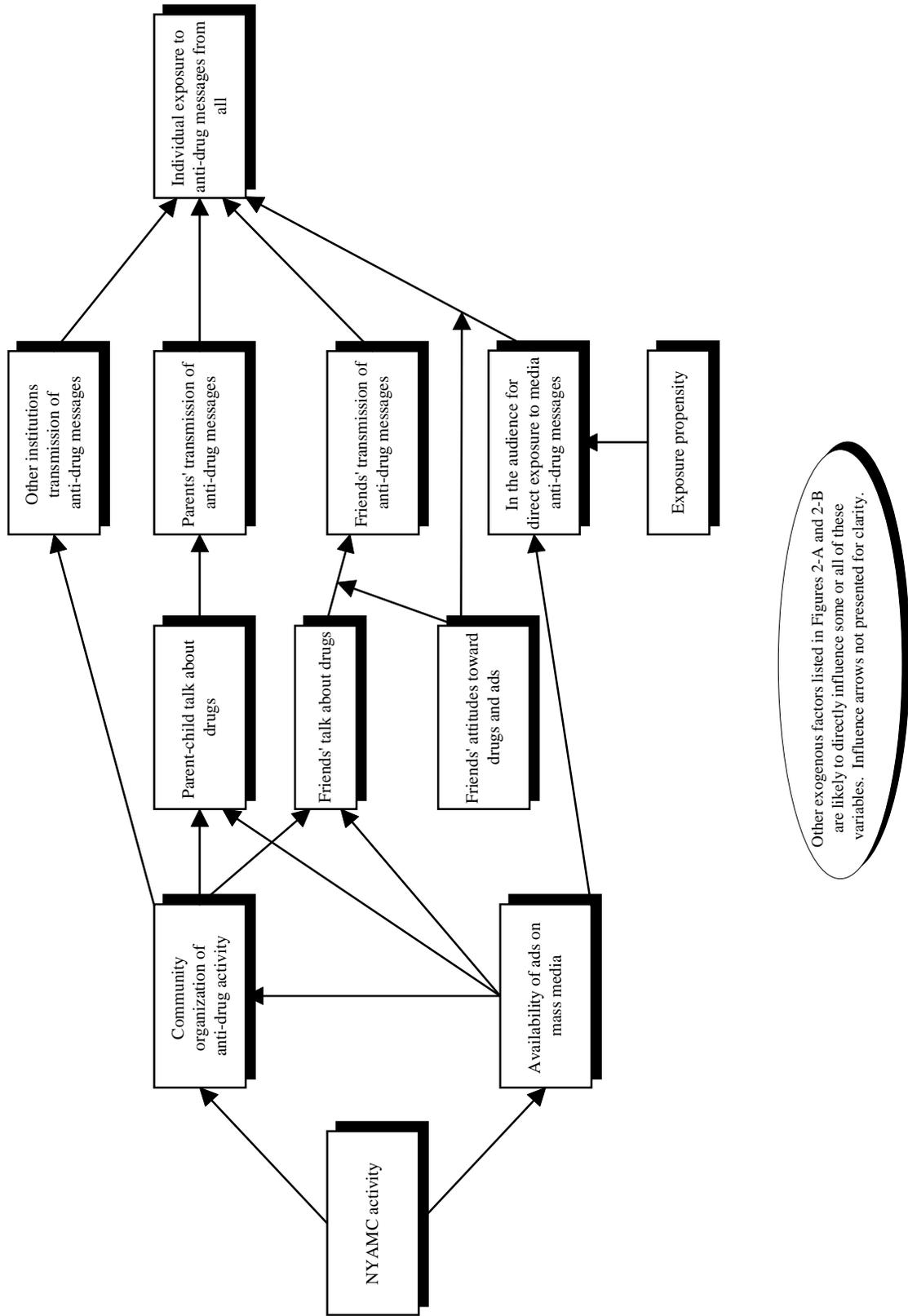
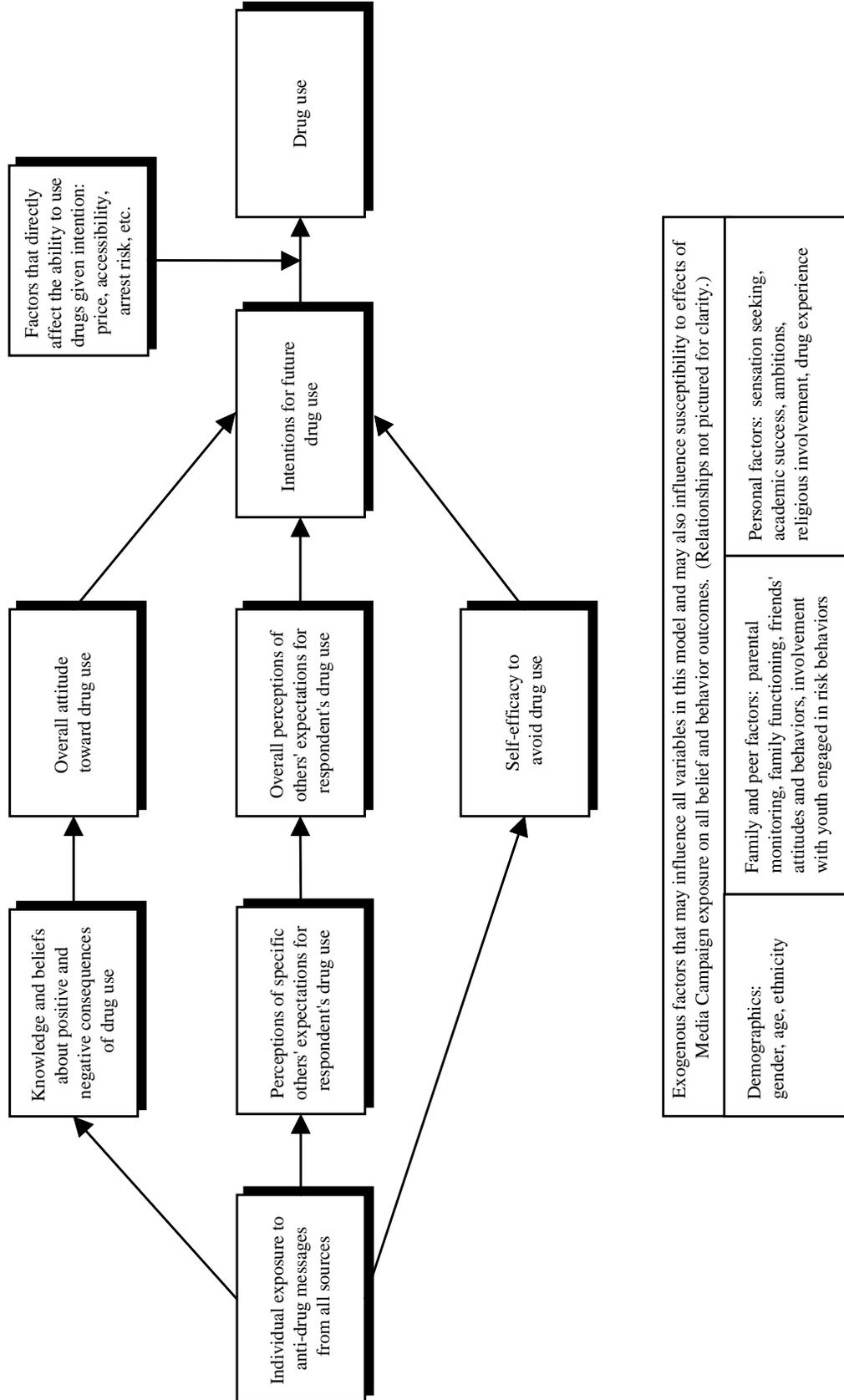


Figure 2-C
Model of influences of exposure to drug outcomes



1. Exposure to media messages. The audience may be directly exposed to Media Campaign advertisements that appear on television, on the radio, on the Internet, and elsewhere. Direct exposure to unplanned anti-drug media messages is also a possibility, if, for example, the news media increase their coverage of the issue as the result of Media Campaign activity. The likelihood of direct exposure to anti-drug messages depends on two factors: first, how often a youth is exposed to a particular communication medium (for instance, how often he/she watches television), and second, the number and nature of advertisements that are placed on that medium in a given time period.
2. Interaction with friends and other peers. Anti-drug messages may be relayed during conversations with friends. These conversations may have been stimulated by the presence of the Media Campaign, whether by advertisements or by activities undertaken by other organizations.

However, although the Media Campaign might increase the number of drug-related messages heard by respondents, through a process of social diffusion, the nature of these messages may not always reflect the intentions of the Media Campaign. The Media Campaign may inadvertently stimulate discussion that rejects anti-drug messages or even reinforces pro-drug messages. The attitudes of friends may have an important influence on the valence of message retransmission. For this reason, friends' attitudes are incorporated into the model in Figure 2-B.

3. Interaction with parents. Anti-drug messages may come from parent-child conversations. One of the Media Campaign's early emphases has been to encourage parents' involvement in their children's lives and, in particular, to encourage conversations about drugs and drug use. If the mass media advertisements are successful, there should be more parent-child talk about drugs and thus a greater transmission of anti-drug messages.
4. Interaction with organizations. Partnership organizations, including general youth organizations (sports teams, scouts, and religious groups) and anti-drug-focused institutions, are expected to increase their active transmission of anti-drug messages. These organizations may reach enrolled youth directly or through parents or peers as intermediaries.

Influence of Exposure on Behavior

Figure 2-C focuses on how exposure to anti-drug messages might influence behavior. The model relies fundamentally on the Theory of Reasoned Action, developed by Martin Fishbein and Icek Ajzen, and is supplemented by the arguments of Albert Bandura concerning the importance of self-efficacy. The model assumes that intention to undertake an action is the primary determinant of behavior, although external forces (e.g., the price of drugs, their availability, and the risk of arrest) may constrain the transition from intention to action. The model assumes that intentions are largely a function of three influences: attitudes toward specific drug behaviors, perceptions of how important others expect one to act, and the belief that one has the skills to take an action (called self-efficacy). Attitude is a function of an individual's beliefs about the expected positive or negative consequences of

performing specific behaviors. Perceived social expectations are a function of an individual's beliefs about what each of a number of important others (parents, friends) expect of them. The model assumes that exposure to anti-drug messages will influence beliefs, and thereby influence attitudes and perceived social expectations. Finally, the model assumes that exposure to messages will directly influence self-efficacy, the individuals' belief in their ability to avoid drug use.

Although Figure 2-C specifies drug use as its outcome, use of that general term should be understood as shorthand. The four distinct behaviors on which the Media Campaign focuses are: (1) trial use of marijuana, (2) trial use of inhalants, (3) transition from trial to occasional or regular use of marijuana, and (4) transition from trial to occasional or regular use of inhalants. Each of these behaviors may be influenced by different factors. For example, fear of parental disapproval may be a particularly important determinant of the trial use of marijuana, whereas a more important determinant of regular marijuana use may be concern about becoming dependent on the drug. For this reason, each behavior and its determinants are measured distinctly.

External Factors

All elements of the Media Campaign's intended process of influence must operate in the context of a series of external factors. These factors are noted in Figure 2-A, and presented in greater detail in Figure 2-C. In estimating the size of Media Campaign effects, such potential confounding influences has been controlled. In addition, in some cases researchers will be able to test whether individuals who vary on these external factors are more or less susceptible to Media Campaign influence.

External factors that will be considered in the evaluation are parental monitoring, family functioning, friends' attitudes and behaviors, academic success, ambition, religious involvement, and prior drug involvement. Because it is argued that sensation seeking is an important determinant, not only of drug use but also of responsiveness to advertising messages of a particular style, sensation seeking will also be measured.

Parent Component of the Media Campaign

The Media Campaign seeks to address three distinct parent behaviors, each of which is modeled separately in Figure 2-D. The parent objectives relate to three parent behaviors, as follows: (1) parent-child talk about drugs, (2) parental monitoring of youth behavior, and (3) support for community anti-drug activity. Given their relative importance in the Media Campaign, the models for the first two behaviors are presented in greater detail. In all models, a box simply labeled "NYAMC activity" represents the Media Campaign, much as it is described in Figure 2-B.

Model A in Figure 2-D describes a limited set of determinants for parental monitoring behavior. NSPY includes measures of past and intended monitoring behavior. Only two of the determinants of intention are measured: attitudes toward monitoring and self-efficacy to engage in monitoring. In turn, and consistent with basic health behavior theory, attitudes are seen as related to beliefs about the consequences of such monitoring. Those consequences

are divided into two parts: drug-related consequences (whether the parent thinks that the degree of monitoring will affect a child's drug use) and other consequences (including expected effects on the relationship between parent and child). A decision to increase monitoring may be seen by a parent as having both positive and negative consequences. Media Campaign activities are presumed to affect both beliefs in the positive consequences of monitoring and the self-efficacy of parents to engage in monitoring behavior.

Model B in Figure 2-D describes a more complete process for the influence of the Media Campaign on parent-child talk about drugs, which is expected to be the parent behavior most emphasized by the Media Campaign. Talk has been separated into two types of conversations: those dealing with drug use in general and those involving talk about specific strategies and skills for avoiding drug use. Although both are targets of the Media Campaign, one may occur independently of the other. Intentions for future talk are seen as the product of attitudes toward talking, self-efficacy to engage in talking, and general social expectations about whether one ought to talk with one's child about drugs. Attitudes are presumed to reflect three types of beliefs: belief that drug use has negative consequences for the reference child, belief that the reference child is at risk for drug use, and belief that parent-child talk is likely to discourage drug use by the reference child. General social expectations are hypothesized to be a function of the specific social expectations of others that the parent talk with the child. Media Campaign activity is presumed to affect all of the beliefs, self-efficacy, and specific social expectations for conversation about drugs.

Model C in Figure 2-D focuses on parents' actions to support community anti-drug activities. Although this outcome behavior is included among Media Campaign outcomes, it has taken a secondary priority to other objectives. Space considerations have meant that none of the process variables that may lead from Media Campaign activity to this behavior will be specifically measured.

Routes of Influence

In this section, five overlapping routes through which the Media Campaign may have influenced behavior are presented. These routes include several factors that are difficult to portray in figures. First, it is possible that there will be time lags between Media Campaign activities and their effects. Second, it is possible that effects are realized through social interactions and institutions instead of (or in addition to) being realized through personal exposure to media messages. Third, it is possible that messages directed toward a specific belief or behavior will generalize to other beliefs or behaviors. The five routes are summarized below.

1. **Immediate learning.** As a direct result of Media Campaign advertisements, youth immediately learn things about particular drugs that lead them to make different decisions about using those drugs. For example, they learn that trying marijuana has bad consequences so they are less likely to try marijuana. This new knowledge could have immediate consequences, which should be apparent in associations between exposure, beliefs, and behavior. In this way, young people may learn: negative and positive consequences of their using a particular drug; social expectations about drug use; and skills and self-efficacy to avoid drug use if they wish.

Figure 2-D Model A
Effects of parental monitoring

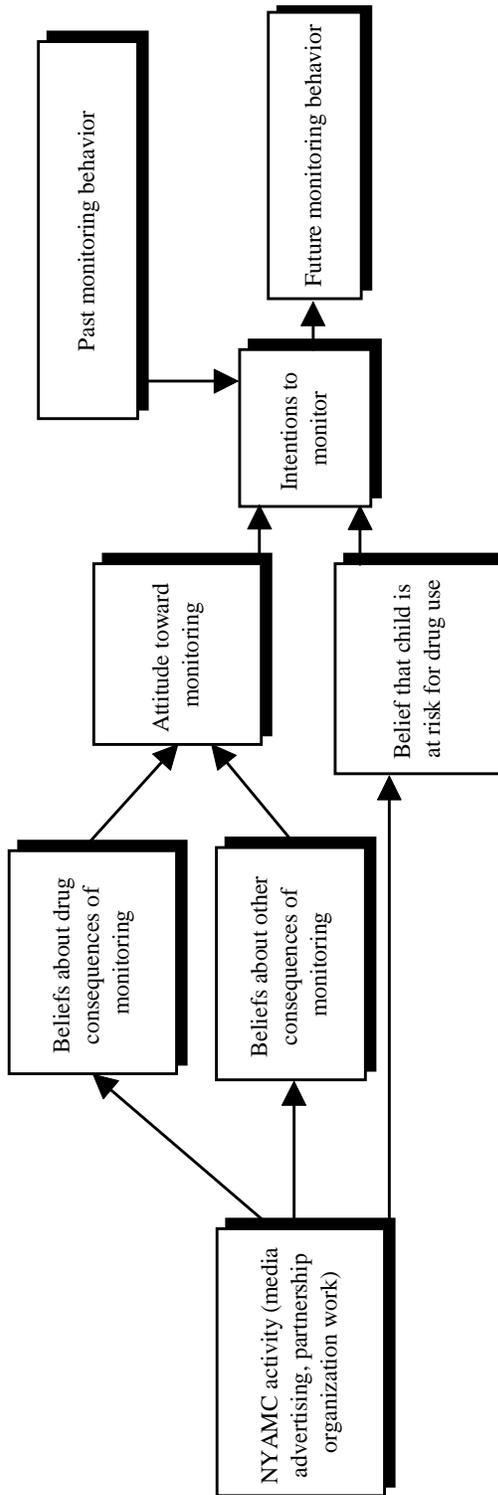


Figure 2-D Model B
Effects on parent-child talk

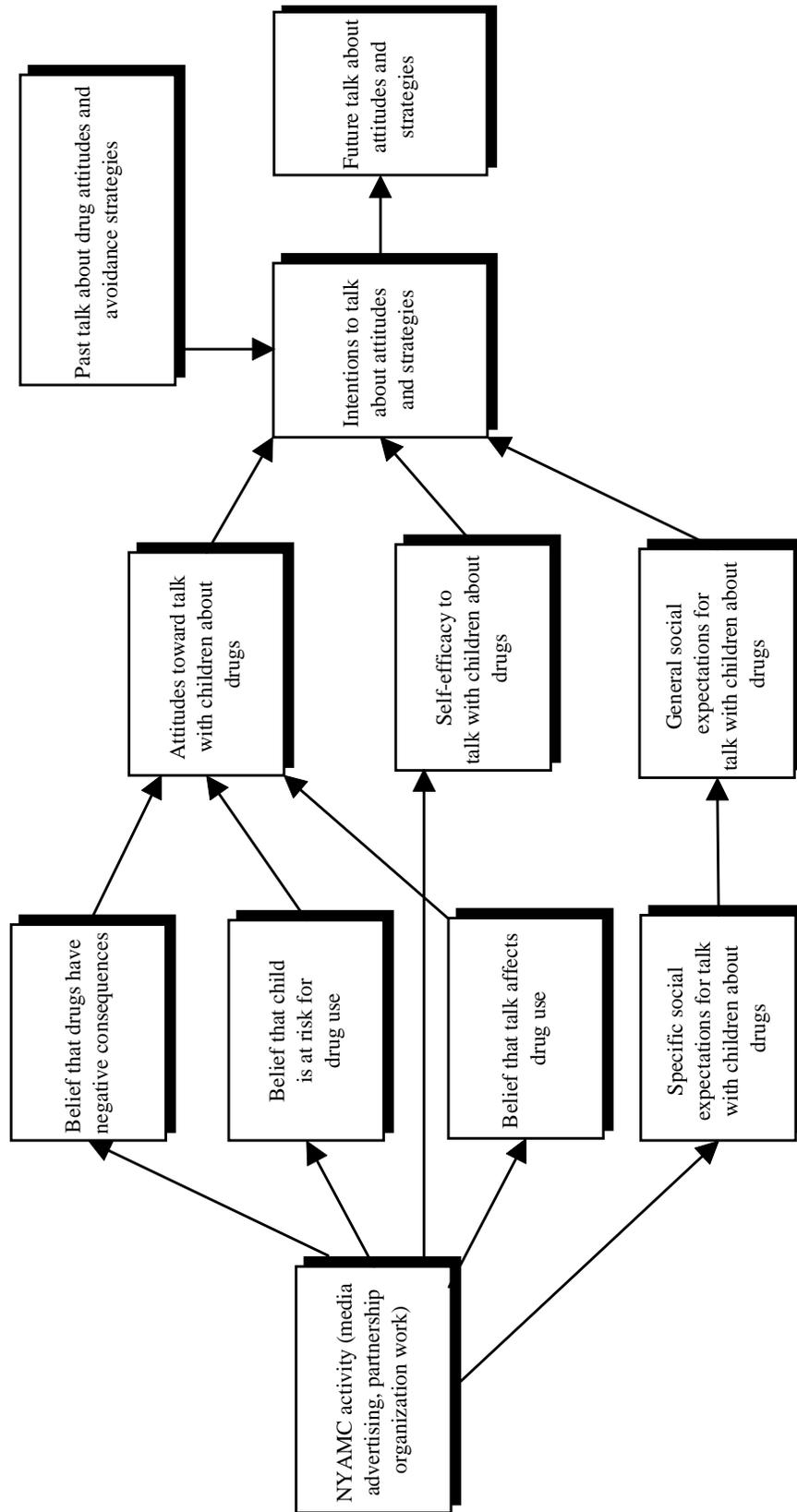
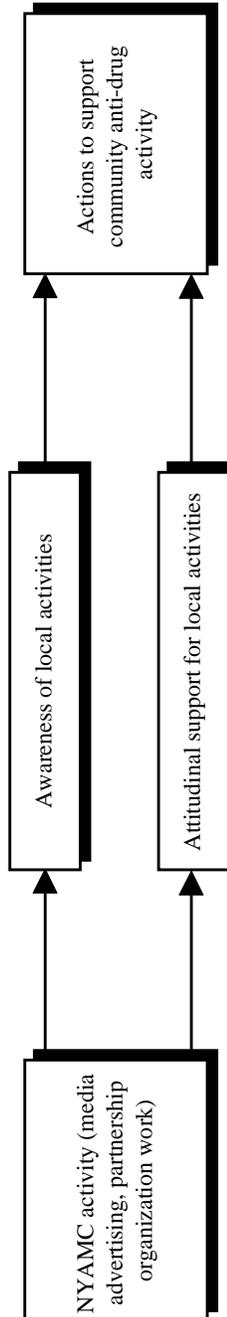


Figure 2-D Model C
Effects on parental support for community anti-drug activity



2. **Delayed learning.** As a direct result of Media Campaign advertisements, youth learn things that lead them to make different decisions about drug use at a later time. The advertisements might have a delayed impact; their influence will show up immediately in associations between exposure and affected beliefs, but current exposure will predict only subsequent behavior. This might be particularly true for 9- to 11-year-olds (and possibly for 12- to 13-year-olds), where current learning would be expected to influence future behavior, when opportunities to engage in drug use increase.
3. **Generalized learning.** Media Campaign advertisements provide direct exposure to specific messages about particular forms of drug use, but youth learn things that lead them to make decisions about drug use in general. Thus, if they learn that cocaine has a particular negative consequence or that medical authorities are opposed to cocaine use, they may generalize those cognitions to a broad negative view of other types of drug use. From the perspective of the Evaluation, this generalized learning would mean that exposure effects are not message specific and will not necessarily operate through an intervening path of acceptance of the specific consequences emphasized. This seems particularly likely among younger children, who may read the meta-message of the barrage of advertisements as saying that drug use is bad but without learning an elaborate set of specific rationales for that attitude.
4. **Social diffusion.** The advertisements stimulate discussion among peers and between youth and parents, and that discussion affects cognitions about drug use. The discussions may provide new information about consequences or social expectations, as well as new skills or self-efficacy. That information may be derived directly from the advertisements or merely stimulated by the presence of the advertisements regardless of their particular messages. Discussions may take place between individuals who have seen the advertisements and those who have not; thus, the effects would not be limited to those who have been personally exposed to or learned things from the advertisements. Discussions may produce or reinforce anti-drug ideas, or they may produce pro-drug ideas (this is called reactance).
5. **Institutional diffusion.** The presence of advertisements (and the other elements of the Media Campaign) produces a broad response among other public institutions, affecting the nature of what they do with regard to drug use. In turn, institutional actions affect youth cognitions and social expectations about drug use and their own drug use behavior. Thus, Media Campaign activities may stimulate concern about drug use among school boards and lead them to allocate more time to drug education. Religious, athletic, and other private youth organizations may increase their anti-drug activities. News organizations may cover drug issues more actively, and the nature of their messages may change. Popular culture institutions (movies, music, entertainment television) may change the level of attention to and the content of drug-related messages. Like the social diffusion route, institutional diffusion does not require an individual-level association between exposure and beliefs or behavior. From the perspective of the Evaluation, this path of influence is expected to be seen only at the community level of analysis. Also, institutional diffusion is a slow process, and there would be a relatively long lag between Media Campaign activities and institutional response and an even longer lag until the effects on youth beliefs or behavior become apparent.

2.2 SAMPLE DESIGN AND DATA COLLECTION METHODOLOGY

The data in the report are based on Wave 1 of NSPY. Youth aged 9 through 18, their parents, and other caregivers were eligible for the sample. Interviewing of households for Wave 1 started in November 1999 and continued through May 2000. Interviews were conducted with 3,312 youth aged 9 to 18 in 2,373 households. Interviews were also conducted with 2,293 parents in 2,282 households, most of which also contained interviewed youth. Interviews were obtained from both youth and parents in 2,228 of the households. The number of interviewed youth who also had an interviewed parent was 3,120.

2.2.1 Sampling

The youth and their parents were found by door-to-door screening of a scientifically selected sample of about 34,700 dwelling units. These dwelling units were spread across about 1,300 neighborhoods in 90 primary sampling units (PSUs). The sample was selected in such a manner as to provide an efficient and nearly unbiased cross-section of America's youth and their parents. All types of residential housing were included in the sample. Youth living in institutions, group homes, and dormitories were excluded.

The sampling was arranged to get adequate numbers of youth in each of three targeted age ranges: 9 to 11, 12 to 13, and 14 to 18. These age ranges were judged to be important analytically for evaluating the impact of the Media Campaign. Within households with multiple eligible youth, up to two youth were selected.

Parents were defined to include natural parents, adoptive parents, and foster parents who lived in the same household as the sample youth. Stepparents were also usually treated the same as parents unless they had lived with the child for less than 6 months. When there were no parents present, an adult caregiver was usually identified and interviewed in the same manner as actual parents. No absentee parents were selected. When there was more than one parent or caregiver present, one of the eligible parents was randomly selected. No preference was given to selecting mothers over fathers. Parents of both genders were selected at equal rates. This was done to be able to measure the impact of the Media Campaign separately on mothers and fathers. When there were two sample youth who were not siblings living in the same household, a parent was selected for each.

The response rate for screening dwelling units to find out whether any eligible youth were present was 95 percent. Among dwelling units that were eligible for the survey, 74 percent allowed the interviewer to enumerate the occupants and to select youth and parents for extended interviews. After selection of youth and parents, the interviewer sought signed consent from a parent to interview the sample youth. After that, the interviewer also sought signed assent from the sample youth. The interviewer then attempted to get extended interviews with the selected youth and parents. Among selected youth, the response rate was 91 percent, meaning that 91 percent of the youth received parental consent, signed to their own assent, and completed an extended interview. Among sample parents, 88 percent completed the extended interview. The parent providing consent to the youth was frequently different than the parent sampled for the extended interview. This explains the fact that the parental response rate was lower than the parental consent rate for youth interviews.

2.2.2 Extended Interview Methods and Content

Prior to beginning the interview, respondents were assured that their data would be held confidential. To strengthen such assurances, a Certificate of Confidentiality was obtained for the study. Under the certificate, the Federal Government pledged that the Evaluation team cannot be compelled by any person or court of law to release a respondent's name or to link a respondent's name with any answers he/she gives. Interviewers showed a copy of the certificate to respondents prior to the interview.

The extended interviews were administered with the aid of laptop computers that the interviewers carried into the homes. Each interview had sections where the interviewer read the questions out loud and entered the responses into the computer and sections where the respondents donned a set of headphones, listened to prerecorded questions, and entered their own responses into the computer. The self-administered sections were arranged to promote a feeling of confidentiality for the respondent. In particular, it was designed to allow people to respond honestly to sensitive questions without allowing other members of the household to learn their answers. As part of the parental consent, parents were informed that only their child would see his or her responses. Interviewers were trained to discourage parents from looking at the screens while the youth completed the interview.

The computer played back a prerecorded reading of the questions rather than just having the respondent read the screen in order to facilitate the involvement of slow readers and cognitively-impaired youth. A touch-sensitive screen was used so that no typing skills were required. To help the respondent understand multiple choice questions, the computer highlighted the response alternatives while it recited them. The interview could take place in either English or Spanish. This approach was highly successful; just 0.4 percent of sample youth and parents were willing but unable to complete the questionnaire for reasons of physical or mental disability or because they could speak neither English nor Spanish, the two languages in which interviews could take place. Youth and parents who did not wish to hear the questions read aloud could remove the headphones and complete the interview by simply reading and answering the questions on the screen.

The youth questionnaire included sections on basic demographics; school and religion; media consumption; extra-curricular activities; personal usage of cigarettes, alcohol, marijuana, and inhalants; expectations for future use of marijuana; feelings of self-efficacy to resist future offers of marijuana use; knowledge of friends' and classmates' use of marijuana; receipt of marijuana offers; family functioning; anti-social behavior of self and friends; approval/disapproval and perceived risk of marijuana and inhalants; perceived ease of parental discussion on drugs and perceived parental reactions to personal drug use; past discussions about drugs with parents, friends, and others; awareness of drug-related media stories and advertising; recollection and assessment of specific Media Campaign-sponsored anti-drug advertisements on TV and radio; Internet usage; and participation in drug education classes and programs.

The parent interview included sections on media consumption; communication with child; monitoring of child; family functioning; knowledge about child's use of cigarettes, alcohol, marijuana, and inhalants; personal participation in community drug prevention activities; awareness of drug-related media stories and advertising; recollection and assessment of specific Media Campaign-sponsored anti-drug advertisements on TV and radio; personal

usage of cigarettes, alcohol, marijuana, and inhalants; basic demographics; and education, income, and religion. When parents were being asked about their children, each such question was targeted to a specific sample child and repeated for every sampled child in the household. Other questions that were not about their children were, of course, only asked once.

The laptop computer played the TV and radio advertisements for both youth and parents to help them recall their prior viewing more accurately. In order to limit the response burden for respondents, usually a maximum of five TV ads were played for each youth and parent. However, there was special advertising aimed at African Americans and at bilingual English/Spanish speakers. In order to measure their recall of the special advertising as well as the general advertising, as many as seven TV ads were shown to respondents in these groups. For radio ads, usually four ads were played for parents, two for teens, and none for children aged 9 to 11. As with TV ads, for African American respondents and bilingual English/Spanish speakers, another 2 radio ads were sometimes played in order to measure exposure to special and general advertising.

There were a total of 38 TV ads and 26 radio ads that were aired during the wave and shown to respondents. See Appendix D for a short description of each ad. The TV ads included 20 (15 in English and 5 in Spanish) aimed at parents and 18 (13 in English and 5 in Spanish) aimed at youth. The radio ads included 10 (8 in English and 2 in Spanish) aimed at parents and 16 (10 in English and 6 in Spanish) aimed at youth. There were additional radio ads that were audio versions of TV ads. These were not played for survey respondents for the reasons given in Section 3.4.2.

A random sample of the ads that were scheduled to air in the two calendar months preceding the month of interview were selected for each respondent. As it turned out, air dates sometimes changed between the time that the sampling software was initiated and the date of interview. For analysis purposes, exposure to ads were counted only when the ad aired during the 60 days immediately preceding the date of interview. The interview also contained a ringer TV ad—an ad that had not actually been shown. This was done to allow study of the accuracy of ad recall. Some analyses of these results are in Appendix C. For African American respondents and bilingual English/Spanish speakers, an additional random sample was drawn of ads specially targeted to them that had not already been drawn in the general market sample.

2.2.3 Weighting

Weights were developed to adjust the analysis for differential probabilities of selection, differential response rates, and differential coverage. Youth in the 12-13 age range had the largest probability of selection since they were oversampled. Youth in the 9-11 age range had somewhat smaller probabilities of selection, and youth in the 14-18 age range had the smallest probability of selection. Youth in the 14-18 and 9-11 age ranges with siblings in the 12-13 age range had higher probabilities of selection than those with no such siblings. (This was done to get more benefit out of each parent interview.) Youth with siblings in the same age range had smaller probabilities of selection since just one youth was selected per age range. Parents with spouses had smaller probabilities than single parents since we generally only selected one parent per household.

Response rates were found to vary geographically. Data from the 1990 Decennial Census were used to sort the sample into groups with different response rates. Within a group, the weights were adjusted upward by the inverse of the response rate. This has the effect of increasing the weights for difficult-to-reach households.

Coverage also varied geographically and by age. Table 2-A shows coverage rates by age. Overall, coverage was about 70 percent. It would appear, based on census estimates, that about 30 percent of screener respondents with children in the desired age range chose not to reveal the presence of their children to us. Perhaps this was an easy way to refuse participation in the survey without being impolite. To compensate for this as best as possible, the weights were adjusted so that estimates of sample youth were consistent with those from U.S. Census Bureau estimates by gender, age group, race and ethnicity, and region. The U.S. Census Bureau estimates were a synthesis of data from the Current Population Survey (CPS) and the Decennial Census. The ordinary CPS totals could not be used in the adjustment because the CPS counts youth in dormitories at their parents' homes, but this is not done in NSPY. In the synthesis, CPS estimates were adjusted to remove estimated counts of youth living in dormitories. These were created by a special tabulation of the 1990 Decennial Census PUMS (Public Use Microdata Samples) that counted youth in dormitories in April 1990. It should also be noted that the CPS is itself adjusted for undercoverage and also for undercoverage in the Decennial Census; in October 1994, the CPS coverage rate for youth aged 15 was 89.5 percent (Montaquila, et al., 1996).

Table 2-A
Coverage rates by age

Age group	Coverage rate (%)
9-11	70
12-13	74
14-18	67

2.2.4 Confidence Intervals and Data Suppression

Confidence intervals have been provided for every statistic in the production tables. These intervals indicate the margin for error due to the fact that a sample was drawn rather than conducting a census. If the same general sampling procedures were repeated independently a large number of times and a statistic of interest and its confidence interval were recalculated on each of those independent replications, then the average of the replicated statistics would be contained within 95 percent of the calculated confidence intervals.

The confidence intervals reflect the effects of sampling and of the adjustments that were made to the weights. They do not generally reflect measurement variance in the questionnaires. The intervals are based on variance estimation techniques that will be available in separate technical reports. In brief, subsamples of the sample were drawn and put through the same estimation techniques. The adjusted variation among the subsamples

provides an estimate of the variance of the total sample. Details on how confidence intervals were calculated from variance estimates may be found in Appendix A.

Some estimates are suppressed. This was done when the reliability of a statistic was poor. This was measured in terms of the sample size and the width of the confidence interval. Estimated proportions near 0 percent and 100 percent are more likely to be suppressed than other estimates since it is difficult to estimate rare characteristics well. The exact criteria for this suppression are given in Appendix A.

2.2.5 Exposure Index and Imputation of Ad Recall

Because there were more ads being aired than could be reasonably shown to every survey respondent, a sample of ads was drawn as discussed above. Also as noted above, this was not a simple random sample of ads. Additional ads were selected and shown to African American respondents and bilingual respondents. In order to create a measure of ad recall that was consistent across race and language groups, the decision was made to impute recall for all ads that could have been shown to the respondent but were not. The imputation was based on drawing respondents from similar pools and transferring values in what is known colloquially as a hot-deck imputation. The donor pools were defined in terms of general recall of anti-drug advertisements (measured prior to showing any specific ads), cable subscription (yes/no), and the length of time the ad had been on the air prior to the interview. If the ad had not been aired at all within the 60 days preceding the interview, it was not included in the calculations.

2.2.6 Future Waves of Data Collection

Wave 1 will be followed by additional waves of data collection. NSPY has a two-phase design where the first phase recruits a sample of eligible youth and their parents and the second phase follows them for two or three additional interviews at intervals of 6 to 18 months. The recruitment phase is broken into three national cross-sectional surveys or waves that each last about 6 months. The followup phase begins during the third wave of recruitment and lasts through June 2003. Youth who move within the same metropolitan area will be followed. Parents will also be re-interviewed although some may be replaced in the event of separation or custody shifts. Combining the recruitment and followup phases, there will be seven 6-month waves from which national semiannual estimates will be prepared. This report contains data from Wave 1, the first of the three recruitment waves.

2.3 SAMPLE DESCRIPTION

2.3.1 Youth

Detail Table 2-1 shows the sample size for youth by age and other characteristics. The total sample size of 3,312 youth is nearly evenly split among the three targeted age groups. The sample size is deliberately slightly larger for the youth aged 14-18 because larger design effects were anticipated for this age domain. Many of the tables also show estimates for youth aged 14 to 15 and for youth aged 16 to 18. These are much less reliable than the other

age breaks since the sample sizes are only 552 and 611. Thus, when the sample is broken down by an additional demographic such as gender, separate detail for the finer age breaks is never shown.

The estimated number of eligible youth in the nation is 39.6 million. As mentioned above, this excludes youth in institutions, group homes, and dormitories, as well as other types of group housing. The estimated confidence intervals is so tight on this statistic because of the controlling of this estimate to agree with a synthesis of census information. Table 2-1 also shows breakdowns of the sample and the population by gender, race/ethnicity, region, urbanicity, and sensation seeking. Also, for youth aged 12-13 and 14-18, there are breakdowns by past marijuana usage. Some of these breakdowns require some elaboration.

2.3.2 Race/Ethnicity

The categories used in all tables are: white, African American, and Hispanic. These are short labels for more complex concepts. White means white but not Hispanic. African American also excludes Hispanics. Race and ethnicity were asked as two separate questions. For older youth, aged 12 to 18, self-reported race and ethnicity were typically used. For children aged 9 to 11, race and ethnicity reported by the screener respondent were typically used. In both cases, respondents were first allowed to choose multiple races from the standard list of five races:

- White
- Black or African American
- Asian
- Native Hawaiian or other Pacific Islander
- American Indian or Alaska Native

For those who chose more than one category, there was a followup question to pick just one. For those who could not pick just one, interviewer observation was used. Separate detail is not shown in any of the tables for the last three categories because of the low reliability associated with small sample sizes. The total number of interviewed youth who are Asian, Native Hawaiian, other Pacific Islander, American Indian, or Alaska Native was just 115, with about 38 per age range. However, there are some respondents in every group and their responses are used in the overall estimates.

2.3.3 Region

The four major regions of the United States for which data are presented represent groups of states as standardly defined by the U. S. Census Bureau:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

2.3.4 Urbanicity

The three levels of urbanicity given in this report are a function of a national coding scheme developed by a private company called Claritas. The urban and suburban concepts jointly cover areas with a minimum density of about 960 persons per square mile where there is a population center with a minimum population of about 37,000 people. Within areas where the population density climbs much higher, those areas with the highest density are considered urban while the rest are considered suburban. Suburban areas never have a density greater than 6,811 persons per square mile, but the dividing line between urban and suburban population density slides upward from 960 to 6,811 depending on the density at the population center. The town and rural concept covers the rest of the country.

2.3.5 Sensation Seeking

Sensation seeking is a biologically-based trait "based on the idea that persons differ reliably in their preferences for or aversions to stimuli or experiences with high-arousal potential" (Zuckerman, 1988, p. 174). Individuals who are high in the need for sensation desire complex and stimulating experiences and are willing to take risks to obtain them. This drive for novel, complex, and intense sensations and experiences is satisfied by a willingness to take more social risks (e.g., impulsive behaviors, sexual promiscuity), physical risks (e.g., skydiving, bungee jumping, driving fast), legal risks (e.g., getting arrested and put in jail), and financial risks (e.g., paying fines, impulsive purchases) (Zuckerman, 1979, 1994).

Several studies show that the variation in sensation seeking predicts behavioral differences, especially illicit drug use. High sensation seekers are more likely to begin experimenting and using drugs earlier than low sensation seekers, as well as use higher levels of a variety of different drugs (Donohew, 1988, 1990). High sensation seekers in junior high are four times as likely as low sensation seekers to use marijuana; in senior high, high sensation seekers were three times more likely to use marijuana than low sensation seekers (Donohew, 1988).

Sensation seeking among middle and high school students is generally measured using a 20-item scale developed specifically for adolescents (Stephenson, 1999; Zuckerman, 1979, 1994). More recent evidence suggests that an 8-item scale from the original 20 items has levels of reliability and validity sufficient to replace the 20-item scale (Hoyle, Stephenson, Palmgreen, Lorch, & Donohew, 2000). In a personal communication, Dr. Philip Donohew reports a comparison between the 8-item and a reduced 4-item scale on a sample of 6,529 seventh through twelfth graders surveyed by the Partnership for a Drug Free America in 1999. The 8-item scale had an internal reliability of .85, while the 4-item scale was reduced only slightly to .81. The two correlated at .94. Although the evidence of these two studies is unpublished it suggests that the 4-item sensation seeking scale is both a valid and reliable predictor of drug use and intention in middle and high school years.

This reduced series of four questions on sensation seeking were asked in the youth interviews. Respondents were asked to rank their agreement on a scale of 1 to 5 with the following statements:

- a. I would like to explore strange places.
- b. I like to do frightening things.
- c. I like new and exciting experiences, even if I have to break the rules.
- d. I prefer friends who are exciting and unpredictable.

Those with an average response greater than 2.5 were classified as being high sensation seekers. This was the overall median score on the four items. Given a fixed cutoff that does not vary by age or sex, one would expect the prevalence of high sensation seekers to be greater among males than females and to increase with age. This is also the pattern observed. It was decided to use a single threshold to facilitate comparisons across groups and time.

2.3.6 Past Marijuana Usage

Youth were broken down into four categories of marijuana usage, only two of which are shown in most tables. The non-user row is for youth who have never tried marijuana. The occasional user row is for youth who have used marijuana 1 to 9 times in the past 12 months. Youth who have used more frequently in the past year are classified as regular users and youth who have tried marijuana but not smoked it in the last 12 months are called former users. There were too few former users and regular users for these categories to be used as standard row variables in tables.

2.3.7 Parents

Detail Table 2-2 shows sample sizes for parents, weighted population estimates, and confidence intervals on the population estimates. Using NSPY concepts and procedures, there about 43.3 million parents of youth aged 9 to 18 in this country. As mentioned above, the NSPY concept of parent excludes noncustodial parents but does include stepparents, foster parents, and even nonparental caregivers (if no parent lived with sample youth) who live with youth aged 9 to 18. The NSPY concept also excludes parents whose children live in group facilities and dormitories.

In addition to the breakdowns of race/ethnicity, region, and urbanicity used in the youth tables, there are breakdowns by parental gender, parental education, and age of children. With the NSPY concept, about 38 percent of “parents” are male. This just means that of the parents, stepparents, and caregivers who live with children aged 9 to 18, 38 percent are male. The sample size by age of children add to more than the total sample size since a parent with multiple children will be counted in each applicable row.

2.3.8 Dyads

Detail Table 2-3 shows sample sizes for dyads, weighted population estimates, and confidence intervals on the population estimates. A dyad is defined to be the combination of a youth and a parent for that youth. The sample size is smaller for dyads than for all youth because for dyad analysis, it was required that both the youth and his/her parent respond to NSPY. For dyad statistics, the rows are defined in terms of the characteristics of the youth. For youth with two parents, the confidence intervals reflect the assumption that both parents would have given the identical response about the youth. The only parent variables that are used in dyad tabulations are those that are specifically about the sample youth.

2.4 POTENTIAL ANALYSIS MODES

In order to gauge the impact of the National Youth Anti-Drug Media Campaign on (1) awareness, (2) attitudes, and (3) behavior, the Evaluation team has to answer three types of questions:

1. Is the Media Campaign reaching its audiences?
2. Is there desirable change in the outcomes addressed by the Media Campaign, in drug use behavior, and in the beliefs and attitudes that underpin that use?
3. How much of the observed changes in outcomes can we attribute to the Media Campaign?

Here we explain some of the approaches we will use to answer each of those questions:

2.4.1 Measuring Exposure to the Media Campaign

The Media Campaign will publish information about how much media time it has purchased. More specifically, for each audience of youth or parents, information will be available on the proportion that would have been in the audience for each ad and all ads. Also, they will estimate how many times in a given week would each ad and all ads have been seen. These are called reach and frequency and are summarized as gross ratings points (GRPs). Our task with regard to exposure is to measure the extent to which placement of the ads and other Media Campaign communication efforts broke through into the minds of the audience—that is, are audiences aware of the Media Campaign and is awareness increasing over time? Can

target audiences recall the ONDCP sponsored ads and other messages that were shown? We propose to assess audience awareness in two ways:

- A set of general questions is asked about advertising recall for each channel: radio and television, print, movies, outdoor advertising, and Internet. Also, they are asked whether and how often each respondent recalls seeing anti-drug messages from each source.¹ These measures may be reasonably interpreted as providing a general sense of level of exposure, rather than a precise measure of recent exposure. In that sense, these measures may be seen as a little soft. They ask respondents to summarize a lot of viewing or listening or reading experience and express it in a single number.
- To improve the precision of our exposure measurement, we have added a second major approach to exposure measurement—the recall of specific ads. Thus far, radio and television advertising represent the largest part of the advertising effort. We focus on those channels for this next type of measure. Through the use of Westat’s Audio Computer-Assisted Self-Interview (ACASI) format, we are able to show each respondent Media Campaign television and radio ads at full length on a laptop computer brought to the respondent’s home by a member of Westat’s field interviewing workforce. (See Section 2.2 for a description of the National Survey of Parents and Youth (NSPY). The ads shown are all ads that have been broadcast nationally in the previous 2 months, according to the Media Campaign. For each respondent, we actually show a subsample of the Media Campaign’s recent and ongoing ads (four television and two radio). Ad samples for African American and bilingual (English Spanish) respondents are also selected to permit separate evaluations of ads targeted toward these special populations. We ask each respondent to tell us whether they have ever seen the ad, how often they seen the ad recently, and how they had evaluated the ad.²

We know that respondents might tell us that they have seen an ad even though they had not because they forgot or because they want to be agreeable. If we took all claims at face value we might overestimate exposure. Therefore, we also ask each respondent whether he or she has seen an ad that has never been broadcast. This gives us a benchmark to assess true exposure.

- In addition, the Evaluation team recognizes that while the Media Campaign is spending much of its budget buying media time, it also seeks to enhance the extent to which anti-drug communication is on the air, more generally. The Media Campaign is working with national and local organizations; it is working with corporate partners; it is making efforts to disseminate information through the mass media generally through press releases and other public relations technology. To try and capture the extent to which target audiences are aware of these efforts, we have a series of measures that will detect change in these more general aspects of the public communication environment. Questions asked include the frequency of exposure to anti-drug stories in a variety of media channels; the extent to which respondents have

¹ See for example question D10 in the Teen questionnaire.

² See for example question D17 of the Teen questionnaire.

heard public discussion of several drug issues; and the amount of talk within families and among friends about drug issues. For all of these measures researchers will see whether the intensity of campaign efforts are translating into changes in the perceived public communication environment about drugs.

2.4.2 Measuring Changes in Attitudes and Behaviors

The second evaluation question addressed is whether observed outcomes are moving in the right direction. Models were developed based on existing theories of health behavior change and of communication effects. These suggest how the Media Campaign might work, if it were successful, and have determined what measures are incorporated into the survey questionnaires. The outcomes being measured capture quite a range of objectives for this campaign:

- **Behavior:** Trial and regular use of marijuana, and of inhalants, primarily, with some additional measurement of alcohol and tobacco use; behaviors of parents—particularly parent-child discussions about drug use and parent monitoring of and engagement with their children’s lives; past behavior and intentions to engage in these behaviors in the near future.
- **Attitudes and beliefs:** Beliefs and attitudes that research has shown to be closely related to these behaviors. For example, with regard to youth drug use, beliefs about the health consequences, the mental functioning consequences, and the performance consequences of drug use are measured.
- **Social pressures:** Perceived social pressures to engage in these behaviors, for example to use or not use drugs—what peers are doing, what confidence respondents have in their ability to resist drug use, what parents and friends would say about drug use.

In this first report which beliefs and attitudes are substantially related to intentions, fitting with prior expectations based on the models of the process through which the Media Campaign is to work will be shown. To do that, simultaneous associations of beliefs and attitudes with intentions are estimated, while incorporating statistical controls for confounding variables. In subsequent rounds researchers will measure change in these outcomes, lagged associations of prior attitudes, intentions with current behavior, and association of Media Campaign exposure with all of these.

2.4.3 Attributing Observed Changes in Attitudes and Behavior to the Media Campaign

This is the most difficult task confronting the Evaluation—making a clear case for or against the influence of exposure to the Media Campaign on observed attitudes, intentions, and behaviors, both overall, and for particular subpopulations of interest. The approach is outlined below.

This report presents a first round of measurement. There is extended discussion of the level of exposure achieved by the Media Campaign. However, it would be premature to address the issue of Media Campaign effects after only 9 months of operation of Phase III of the Media Campaign. This reflects both substantive and technical concerns. From the substantive perspective, effects are expected to be achieved and measurable after a longer period of Media Campaign operations. From the technical perspective, there would be little confidence in inferences from a simple cross-sectional analysis, without even accompanying evidence for change over time in outcomes.

- Starting with Wave 2, the association of exposure and outcomes will be reported. Further examined will be whether, for example, the youth who report heavy exposure to campaign messages are more likely to have desirable beliefs about the negative physical consequences of marijuana than do youth who report less exposure. A sophisticated statistical technique will be used called “propensity scoring” to reduce the risk that observed differences are the result of the influence of confounding variables rather than the result of the effects of exposure on outcomes. These analyses will first appear in the second semi-annual report scheduled for March 2001.
- Also examined will be whether the evidence for effects differs depending on the characteristics of the youth or his/her parents. Do effects differ depending on gender, ethnicity, or parent’s economic background? Do they differ depending on the child’s personality characteristics (e.g., a high sensation seeker or not), depending on the behaviors of peers in the youth’s social network, or depending on the youth’s interaction with his/her parents in general or about drug use issues in particular? Do effects vary depending on the youth’s contact with other anti-drug institutions such as schools, out-of-school programs, religious institutions or general media exposure? These analyses will first appear in the third semi-annual report, scheduled for September 2001.
- Starting with Wave 4, these cross-sectional causal analyses will be supplemented with longitudinal causal analyses. The evaluation design has us following the same national sample of youth and their parents for 3 or 4 years. Therefore, researchers will be able to examine whether a young person who reported high versus low exposure on the first, second, or third wave, progressed at a different rate on drug-related beliefs and practices in subsequent waves. Compared to the relatively more simple cross-sectional analysis, this longitudinal analysis capability will allow us to improve our ability to reject threats to causal claims related to confounding variables. In addition, it will permit us to respond to concerns about reversed causal direction (that the cross-sectional association between exposure and beliefs is the result of beliefs affecting recall of exposure rather than exposure affecting beliefs.) These analyses will commence once we have sufficient followup data and will make their initial appearance in our fourth semi-annual report scheduled for March 2002.
- In addition, we recognize that some of the models of Media Campaign influence suggest that the effects of the Media Campaign will be felt not just among individuals but among communities, more broadly. If there is sufficient variation in exposure across communities, we will be able to repeat some of these analyses at the level of the community, to see whether communities that have a relatively high versus low level of exposure to anti-drug messages show different patterns of progression on the

outcome measures. These analyses are expected to be part of final report in March 2004.

3. EXPOSURE TO PAID MEDIA CAMPAIGN ADVERTISING

This chapter reviews information about exposure to Media Campaign messages during late 1999 and early 2000. It is too early to tell whether the reach and frequency of viewing achieved and the content of the ads have sufficient persuasive power to influence target beliefs and behaviors. The chapter begins with a description of the media buying activities of the Media Campaign. The chapter then presents statistics on the level of ad recall among youth and parents by channel with some focus on television and radio advertising. Evaluations of the TV advertisements by youth and parents are then discussed for ads that they recalled. The last section focuses on exposure to anti-drug messages through the Internet.

Gross Ratings Points

GRPs are the customary unit for measuring exposure to ads within the advertising industry. If one percent of the target population sees an ad one time, the ad earns one GRP. It is also quite typical to report GRPs on a weekly basis. So, 100 GRPs is equivalent to one weekly exposure to one ad for each person in the target population. In more common language, an ad that earns 100 GRPs in a week, is projected to have been seen by the average person 1.00 times, and ad that earned 250 GRPs would have been seen by the average person 2.50 times. Exposure to multiple ads, or to ads available through multiple channels, is calculated by summing the GRPs for each of the individual ads for each channel. GRP estimates are averages across the relevant population.

If 100 GRPs have been purchased for a week, that means that average number of times that a random person saw or heard programs, billboards, newspapers, or magazines carrying the ad was 1.0. This does not mean that everyone saw the ad exactly once. It is quite possible that some saw it many times while others saw it rarely, but the average number of times for a random person is 1.0.

GRPs are estimated for each ad based on the projected audience for a particular channel and program. For example, based on television ratings data from the Nielsen Media Research, the audience for a particular television program at a particular hour can be estimated. If an ad plays during that program, it is assigned the program's GRPs. For example, if 10 percent of the 12- to 17-year-old audience is estimated to be in the audience for program A from 8 to 9 p.m., then an ad played on that program earns 10 GRPs. Parallel projections of audience size are made for all media channel based on data from a variety of media monitoring companies, and GRP estimates are calculated accordingly. Clearly GRP estimates are accurate only to the degree that the estimates of audience size are accurate. Also, at best, GRPs capture availability of an audience. They do not guarantee that an audience member was actually paying attention to the ad.

3.1 MEDIA BUYING REPORTS

- **Across its multiple media outlets, the Media Campaign reports that it purchased enough advertising time to achieve an expected exposure to 2.3 youth-targeted ads per week for the average youth and to 2.7 parent-targeted ads per week for the average parent over the 39-week period covered by this report (September 1999 through May 2000). These estimates do not include exposure by youth or parents directed to the other audience, called “spill.”**

These estimates of weekly expected exposure are derived from reports of media time purchased by Ogilvy on behalf of the Media Campaign. Ogilvy reported that it purchased a total of approximately 8,828 gross rating points (GRPs) for youth and approximately 10,517 GRPs for parents over the 39 week period.¹ These total GRPs then translate into 226 GRPs for youth per week and 270 GRPs for parents per week. These are equivalent to 2.3 paid ads for youth and 2.7 paid ads per week for parents. In addition, youth and parents might have been exposed to advertising directed to the other group, or to unpaid advertising donated as a pro-bono match to the paid advertising. There was some but not a great deal of variation week by week across the 39 week period. Youth weekly expected exposure varied from 1.6 to 3.6 exposures, but in most weeks was between 2.0 and 2.5 exposures. Parent weekly expected exposures varied from 1.75 to 4.00, but only rarely fell below 2.0.

- **Television and radio dominate the youth media buys (83% of all GRPs). In contrast, for parents, television and radio buys were less than half of all GRPs (49%) (Table 3-A).** Youth buys were spread among a variety of media, but the television and radio channels dominated. About one-fourth of the youth buys were for network and cable television, 16 percent for in-school television (largely Channel One) and 11 percent for spot TV (in 102 metropolitan areas around the country) (see Figure 3-A). Parent GRPs, on average, were higher than youth GRPs. Many of the adult GRPs came from media other than television or radio or even print. Indeed 39 percent of all of the GRPs came from outdoor media (billboards, bus shelter placards, etc.). While the Media Campaign purchased 119 GRPs per week for youth on television, it purchased only 55 GRPs per week for parents on television. Outdoor media for parents was close to double the television GRP level, at 105 (Figure 3-B).

¹ Ogilvy has provided the evaluation team with detailed information about the media purchases made, organized by channel, by month, and in the case of radio and television advertisements, by the name of ad. The GRP data presented in this report are derived from that information, supplied as of August 14, 2000. It should be recognized that these are not definitive buying information. Some of the information is based on post-broadcast confirmed buys, some of it on pre-broadcast scheduled buys, and some on estimated buys. Also, there are survey errors of unreported magnitudes in the audience surveys.

Table 3-A
Gross ratings points (average per week and per medium)

	GRPs – Youth	% -Youth	GRPs – Parents	% - Parents
All media 8/30/99-5/28/00	8,828		10,517	
All media per week	226	100%	270	100%
Television per week	119	53%	55	20%
Radio per week	68	30%	76	28%
Print per week	23	10%	33	12%
Other	17	8%	105	39%

NOTE: The other category for youth includes advertising on basketball backboards and in cinemas; the other category for adults mostly includes outdoor media

Figure 3-A
Youth media buys by medium

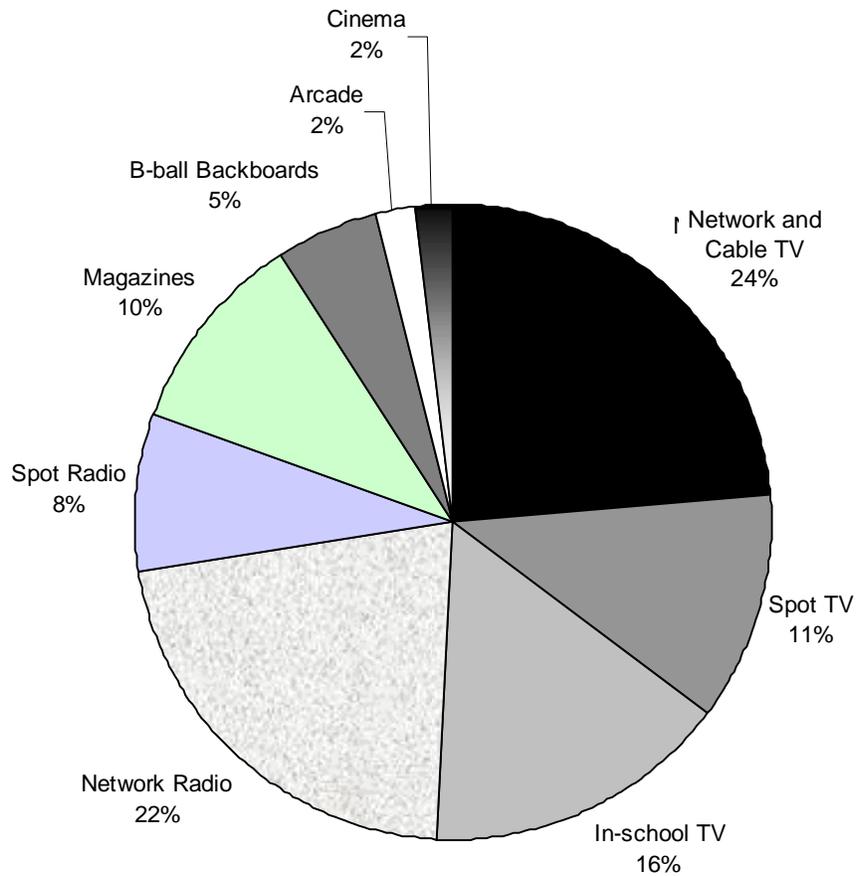
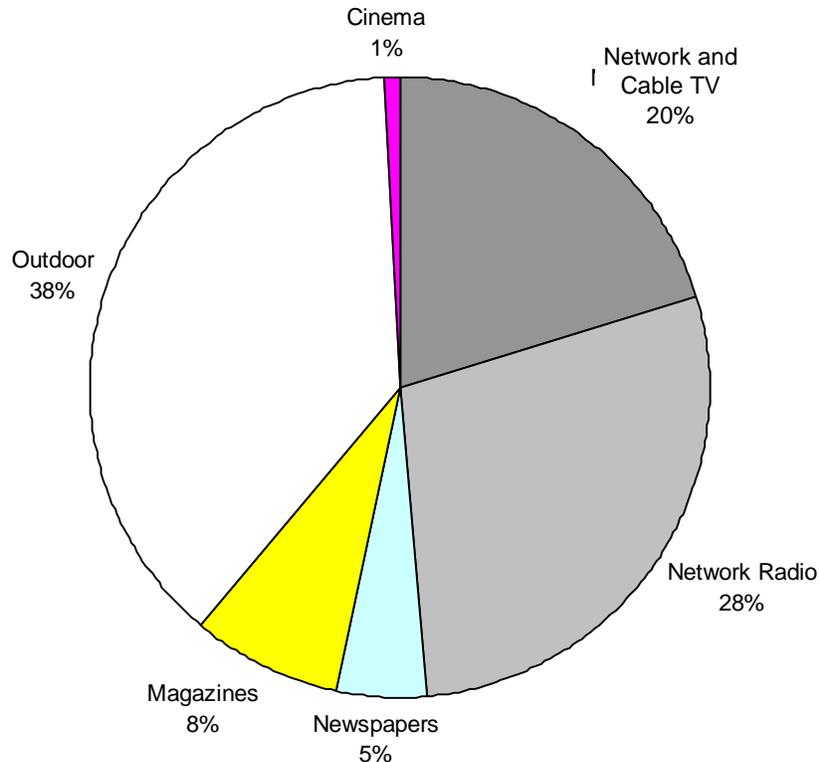


Figure 3-B
Adult media buys by medium



3.1.1 Distribution of Exposure

Reported GRP numbers are average estimates of exposure across the entire population, for the specified group. It is possible that the same level of GRP performance can be achieved by producing many exposures for relatively few people or a few exposures for many people. For example, a media buying plan that bought four exposures per week for half of a population would achieve the same GRP level ($200=4*.50*100$) as a media buying plan that purchased two exposures per week for all of the population ($2*1.00*100$). This is why media buying strategies are customarily expressed in terms of both reach and frequency, or, more broadly, in terms of the distribution of exposure, rather than just the average exposure.

The Media Campaign GRP data have been reported in terms of total GRPs, not in terms of reach and frequency or distribution, because that is all that was available.² NSPY provides direct estimates of the reach and frequency of ad viewing, but before presenting those estimates, it is useful to look at the general viewership levels of each of the channels in

² If available, future reports in this evaluation series will include GRP data in terms of reach and frequency, as well as total GRPs.

which advertising was bought and to classify the GRPs as having been bought on channels with wide reach or with less wide reach.

About two-thirds of the youth GRPs were bought in media with the potential for wide reach, and about one-third in media with less wide reach. Network radio (21% of the GRPs) and the combination of network and cable television (24% of GRPs) have the potential to reach most of the population. Cable television is included in the wide-reach category since it now has much wider reach than it did previously. More than 80 percent of the 12- to 18-year-old youth in NSPY reported that they had watched the MTV network, a cable channel, in the past 30 days. Nearly 80 percent of NSPY parents reported having cable television in their homes. Buys were also made on spot TV (11% of the youth GRPs) and spot radio (8% of the youth GRPs) in 102 (TV) or 106 (radio) metropolitan areas around the country representing 86 percent of the country's population. These buys were made in late afternoon or early evening programming. All these buys have the potential for wide reach. Among NSPY youth aged 12 to 18, 91 percent report listening to some radio on the average weekday and 89 percent on the average weekend day. Fully 97 percent of youth aged 9 to 18 in NSPY reported watching some TV on the average weekday and 98 percent on the average weekend day. With all TV and radio buys, of course, the reach and frequency will depend strongly on the particular buys in terms of programs and times.

Channels with less wide reach include in-school television (17% of youth GRPs), basketball backboards (5%), arcades (2%) and cinema (2%). Almost all of in-school television was focused on Channel One. Channel One claims to reach 8,000,000 students (www.channeloneparents.com/network.html, July 28, 2000). This is about one-fifth of the number of 9- to 18-year-olds represented in NSPY (39,590,000). Magazines (10% of youth GRP) have considerably lower reach. Among NSPY youth aged 12 to 18, only 39 percent report reading magazines on a weekly basis. The remaining channels have unknown general reach among youth. NSPY provides statistics about how often anti-drug ads have been seen on these channels but not overall viewership of the channels.

For parents, the balance between wide reach media and other media is around half and half. Network TV (21% of the GRPs) and radio (28%) are media with wide reach. Of NSPY parents, 94 percent reported watching some TV on the average weekday; 94 percent watch some TV on the average weekend day; 90 percent listen to some radio on the average weekday; and 83 percent listen to some radio on the average weekend day. Newspapers (5% of GRPs) and magazines (8% of GRPs) have less wide reach. Only 43 percent of parents report reading a newspaper on a daily basis, and only 50 percent report reading magazines on a weekly basis. The general reach of the outdoor channel (39% of GRPs) is not known. NSPY estimates of the reach of the anti-drug ads placed in all the channels are discussed later.

3.1.2 Distribution of Ad Platforms

The Media Campaign strategy for both youth and adults has been to choose a limited number of themes or broad messages, called message platforms. The intention was to focus all of the advertising during a particular period on one platform so that the message of that period gets maximum exposure.

Tables 3-B and 3-C outline the major platforms for both audiences. Each ad that was broadcast could be classified as to what platform it addressed. Some ads were classified as fitting under more than one platform (the ads are classified by name under their respective platforms in Table 3-B and 3-C). Descriptions of the ads are provided in Appendix D. Tables 3-B and 3-C also indicate what proportion of television GRPs was assigned to each platform. For youth, half of the emphasis was on “positive norms,” the idea that most youth did not use drugs and/or that others expected the youth not to use drugs. Resistance skills (how to say no) and negative consequences (e.g., physical or mental health or schooling outcomes of drug use) received one-third of the GRPs each. For parents, the emphases were first on parenting skills and personal efficacy to intervene, with secondary but still substantial emphases on the idea that their child was at risk of drug use, and on the harm resulting from drug use.

Table 3-B
Youth message platforms on television

Advertising platform	Percentage of total television GRPs ¹	Ads that were in this platform
Negative consequences	32%	Brothers ² , No Thanks, Hockey, Make You Think ³ , Mother/Daughter, Stressed ³ , Brother Jeff ³ , No Skill,
Normative positive consequences	53%	Mary J. Blige ² , Drugs Kill Dreams ² , Andy MacDonald, Scatman ² , Dixie Chicks
Resistance skills	37%	Drugs Kill Dreams, How to Say No, Scatman, No Thanks, What to Say- Boy ³ , What to Say- Girl ³ , Michael Johnson
Other	1%	Ads not associated with the major platforms: Lauryn Hill, Layla, I'm Free, Miss America, and unknown

¹ Some ads were counted in more than one platform, so percentages sum to more than 100 percent.

² On both television and radio.

³ Radio only GRPs not included in this table.

Table 3-C
Adult message platforms on television

Advertising platform	Proportion of total television GRPs	Ads that were in this platform
Parenting skills/ personal efficacy	47%	Tree Fort ¹ , Cooking Dinner ¹ , Basketball ¹ Clinic, Phone, Office, E-mail, TV
Your child at risk	34%	Keep Trying ¹ , Happy Birthday ¹ , Pipe ² , Roach Weed, Drugs, Clip ² , Pot Grass ¹ Bag ²
Perceptions of harm	18%	Symptoms, Under Your Nose, Funeral
Other	1%	Ads not associated with the major platforms: Car

¹ Radio only GRPs not included in this table.

² On both television and radio.

3.2 RECALL OF EXPOSURE FROM NSPY QUESTIONNAIRES

A successful anti-drug media campaign will break through the general clutter of advertising in the public information environment and be noticed consistently by an audience. If Media Campaign advertising cannot be recalled, it is unlikely to be effective in the next step of changing beliefs and attitudes around drug use, or of eventually affecting behavior.

The measurement of exposure to the advertising campaign is approached in two complementary ways in the NSPY. First, all respondents were asked for an estimate of how often they had seen or heard anti-drug advertisements in each of the major channels in which the Media Campaign had purchased time (including radio and television, newspapers and magazines, outdoor venues, or movies). These questions were modeled after a measure used in the Monitoring the Future (MTF) study so as to maximize comparability across surveys. These measures are intended to provide a general impression of the intensity of recent exposure and will be particularly helpful in comparisons over time and across channels.³ These general measures are likely to capture both exposure to advertising directed to the particular group of respondents (youth or parents) and the ‘spill’ exposure to advertising directed towards the other audience. Questions about Internet exposure to anti-drug information were handled separately and are described below.

In addition, to improve the precision of the measurement of exposure, questions were added about the recall of specific ads. Radio and television advertising represented a large part of the advertising effort, particularly for youth, and was the focus for this measure. These measures are described after the results from the general measures of exposure are reported.

³ See questions D10-D13 of the Teen and Child questionnaires and questions F1-F4 of the Parent questionnaire – all in the Companion Questionnaire Volume.

3.2.1 General Measures of Exposure

- **The great majority of youth and parents recall some exposure to anti-drug advertising (Table 3-D).** The four general recall questions were transformed into quantitative measures of exposure and summed to provide rough estimates of total recalled exposure.⁴ Using these measures, 90 percent of parents and 93 percent of youth recalled seeing or hearing anti-drug advertising at least once per month.
- **About 70 percent of the youth and parents report weekly exposure from the combination of the sources (Table 3-D).** Thus, the purchase of approximately 2.3 exposures per week, according to the GRP data above, produced recall of at least one ad per week among 70 percent of the (youth) population but less than that among 30 percent of the population. Although the Media Campaign purchased a somewhat higher GRP level of 2.7 exposures per week for parents, the general recall questions produced a similar proportion with weekly recall across the four routes (Table 3-D).
- **The proportion recalling exposure more than once per week increases with child’s age.** Almost 75 percent of 14- to 18-year-olds and 73 percent of 12-13 year olds recalled ads at a frequency of weekly or higher while 62 percent of 9- to 11-year-olds recalled ads at this frequency. This differential pattern of recalled exposure by age is consistent with the media buying plan. In general, outlets were chosen to maximize exposure among teens rather than 9- to 11-year-olds. Channel One, for example, is less available to the younger children.
- **The median number of recalled ad exposures by parents was 10 per month, and the median number of recalled ad exposures by youth was 11 per month, across all sources.** (The median number of ads recalled is the number of ads such that half the audience saw the ads as many or more times and half the audience saw them as many or fewer times.) These numbers can be roughly compared with the estimates of potential exposure generated from the GRP data previously reported. The median recall of 11 ads per month for youth and 10 ads per month for adults translate into around 2.5 exposures per week. The general exposure measures are likely to include spill, while the targeted GRP-based estimates do not, which would suggest that the

⁴ Each general recall question had answer categories shown below. Each category was recoded as indicated. The recoded answers were then summed to get the rough estimate of total recalled exposure.

Answer Category	Recoded times per month
Not at all	0
Less than one time a month.....	0.5
1 to 3 times a month	2
1 to 3 times a week.....	8
Daily or almost daily.....	30
More than 1 time a day	45

GRP-based estimates should be lower than the general recall measures. Balancing that, the targeted GRP-based estimates were based on an arithmetic average, the mean, rather than a median, the 50th percentile score, and means are likely to be inflated compared to medians. Making the rough comparison, despite these somewhat counterbalancing inconsistencies, general exposure measures are similar to the GRP estimates, which were 2.3 and 2.5. For more comparisons of NSPY data with Ogilvy GRP data, see Appendix C.

Table 3-D
Overall recalled exposure to anti-drug ads across all media

	Parents	Youth
Less than one exposure per month	10%	7%
1-3 exposures per month	22%	23%
4 or more exposures per month	68%	70%
Median exposures per month	10	11

- **Each channel produced different recalled exposure.** Table 3-E displays reports of weekly exposure to each of the channels. Around half of the youth and parents recall seeing radio or television ads weekly, about one-quarter recall print or outdoor advertising, and fewer than one-fifth recall weekly exposure to movie or video messages.

Table 3-E
Recall of anti-drug advertising in general by channel

Group	Percent who recall seeing or hearing ads at least weekly			
	TV & radio ads	Newspaper & magazine ads	Movie theatres & video rental ads	Billboard and other public postings
9 to 11	44.4	18.8	9.2	23.7
12 to 13	52.7	25.3	7.8	26.8
14 to 18	55.2	24.4	6.3	28.3
Parents	51.1	21.5	3.1	23.1

- These relative estimates are generally consistent with the focus of GRP purchases, with 83 percent of youth purchases and 49 percent of parent purchases in radio and television. It is of some interest that youth and parents report comparable exposure to outdoor media, although only parents were targeted through that channel. Clearly, youth are also aware of advertising through this channel.
- **Across the channels, there is roughly the same pattern of claimed weekly recall of exposure within the major subgroups examined.** (However, the lack of interpretable differences among some subgroups may reflect the relatively small

effective sample sizes available for analysis after only one wave of data collection). (See Detail Tables 3-4-1 and 3-4-2.)

- Recalled exposure to television and radio advertising, based on these general measures, is fairly similar across most subgroups examined.
 - For newspapers and magazines, white parents had lower recalled exposure than African American and Hispanic parents.
 - For movie and video ads, there was greater recall for 9- to 11-year-old males, African American, and urban youth than among others. Among 12- to 13-year-olds, those differences were less, and among 14- to 18-year-olds they had essentially disappeared. For parents, differences were again quite sharp, although not always consistent with youth differences, with African American and Hispanics, less well-educated respondents and urban parents reporting higher recall. However, no group of parents reported more than 10 percent weekly recall of movie and video ads.
 - Outdoor media were more frequently recalled by urban parents (30% seeing such ads each week) than suburban or rural parents (around 20% weekly recall). African American and Hispanic parents and older teens showed an advantage over white parents and older teens.
- The NSPY television and radio ad exposure responses are a little higher than the responses from the most recent MTF surveys. The general advertising exposure measure used for NSPY is identical to the measure used for many years for estimating exposure to radio and television advertising in the MTF surveys. The most recent published data for this measure are from spring 1998, for eighth, tenth, and twelfth grade respondents, which precedes the initiation of the national Media Campaign. Compared with the MTF data from 1996-1998, our respondents, mostly interviewed in the first half of 2000, report somewhat higher weekly exposure to television and radio advertising. One interpretation of this result is that the Media Campaign positively influenced this recall (Table 3-F). However, there are other plausible explanations for the inconsistency across surveys. While the questions are identical, the contexts of the questions are different (different surrounding questionnaire, school versus home interview, paper-and-pencil versus laptop administered). These may limit comparability given that there are no overlapping periods of measurement.

Table 3-F
Recall of television and radio anti-drug ads, MTF and NSPY by age

Group	Percent who recall seeing or hearing ads at least weekly			
	TV & radio ads MTF 1996	TV & radio ads MTF 1997	TV & radio ads MTF 1998	TV & radio ads NSPY 1999-2000
Eighth grade	55.9	56.8	53.4	59.2
Tenth grade	57.0	53.9	52.6	60.0
Twelfth grade	47.5	44.0	40.1	51.6

The general recall measures, as noted, provide a useful overall sense of parent and youth exposure across each of the major Media Campaign channels. They correspond remarkably well to previously reported media purchase data. They are particularly useful for comparisons among channels and will be useful in future reports for comparisons over time. They also provide confirmation that there is some spill of GRPs, in that ads targeted to a particular audience were probably seen by another group. This is clearest for youth reports of exposure to outdoor media, where recalled exposure is comparable to parents' recall, even though few youth-specific outdoor media buys were made.

However, these questions are quite general and depend on respondents' ability to recall and summarize exposure without very much in the way of prompting information. To improve the precision of the estimates, the chapter now turns to evidence about the aided recall of specific television and radio ads.

3.2.2 Aided Advertising Recall

Respondents were shown up to four television ads and up to three radio ads at full length on their laptop computers. Each respondent was shown ads that were broadcast nationally in the 2 calendar months previous to the interview. Each respondent was asked to say whether they had ever seen the ad, how often they had seen the ad in recent months, and how they evaluated the ad. If there were more than four television or radio ads that were being broadcast during that 2-month period, each respondent was shown a randomly chosen subset of all the eligible ads. The scores on the randomly not-shown ads were imputed on the basis of other information. The imputation permitted researchers to estimate the total recalled exposure for each respondent for all the ads that were being shown for the 2 months prior to the interview as described in Section 2.2.5. In addition to ad-specific and overall ad recall estimates, subsets of ads were added up that addressed a single campaign platform to estimate overall recalled exposure to each platform.

The validity of recall data was a concern in that respondents who did not want to admit to forgetfulness or simply wanted to be agreeable might claim to have seen an ad even if they had not. If all claims were taken at face value, in other words, the exposure may have been overestimated. So, each respondent was asked whether he or she had seen one of three ads (otherwise known as "ringer ads") that had never been broadcast. That gave a benchmark to assess true exposure.

The evidence for validity of the measures is strong. The specific television ad recall measures tracked the GRP data closely, ad by ad, for youth. The average ad earned about 50 GRPs per week it was on the air (equivalent to an expected exposure of 0.5 exposures per week); the average youth respondent recalled about 0.50 exposures per week a recalled ad was on the air in the 60-day period before the interview. The correlation between the GRPs purchased per week for an ad and the recalled exposure for that ad was .81. The average ad was recalled by 47 percent of youth respondents; while ringer ads were falsely recalled by only 11 percent of youth. This validity information is described in detail in Appendix C.

Since the Media Campaign does not expect that effects come from individual ads, but from the cumulative influence of multiple ads, the focus here is on describing exposure in terms of accumulated recall across all ads seen by a youth or parent and ads within a platform.⁵

Television Recall

More than 50 percent of the total GRPs purchased for youth were obtained through television (including network TV, which includes cable TV; spot TV; and in-school TV). Each week, the Media Campaign purchased about 119 television GRPs, indicating that the average youth respondent should have been exposed to 1.19 television ads per week. For parents the television advertising budget was smaller, enough to produce 55 GRPs per week, or 0.55 exposures for the average adult. How do those numbers compare with evidence about youth and parental recall of the specific ads that they were shown?

The TV ads developed for the Media Campaign were targeted at either youth or at parents. Within these target groupings, there were ads developed specifically for Spanish-speaking audiences and for African American audiences, in addition to those developed for general English-speaking audiences. In selecting ads to play for NSPY respondents, there was strict segmentation by the parent-youth dimension and by language. In other words, youth-targeted ads were never shown to parents and vice versa. This means that youth-parent “spill” has not been measured. Spill is the phenomenon of ads targeted to one group being watched by members of another group. Similarly, a person who speaks only English or only Spanish was never shown an ad in the opposite language. Bilingual English-Spanish speakers were shown both sets of ads, and special efforts were taken to be sure that African American respondents had targeted ads played for them.

There were more ads available than what could be shown to each youth respondent within a reasonable time. The average number of eligible ads that had been on the air at least 1 day in the 60 days leading up to a youth interview was 3.35. The actual number shown during the interview for aided recall averaged 2.91. Each respondent was asked about how many times

⁵ However, note that Detail Tables 3-1-1, 3-1-3, 3-2-1, and 3-2-3 do provide information on average recall of individual ads. Caution should be used in interpreting these tables because they do not reflect accumulated recall and because the GRPs purchased for each ad varied considerably.

he or she had seen each ad in “recent months.” Imputation was used to fill in reasonable projections for the remaining ads. The results were then recoded and summed across ads.⁶

- Eighty-two percent of youth recalled seeing at least one of the ads that had been playing in the previous 60 days.** The total number of times that a respondent had seen all the ads that were on the air in the 60 days before the interview are presented in Table 3-G. About one-fifth claimed to have seen no ads and two-thirds saw all TV ads combined 8 times or fewer, approximately equivalent to one ad per week. At the other end of the distribution, 12 percent recalled seeing ads 2 or more times per week over the recall period.

**Table 3-G
Respondent viewed ad in recent months**

Number of times TV ads seen in : “recent months”	All youth	Parents
0 times (0 times per week)	18.4%	33.9%
.01 to 4 times (<0.5 times per week)*	32.0%	28.6%
4.01 - 8 times (.5- <1.0 times per week)	16.2%	12.7%
8.01- 12 times (1.0-<1.5 times per week)	11.1%	7.2%
12.01-16 times (1.5-<2 per week)	10.1%	7.2%
16.01 or more times (2+ times per week)	12.3%	10.4%
Mean number of times all ads seen	7.5	6.1
Median number of times all ads seen	4.0	3.0

*Times per week are estimated assuming that “recent months” is equivalent to 2 months.

⁶ Recoding of NSPY ad recall data

Question: Here is another TV ad. Have you ever seen or heard this ad?	[If yes,] In recent months, how many times have you seen or heard this ad?	Recoded Response
No		0
Don't know		0.5
Yes	Not at all	0
Yes	Once	1
Yes	2 to 4 times	3
Yes	5 to 10 times	7.5
Yes	More than 10 times	12.5

- **The median number of recalled viewings of youth-targeted ads by youth was 4 over recent months or about 0.5 times per week.** The mean was considerably higher at 7.5 or about 0.9 exposures per week. The difference between the mean and the median is consistent with a pattern of uneven distribution of exposure where some youth saw the ads many times, while others saw the ads much less frequently or not at all.
- **9-11 year olds reported less exposure to television ads than did older youth.** The median response over recent months was 3 for the 9- to 11-year-olds and 6 for the 12- to 13- and 14- to 18-year-olds (see Detail Table 3-1-2).
- **About two-thirds of parents did recall exposure to at least one parent television ad.** About 25 percent recalled seeing an average of at least one ad per week in recent months, while 10% recalled seeing ads twice a week or more.
- **The median number of viewings of parent-targeted ads in recent months by parents was 3 or about 0.35 per week.** As with youth, the mean was considerably higher at 6.1 over recent months indicating an uneven distribution where some parents saw the ads many times, while others saw them much less frequently or never saw the ads.

Radio Recall

The Media Campaign complemented its purchases of television time with purchases of radio time. For youth that included 68 GRPs per week and for parents 76 GRPs. As previously noted, up to four radio ads were played for each parent or youth between 12 and 18 years of age. Respondents were asked whether they had ever heard each ad, and how often, following the format for the television ads.

Only those ads that were original to radio were played to NSPY respondents as part of their interviews. Because some of the radio ads broadcast were essentially soundtracks from television ads, respondents would be unable to recall whether they had heard or seen an ad on radio or television if they had been exposed to it through both media. Their responses to the questions about television ads, asked about first, would likely reflect their total exposure through both channels. If the television version of the ad was played first, and respondents were asked questions about that, and then shortly afterwards they heard the soundtrack of the ad, and were asked questions about recall all over again, then respondents would be confused. Therefore, all ads duplicated across television and radio were excluded from the sample of radio ads.

The selection of radio-only ads was less an issue for parents than for youth. Almost 90 percent of the total radio GRPs purchased for adults were for radio-exclusive ads. On the other hand, only 20 percent of the GRPs purchased for radio for youth were radio-exclusive ads. Since the analysis of radio advertisement recall for youth is muddled as a result of the substantial overlap in ads across media, only the recall data for parent radio ads is presented.

- **Average recall for radio-exclusive campaign ads was low among parents.** Each parent was eligible to listen to about 2.9 radio ads that had been in the broadcast mix

in the 60 days prior to the interview. About 48 percent of parents had heard at least one of the radio ads, as Table 3-D outlines. (Detail Table 3-3-2 provides more detail by ad platform).

Table 3-H
Average recall for radio-exclusive campaign

Number of times radio ads seen in “recent months”		Parents
0 times	(0 times per week)	51.7%
.01 to 4 times	(<0.5 times per week)*	28.8%
4.01 - 8 times	(.5- <1.0 times per week)	9.7%
8.01- 12 times	(1.0-<1.5 times per week)	3.6%
12.01-16 times	(1.5-<2 per week)	3.1%
16.01 or more times	(2+ times per week)	3.1%
Mean times all ads seen		2.9
Median times all ads seen		0

*Times per week are estimated assuming that “recent months” is equivalent to 2 months.

3.3 TELEVISION AD EVALUATION

All respondents were asked to evaluate a subset of the television ads they had seen. The goal was to assess how individuals interpret and evaluate ads from the Media Campaign when they encounter them. In addition, these data will be used in future reports to see whether the evaluative response to the ads affects respondents’ susceptibility to Media Campaign effects. Researchers will be able to examine whether individuals who are less convinced by or more skeptical of the ads are less likely to avoid initiation or continuation of drug use.

The three positively phrased questions (this ad got my attention, was convincing, said something important to me) were summed to create a mean positive evaluation score for each ad and for each respondent. The single skeptical item (whether the ad exaggerated the problem) was analyzed separately. It was recoded so a higher score was less skeptical. Both positive and negative responses were placed on a scale from -2 to +2 with 0 representing a neutral response.

- **Overall, youth and parents tended to rate television ads they were shown favorably.** (See Detail Tables 3-2-1 and 3-2-4). On a five-point scale ranging from -2 to 2, mean responses from the four groups of youth interviewed (9- to 11-year-olds, 12- to 13-year-olds, and 14- to 15-year-olds, and 16- to 18-year-olds) ranged from 1.0 down to 0.6, with 1.0 representing an average ‘agree’ response to the questions. The oldest youth were the least accepting of the ads, although still above the neutral position. The responses to the “exaggeration” question were consistent, with a tendency for youth respondents to be on the disagree side of neutral, and with younger children more likely to deny that the ad exaggerated. See Table 3-I.

- **Among parents, the mean favorable response to the ads was 1.1 using the same five-point scale.** This was more favorable than the youth response, and particularly more positive than the 16- to 18-year-olds. Parents also tended to disagree with the statement that the ad exaggerated the problem. (See Detail Table 3-2-4.)

Table 3-1
Television ad evaluation among youth and parents

Age	Mean favorable evaluation	Disagree that the ad exaggerated the problem
9-11	0.9	NA
12-13	1.0	0.8
14-15	0.7	0.8
16-18	0.6	0.6
Parents	1.1	0.9

NOTE: Scale runs from +2 to -2 with + 2 most favorable.

Most subgroups of the youth population responded fairly similarly to the ads, with three striking exceptions. The first was the tendency for older students to be more skeptical, the age effect already described. The second difference was between those who were high and low sensation seekers. The final difference was between those who had prior experience with marijuana and those who didn't. (See Detail Table 3-2-1.)

- Among 12- to 18-year-olds, those who report high sensation-seeking tendency reacted more negatively to Media Campaign TV ads, on average, than adolescents who were relatively lower in sensation-seeking. At the same time, high sensation-seeking adolescents also were more likely to agree that Media Campaign TV ads exaggerated the problem they depicted.
- Among 14- to 18-year-olds, occasional marijuana users evaluated Media Campaign TV ads more negatively than did non-users in that age group. The mean rating across all ads was 0.3 for occasional users and 0.8 among non-users. Occasional users among 14- to 18-year-olds also were more likely to report that a Media Campaign TV ad, on average, exaggerated the problem than were non-users (0.8 for non-users versus 0.4 for users), although both groups on average were on the 'did not exaggerate' side of the scale.

While many demographic groups of parents largely agreed in their average assessment of Media Campaign TV ads, some differences did arise among various groups. (See Detail Table 3-2-4).

- Female parents were somewhat more favorable in their response to Media Campaign TV ads.
- Hispanic parents were somewhat more favorable in their response to Media Campaign TV ads than were white or African American parents.

3.4 INTERNET USE AND ENCOUNTERS WITH DRUG INFORMATION ON-LINE

Youth and parents were asked about their experience with the Internet and then specifically about their recall of visits to sites with pro or anti-drug messages. Results from Wave 1 of NSPY suggest at least two striking ideas about the Internet. First, it appears that the vast majority of adolescents now have at least minimal contact with the Internet, as is described in Table 3-J (and Detail Table 3-5-1). Second, despite this wide diffusion of access to the Internet, most youth currently do not encounter information related to drugs on line. While one might be tempted to suggest that the Internet offers a useful way to engage youth in reference to drugs, the present data suggest that the Internet does not currently produce much total exposure to anti-drug messages. Barely 10 percent report a visit to an anti-drug site in the previous 6 months. Among 14- to 18-year-olds the proportions visiting pro-drug sites is about the same as the proportions visiting anti-drug sites.

**Table 3-J
Internet use and encounters with drug information on-line**

Group	Internet activity during previous 6 months		
	% using Internet at least a few times	% visiting anti-drug Internet site among all youth/parents	% visiting pro-drug Internet site among all youth
12 to 13	79.2	9.3	3.3
14 to 18	84.7	10.2	7.6
Parents	60.4	5.5	N/A

Youth

- More than 80 percent of adolescents report at least minimal contact with the Internet in the past 6 months. See Table 3-J and Detail Table 3-5-1. This pattern is not simply an artifact of widespread occasional or minimal use. Roughly half of adolescents used the Internet at least weekly in the past 6 months, and almost one-third of 14- to 18-year-olds used the Internet every day or almost every day.
- Strikingly, there is no detectable gender gap in reported Internet access or contact. Roughly equal proportions of male and female adolescents report various levels of use in the past 6 months. See Detail Table 3-5-1.
- There does appear to be a discrepancy in use among various racial groups. A higher proportion of white adolescents used the Internet in the past 6 months than did African American or Hispanic adolescents, a difference that persists both in terms of minimal use and at the extreme of daily or almost daily use. See Detail Table 3-5-1.
- Socioeconomic factors, such as parents’ education, certainly appear to divide youth in terms of their Internet use. Among youth with at least one parent who had not completed high school, roughly 75 percent had used the Internet at least a few times in the past 6 months. In contrast, among youth with at least one parent who completed college, roughly 95 percent reported such use.

- Compared with their low sensation-seeking peers, a slightly higher percentage of high sensation-seeking 14- to 18-year-olds report having had at least minimal contact with the Internet in the past 6 months. Approximately 88 percent of those high in sensation-seeking report such use, whereas 80 percent of those low in sensation seeking do so. This finding is perhaps unsurprising if we think of the Internet as a source of relatively novel stimuli. See Detail Table 3-5-1.
- Only 10 percent of youth recall even one visit to an anti-drug site. Both sensation-seeking groups are about equally likely to visit anti-drug Internet sites. However, high sensation-seeking adolescents are more likely to visit Internet sites supportive of drug use. Approximately 10.3 percent of high sensation-seeking 14- to 18-year-olds reportedly visited such pro-drug sites in the past 6 months, whereas only 3.6 percent of their low sensation-seeking counterparts did so. See Detail Table 3-5-1.

Parents

- In terms of proportion using the Internet at least minimally in the past 6 months, parents, as a group, appear to be lagging behind youth. Only approximately 60 percent of parents report such use, compared with almost 90 percent of youth.
- Among parents that do report Internet use, however, many are engaged with the technology on a regular basis. Roughly 44 percent of all parents report having used the Internet at least weekly in the past 6 months.
- Among parents, there are wide disparities in use according to their completed levels of education. Roughly 87 percent of parents who are college graduates report any use of the Internet, whereas only 26 percent of those parents with less than a high school diploma claim such recent use.
- Patterns among parents overall are similar to youth in terms of interaction with information about drugs on line. Only 5.5 percent of parents who use the Internet at all report visiting an Internet site with anti-drug information in the past 6 months. Education is a telling variable in this regard, as well, however. Approximately 7 percent of college graduates claim visits to sites with anti-drug information, whereas only 2.5 percent of those with less than a high school diploma report such visits.
- Approximately 7 percent of parents who use the Internet also reported having visited an Internet site that included information about parenting skills. Visits to parenting sites also differ by parents' education level: among Internet using parents, approximately 10 percent of parents who are college graduates reported such a visit in the past 6 months, whereas only 2 percent of parents with less than a high school diploma did so.

4. OTHER SOURCES OF DRUG INFORMATION AND EDUCATION

The Media Campaign is not the only source of drug information reaching the population. In this chapter and the next, other sources of drug education and information, for both youth and parents, are described. Young people were asked whether they received drug education in school and outside of school, how frequently they engaged in drug-related conversation with parents and friends, and about the content of those conversations. Parents were asked whether they knew of anti-drug programs in their community, whether they had heard drug-related speeches or laws proposed by public officials, and whether they had heard of police crackdowns on drug use or sales within their neighborhood. Both parents and youth were asked whether and how frequently they were exposed to anti-drug stories through a variety of media channels.

These “other sources” of information provided context for the campaign in two ways. First, they provided an estimate of pre-existing levels of information and communication about drug use. This will make it possible to understand whether the Media Campaign represents a minor, moderate, or a major increment to available information.

Second, they provided a baseline to assess changes in the anti-drug involvement of various public and private institutions. While advertising is the cornerstone of the Media Campaign, non-advertising outreach and partnership with national and local organizations form another important component of Media Campaign activity. The Media Campaign has committed substantial resources to working with youth and other organizations and to working with the entertainment industry and news media to increase anti-drug activities, ensure accurate portrayals of drug use in entertainment programming, and to frame youth drug use as an important issue. If these efforts are successful, schools and other organizations should offer more anti-drug programs, and the media should cover the issue of drug use among youth more heavily and more accurately.

The information in this and the next chapter provide a sense of existing levels of drug-related information, communication, and activity. In this chapter, youth sources of drug education and information are examined. In Chapter 5, parental sources of information and parental involvement in anti-drug programs are assessed.

4.1 ANTI-DRUG EDUCATION

- **Most youth report receiving anti-drug education in school during the past year and in previous years.** All youth were asked, “Have you ever attended any of the following drug education classes or programs in school: A special class about drugs that included several sessions?” Nearly 85 percent of children 12 or 13 years old responded affirmatively to this question, with 76 percent of all children 12 or 13 saying they attended such a program within the past year. Past year in-school drug education declines with age, but even among youth aged 16 to 18, 60 percent say they attended in past year. These results are summarized in Table 4-A, and presented in Detail Table 4-1.

Table 4-A
Attendance at in-school anti-drug education programs by age of youth

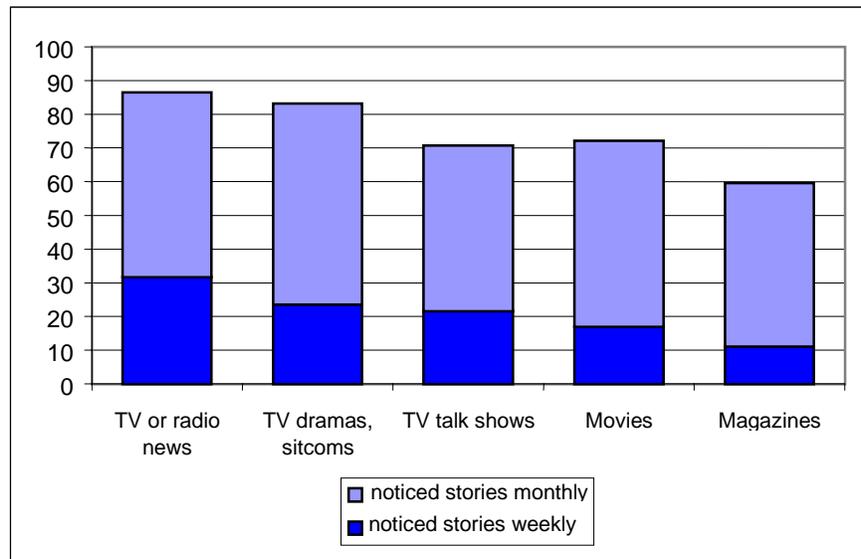
Age group	Proportion ever attending (%)	Proportion attending in the past year (%)
9-11	72.2	55.3
12-13	83.9	75.9
14-15	75.7	64.8
16-18	76.8	59.7

- **However, many fewer youth report that their involvement with extracurricular activities has led to anti-drug education.** Eighty-eight percent of all youth report that they are currently involved with at least one extracurricular activity (music, dance or the performing arts, athletic teams, boys or girls clubs, religious youth groups, clubs or volunteer organizations) either in or outside of school. However, when this extracurricular activity takes place outside of school, oftentimes it does not involve anti-drug education. Only 12 percent have ever participated in anti-drug programs or discussions outside of school, and only 8 percent have participated in such programs within the past year (Detail Table 4-1).

- **Youth see and hear a good deal about drug use among young people in the mass media.** More than 95 percent of all youth reported at least monthly exposure to media stories about young people and drug use.¹ The media channels respondents were asked about were: television and radio news; television movies, sitcoms and dramas; television talk shows; rental and theatre movies; and magazines. More than half of all youth noticed media coverage about drug use among young people at least once a week on at least one of these media channels. About one-third noticed such stories weekly on television or radio news, and between 22 percent and 24 percent recalled such stories appearing weekly in television movies, sitcoms, or dramas, and on television talk shows. Fewer young people noticed such stories appearing weekly in movies or in magazines (Detail Table 4-4).

¹ See question in the Teen questionnaire.

Figure 4-A
Noticed stories about drugs and youth in recent months



4.2 TALK WITH PARENTS OR FRIENDS ABOUT DRUGS

- Most older youth have conversations about drugs, and many of them have such conversations frequently. Drug conversations are somewhat less frequent among younger children.** About 90 percent of youth aged 12-18 report having had at least one conversation about drugs with parents or friends in the previous 6 months. More than half of teens in this age group report having such conversation four or more times, although fewer younger children report this frequency of conversation. Still, conversation about drugs is even common among children. About 84 percent of children aged 9-11 say they have been involved in a conversation about drugs at least once in the past 6 months. Just over 40 percent report having had drug-related conversation four or more times during that period (Table 4-B).

Table 4-B
Drug conversation with parents or friends by age group

Age group	Percent with any conversation in past 6 months	Percent with four or more conversations in past 6 months
9-11	83.6%	40.2%
12-13	88.7	45.9
14-15	91.7	60.7
16-18	91.7	54.5

- Youth talk with parents about drugs when they are younger, but as they mature, they talk more about drugs with friends.** Among children aged 9-11, 35 percent report having had four or more conversations about drugs with their parents in the past 6 months. About 22 percent of teens aged 16 to 18 report having this many drug-related conversations with parents. Conversely, while only 15 percent of children aged 9 to 11 talk frequently with friends about drugs, nearly half of older teens report having had four or more conversations about drugs within the past 6 months (Table 4-C, further detailed in Detail Tables 4-2-1 and 4-3).

Table 4-C
Frequent conversations with parents and friends by age

Age group	Percent with four or more conversations in past 6 months with parents	Percent with four or more conversations in past 6 months with friends
9-11	34.9%	15.1%
12-13	29.7	22.0
14-15	28.3	42.2
16-18	21.7	46.4

- The heaviest talkers are drug users.** Youth who used marijuana in the past year are much more likely than non-users to have conversations about drugs, and this effect increases with age. Among adolescents aged 12 to 13 who used marijuana, 61 percent were involved in conversation about drug use four or more times in the previous 6 months. Among older marijuana users (14-18 years) 84 percent engaged in drug-related conversation with this frequency. Conversation about drug use is less frequent among non-users. In general, just over 40 percent of non-users from each age group became involved in conversation about drugs four or more times in the previous six months. The exception is 14- to 15-year-olds, more than half of whom report frequent conversation about drug use (Table 4-D).

Table 4-D
Percentage who had four or more conversations with parents or friends about drugs in the previous 6 months, by marijuana use in past year and age group

Age group	Use of marijuana in past year (%)	No use of marijuana in past year (%)	Difference (%)
9-11	---	40.1	---
12-13	61.2	45.5	15.7
14-15	83.3	57.7	25.6
16-18	84.6	42.6	42.0

- Older youth who are sensation seekers have more conversations about drug use than those who are not sensation seekers. Among 9- to 13-year-olds, sensation seeking appears to have a much smaller association with conversation.** Among 14- to 18-year-olds who are sensation seekers, more than 60 percent report that they have engaged in four or more conversations about drug use in the past 6 months. Within the same age group, the responses of those who are not sensation seekers are less common. The pattern among low sensation seekers is similar to the pattern previously reported for those who did not use marijuana in the past year. About 40 percent of the 9- to 13- and 16- to 18-year-old low sensation seekers report frequent drug conversations, although the 14- to 15-year-olds were more than 10 percent higher (Table 4-E).

Table 4-E
Proportion within each age group who had four or more conversations about drugs in the previous 6 months, by sensation seeking

Age group	High sensation seekers (%)	Low sensation seekers (%)	Difference (%)
9-11	42.6	38.6	2.0
12-13	48.6	43.3	5.3
14-15	66.5	54.1	11.4
16-18	61.2	41.7	19.5

- In the course of conversation about drug use, young people of all ages discuss bad things that happen because of drugs. But, many older youth also speak positively about drugs.** Youth aged 12-18 were asked whether three particular topics were the subject of their conversations with friends about drugs. Around 50 percent of all young people reported talking with their friends about “bad things that happen if you use drugs” within the past 6 months, and around one-third say they talked about “specific things I could do to stay away from drugs.” However, saying positive things about drugs appears to be partly a function of age. While few 12- to 13-year-olds report engaging in conversation about how “marijuana use isn’t so bad,” nearly 23 percent of 14- to 15-year-olds, and 32 percent of 16- to 18-year-olds have been involved in such a conversation. This contrast is sharpest if one compares the ratio of pro versus anti-drug conversation at each age level. For 12- to 13-year-olds, conversations with the theme “marijuana use isn’t so bad” occur at about one-fifth the rate as conversations about “bad things that happen if you use drugs.” Among 16- to 18-year-olds that ratio is close to three-fifths. As children mature, the communication environment around them is changing; condemnation of drug use is no longer universal (Table 4-F and Detail Table 4-2-2).

Table 4-F
Topics of conversation with friends by age group

Age group	Specific things I could do to stay away from drugs (%)	Bad things that happen if you use drugs (%)	Marijuana use isn't so bad (%)
12-13	33.3	46.2	10.3
14-15	31.1	55.1	23.4
16-18	28.5	54.1	32.4

4.3 RECALL OF ANTI-DRUG ADS

- Around one-half of the youth report conversations with parents or others about anti-drug ads.** Thirty-five percent of all youth report having a conversation about the anti-drug ads with their parents, and 44 percent of 12- to 18-year-olds recalled having such a conversation with friends or others (9- to 11-year-olds were asked only about conversation with parents). As with other drug-related conversations with parents, these decline sharply with age; although 50 percent of 9- to 11-year-olds report having a conversation with parents about the anti-drug ads, only 21 percent of 16- to 18-year-olds report such a conversation. About 55 percent of 12- to 18-year-olds report having a conversation about the ads with a parent, with someone else or both (see Detail Table 4-3). High sensation seekers aged 12-18 years were much less likely to talk with parents about the ads than were low sensation seekers.

4.4 CONCLUSIONS

Clearly, aside from the exposure produced by deliberate campaign efforts, there is a good deal of background exposure to drug-related information. The information presented in this chapter provides an estimate of the amount and nature of drug-related messages to which children and teens are exposed and by what channels this exposure occurs. Formal drug education occurs almost universally within the school system and rarely outside of it. Drug use among youth is frequently referred to in the mass media. While nearly all young people talk about drugs, prior marijuana use and age increase the likelihood of engaging in frequent drug-related conversation. Older teens are exposed to positive as well as negative messages about drugs, through conversation with friends.

In the previous chapter, it was noted that Internet use was not recalled by many respondents as a source of drug information. Recall of pro- or anti-drug messages in music was not measured, but that may also be a source of background information for some youth. (In a recent study, Roberts et al. (1999) found that about 18 percent of their sample of 1996 and 1997 songs included references to illicit drugs, with 44 percent of those, or about 8 percent of all songs, providing what could be interpreted as one pro-drug message—mentioning intoxication or being high. While 63 percent of rap songs referred to illicit drugs, around 10 percent or fewer songs of other formats had such references.)

The results presented here serve as a baseline to measure changes in the tendency for youth to be exposed to background information about drugs. In subsequent waves it will be examined whether Media Campaign efforts to stimulate the anti-drug efforts of institutions (the schools, the press, the entertainment industry, the voluntary organizations) produce enough additional activity that youth notice them and report increases in their exposure to anti-drug information. Increases may be seen in the proportion of young people who receive drug education outside of school. It may also be possible, using this data, to determine whether the campaign increased talk among young people, and importantly, whether it increased talk about negative consequences of drug use or decreased talk about how “marijuana isn’t so bad.”

Separately, the information presented here will help determine in what context the Media Campaign is most successful. Does exposure to the Media Campaign work equally for youth who have many other sources of anti-drug information and for youth who have fewer sources? Does the Media Campaign reinforce the messages that young people are getting from their parents, or does it serve as a primary message source for youth who lack information about drug use and consequences of drug use?

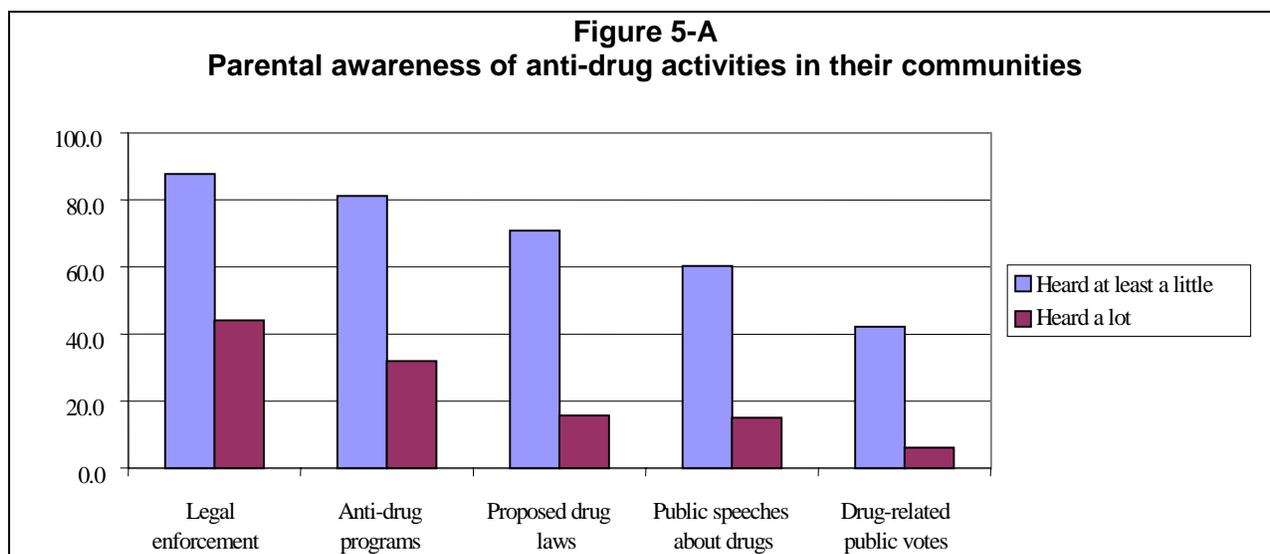
5. PARENTS EXPOSURE TO NON-CAMPAIGN ANTI-DRUG OR PARENTING MESSAGES

This chapter presents a parallel analysis for parents. Clearly, parental exposure to drug-related messages is not left entirely to Media Campaign efforts. This chapter examines additional sources of drug education and information for parents. Parents were asked about drug prevention efforts in their communities, including proposed drug laws and enforcement of existing laws, speeches by public officials and existence of anti-drug programs. Also asked was how often they show drug-related stories in the media and their involvement in anti-drug or parental effectiveness programs.

This information serves as a baseline, making it possible to determine to what extent the Media Campaign, including the complementary activities meant to put the Media Campaign's issues on the public agenda, have increased parental awareness of anti-drug activity in communities, increased the presence of and resulting awareness of drug-related stories in the media, and encouraged parents to become involved with anti-drug and parenting programs. However, there is already a good deal of exposure to anti-drug messages through some of these channels.

5.1 ANTI-DRUG ACTIVITY AWARENESS IN COMMUNITY

- **Parents report high basic awareness of anti-drug activities taking place in their communities.** Almost 90 percent of all parents report having heard at least a little about police crackdowns on drug use or drug sales in their community within the past year. On average, more than 80 percent know of anti-drug programs in schools or community centers. Political focus on drugs is less prominent than legal enforcement or prevention programs but is also high; 70 percent of all parents heard at least a little about drug-related laws proposed within the year, and 60 percent reported hearing public officials speak about drugs (see Detail Table 5-2). However, if most respondents have basic awareness, that is they have “heard a little,” many fewer report having “heard a lot” (Figure 5-A). For example, only 15 percent, had heard a lot about “speeches about drugs by public officials.” This suggests that exposure to drug-related issues is not at a ceiling. There is some possibility for intensification of public awareness of these activities.
- **Although awareness of anti-drug activities is high across all subgroups, education played a role in awareness of anti-drug programs.** While 90 percent of those with a college education knew at least a little about anti-drug programs within their community, only 68 percent of those who did not graduate from high school knew of such programs. This difference may reflect differences in availability of such programs across socioeconomic groups, but this does not seem likely, given that the youth reported almost universal attendance at such programs in schools. It may more simply reflect differing engagement with school activities, as a function of parental educational level.



5.2 ANTI-DRUG ACTIVITY AWARENESS IN MEDIA

- Parents often see drug themes presented in the media.** Clearly themes of drug use among youth are close to inescapable in the media. More than 90 percent of parents report at least monthly exposure and 65 percent report weekly exposure to at least one source dealing with the issues of youth and drugs. News, including from television, radio, and newspapers, are all substantial sources of such information, but other sources clearly treat the issue often as well (Table 5-A). About half of all parents report having seen or heard stories about drug use on television or radio news programs at least weekly in recent months. One-third noticed such stories appearing weekly in newspapers. Drug themes are also common in television entertainment programs; almost one-third of all parents noted at least weekly mention of drug use in TV movies, sitcoms, or dramas, and nearly one-quarter saw drug-related stories on television talk shows or television news magazines. Forty-four percent of parents were exposed to such messages weekly through at least two media channels, and 27 percent through at least three channels.

Table 5-A
Parents exposure to monthly and weekly media stories about drugs

	Monthly or more often	Weekly or more often
TV or radio news	82.6%	51.0%
TV dramas, sitcoms	68.3	30.4
Newspapers	65.0	33.1
TV talk, magazine shows	58.8	23.8
Radio (not news)	32.7	13.7
Magazines	32.0	8.2
Movies	31.8	9.6
At least one source	91.4	64.8

NOTE: Information about weekly exposure to drug stories can also be found in Detail Table 5-1.

5.3 ATTEND DRUG PREVENTION PROGRAMS

- **Many parents report having attended drug prevention or parent effectiveness programs within the previous 6 months.** The great majority of youth reported contact with drug education in the schools, with more than 60 percent attending such programs in the past year. Parents don't attend as often as their children do, but many parents say they are involved either in drug prevention programs or in more general parent effectiveness programs. Twenty-six percent reported attendance at a drug abuse prevention activity in the previous 6 months. A major theme of the parent Media Campaign is to encourage parents to develop specific parenting skills monitor their children, talk with them, and discipline them appropriately, including praising and rewarding them. Slightly more than one-fourth (29%) said they attended a parent effectiveness program in the previous year. Nearly 43 percent of parents said they had attended either drug prevention or parental effectiveness programs, with 12 percent reporting that they attended both. These reports suggest that a substantial minority of parents are already involved in community programs designed to improve their parenting skills, and/or to specifically prevent drug use among their children. In subsequent waves of data collection it will be possible to test whether the Media Campaign is successful in stimulating further involvement in these activities.
- **Gender, race, education, region, urbanicity, and age of child all have very little association with parents recall of drug themes in the media and their attendance at drug abuse prevention and parental effectiveness programs.** Detail Tables 5-2-2 and 5-3 show this general lack of differentiation by demographic characteristics of parents and age of child. The only disparity is for the percentage of African American, white, and Hispanic parents who attend drug abuse prevention programs when their children are young. When their children are aged 9-11, 40 percent of African American parents attend drug abuse prevention programs, compared with 27 percent of white parents, and 30 percent of Hispanic parents. By the time their children are aged 12-13, this gap has closed.
- **Parents who live in the West and Urban have heard more about drug-related propositions or referenda on ballots for public voting (Detail Table 5-2-1.)** More than 50% of parents who live in the western part of the U.S. reported hearing about such referenda; less than 40% of parents in the rest of the country reported hearing such news. Also 48% of urban parents compared to 39% of town and rural parents were aware of public discussion of such issues.

In general, independently of exposure to Media Campaign materials, parents are often exposed to messages about drugs. They are very aware of drug activities taking place in their communities, including police crackdowns on drug use and sales, proposals for drug-related laws, and the existence of drug abuse prevention programs. Most parents report having seen stories about youth and drug use in the media every week. Many parents are already involved with community drug prevention or parent effectiveness activities, suggesting that they understand their children are at risk for drug abuse.

6. MARIJUANA AND INHALANT USE AMONG YOUTH

The goals of the Media Campaign are to influence levels of trial and regular marijuana and inhalant use and eventually reduce all illicit drug use. The best measures of changes in these behaviors are found in the sets of surveys that the U.S. government has sponsored for a very long time: the Monitoring the Future Study (MTF) and the National Household Survey of Drug Abuse (NHSDA). They are ideal for this, both because they can provide a long time line and detect shifts in trends from the existing pattern and because they have very large samples (the MTF includes 45,000-50,000 students in its annual survey, for example). Those surveys will be relied on to establish whether there has been important change in marijuana and inhalant use among target populations.

The NSPY survey will eventually have the ability to detect change in marijuana and inhalant use over time, particularly after Waves 3 and 4 are complete, when it will be possible to fully exploit the longitudinal character of the data. However, particularly for the first 2-3 waves of data collection, the MTF and NHSDA surveys will be relied on to justify any claims that youth behavior has changed.

In contrast, the NSPY survey is well designed to assess the particular influence of the Media Campaign on these behaviors, when MTF and/or NHSDA have established that there are changes. This will be possible starting with the second wave of analysis. Currently, MTF data are available for spring 1999, which precedes the launch of the Phase III Media Campaign. MTF data for spring 2000 should be available at the end of 2000. That data will establish whether the first months of Phase III of the Media Campaign are associated with changed behavior. If they are, it will be possible to test whether exposure to the Media Campaign is a likely explanation for a positive trend. In Chapter 2, approaches to such analyses are discussed.

This chapter has two tasks. In the first section basic behavioral results from the first round of the NSPY survey are presented. That data will serve three purposes: (1) it will establish baseline behavior for this questionnaire; (2) these results will be compared to the most recently published results from NHSDA and MTF, to assess possible structural differences between the surveys; and (3) important characteristics of youth that are associated with different levels of use will be identified.

The second section of this chapter reviews the behavioral data from the MTF surveys through 1999. In a previous publication (Hornik et al, 2000) time trend data was presented from MTF through 1998 and comparable data from NHSDA and the Partnership Attitude Tracking Survey (PATS), a survey privately undertaken by the Partnership for a Drug-Free America (PDFA). There has been no new NHSDA data released since the time of that publication. Instead this focus is on the MTF results through 1999, which cover the first 7-10 months of the Phase II Media Campaign but precede the launch of Phase III. In subsequent reports these time trends can be extended.

6.1 BASELINE NSPY BEHAVIORAL RESULTS

Figure 6-A shows NSPY questions on drug behavior. Using these, for all youth aged 9-18 in the United States, the NSPY analysis estimates that less than 16 percent have ever tried marijuana, around 11 percent have used it in the past year, and less than 5 percent have used it in the past month. Inhalant use is far lower, with those who have ever used at 4.5 percent, those who have used in the past year at 1.7 percent and those reporting use within the past month at 0.5 percent. There are sharp age differences in marijuana use and moderate age differences in inhalant use (see Table 6-A and Detail Table 6-1-1).

Figure 6-A
NSPY questions on drug behavior

The next questions are about marijuana and hashish. Marijuana is sometimes called pot, grass, or weed. Marijuana is usually smoked, either in cigarettes, called joints, or in a pipe. Hashish is a form of marijuana that is also called hash. From now on, when marijuana is mentioned, it means marijuana or hashish.

Have you ever, even once, used marijuana?

- Yes 1
- No..... 2

How long has it been since you last used marijuana?

- During the last 30 days 1
- More than 30 days ago but within the last 12 months 2
- More than 12 months ago 3

The next questions are about inhalants. Inhalants are liquids, sprays, and gases that people sniff, huff, or inhale to get high or make them feel good.

Have you ever, even once, used an inhalant for kicks or to get high?

- Yes 1
- No..... 2

How long has it been since you last used an inhalant for kicks or to get high?

- During the last 30 days 1
- More than 30 days ago but within
the last 12 months 2
- More than 12 months ago 3

Table 6-A
Use of marijuana and inhalants

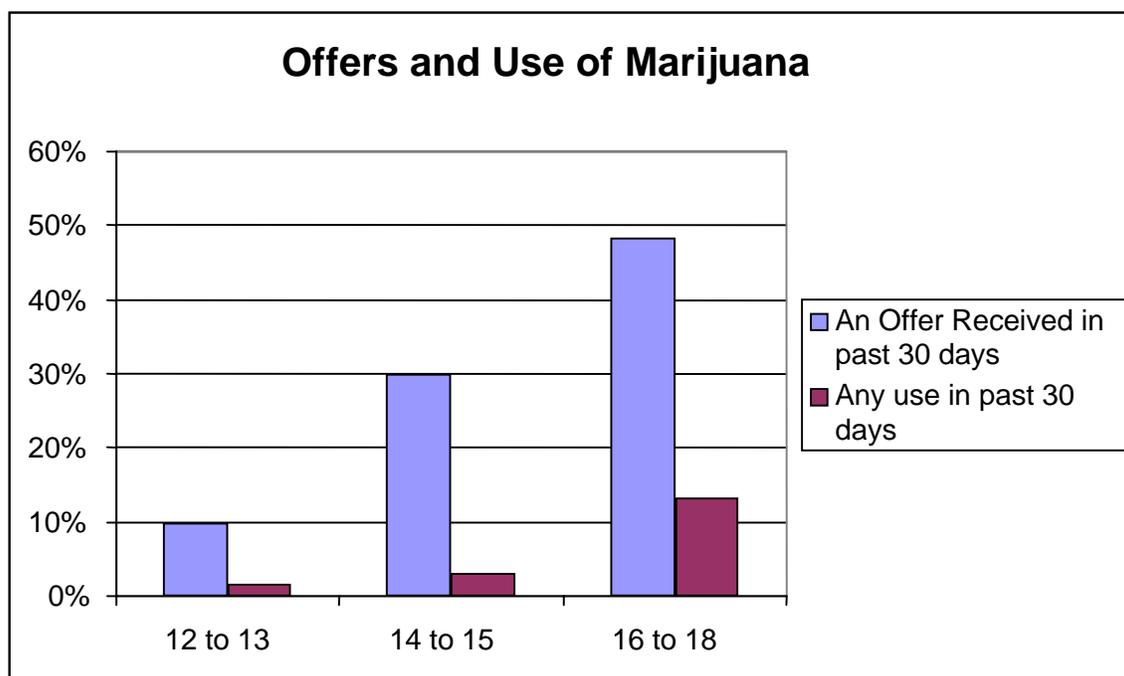
Age group	Marijuana use			Inhalant use		
	Ever (%)	Past year (%)	Past month (%)	Ever (%)	Past year (%)	Past month (%)
9-11	1.0	0.8	0.4	1.0	0.4	0.1
12-13	5.1	3.3	1.8	1.9	1.1	0.4
14-15	16.8	11.2	3.1	5.3	2.4	0.5
16-18	40.0	29.0	13.3	8.8	3.1	1.0

As demonstrated in earlier studies trial use of marijuana continues to grow through the later teenage years, and that only among youth aged 16-18 is there substantial monthly use (13%) of the drug. Ever use and past year use of inhalants increases across each age grouping. The age pattern of these inhalant results are somewhat at variance with results from the MTF studies. This issue is addressed below.

Data about regular use of marijuana and inhalants (i.e., use more than 10 times in the past year) follow the pattern of past month use. Almost 11 percent of youth aged 16-18 report regular use of marijuana; that is true for only 2 percent of the 14- to 15-year-olds. Virtually no youth of any age reports regular inhalant use (see Detail Table 6-1-2).

Youth were also asked about whether they had received offers of marijuana, ever and in the past 30 days, and how frequently they had received such offers in the past 30 days. Again, the pattern of offers is closely related to age. While 10 percent of 12- to 13-year-olds report they received offers of marijuana in the past 30 days, this climbs to nearly 50 percent among 16- to 18-year-olds. There are two striking elements to these results. First, it is clear that youth feel that others are offering them marijuana quite regularly, particularly among the older teens. Many students live in an environment where drugs are there for the taking. And perhaps even more striking is how rarely these youth say that offers have been accepted. These youth say that they “say no.” Compare the proportion of youth in each age group who say they have been offered marijuana in the past 30 days with the proportion who say they have used the drug in the past 30 days. For every one who used marijuana, there are many more who said they had the opportunity but declined (Figure 6-B).

Figure 6-B
Offers and use of marijuana



Drug use was minimally associated with demographic characteristics. Patterns of drug use were further broken down within age groups by four demographic characteristics: gender, ethnicity, region, and urbanicity. There were never any differences beyond those that could be explained by sampling error between groups differentiated by gender or urbanicity. There was strong evidence that older African American youth were less likely to try inhalants than either white or Hispanic youth. Also inhalant trial was less common among older youth in the Northeast than the West. Patterns of more recent inhalant and marijuana use show no clear pattern. (See Detail Table 6-1-1.)

Drug use is sharply associated with sensation seeking. In contrast to these small and inconsistent associations of drug use and demographic characteristics, sensation seeking is a powerful predictor of drug use at all age levels except for among children aged 9-11, where the drug use is rare altogether (Table 6-B). These comparisons are consistent with evidence from many other studies (Bardo et al, 1996). Their replication here are noteworthy in several respects. These data come from a representative national sample of youth rather than the convenience samples that many studies have relied on. Also, these associations are found although only a four-item measure of sensation seeking is used, rather than the usual measures incorporating 12 or more items.¹ It is clear that sensation seeking is a major risk factor for marijuana and inhalant use. Low sensation seekers are quite unlikely to become regular users of marijuana. These results confirm the logic of the Media Campaign's decision to focus its efforts on persuading high sensation seekers to avoid drug use. In Detail Table 6-B the results are presented for youth aged 12-18 with the measure of sensation seeking divided at its median.

Table 6-B
Percentages of marijuana and inhalant users among high and low sensation seekers

Age	Sensation seeking (%)	Marijuana use			Inhalant use		
		Ever (%)	Past year (%)	Past month (%)	Ever (%)	Past year (%)	Past month (%)
12-13	High	8.7	5.2	2.5	4.0	2.3	1.1
	Low	2.4	1.8	1.1	0.1	0.0	0.0
14-18	High	38.4	29.5	13.1	11.2	4.1	1.2
	Low	15.5	7.4	1.9	0.9	0.8	0.2

6.2 COMPARISON WITH MTF AND NHSDA MEASURES

In the previous report (Hornik et al, 2000) the sharp differences in estimates of marijuana use throughout the 1990s are shown, as measured by MTF, NHSDA, and the PATS surveys. In general, PATS provided the highest estimates, MTF next highest and NHSDA the lowest. This result made it clear that, a priori, none could be chosen as a baseline for NSPY. However, because both PATS and MTF are school-based surveys, while NHSDA and NSPY are home-based surveys, comparability was expected to be best between NHSDA and NSPY. In fact, this was the case.

NSPY 2000 estimates of lifetime and past year marijuana use are within sampling error limits of NHSDA estimates from the 1999 round of data collection (Table 6-C). However, past-month usage of marijuana is significantly lower in NSPY 2000 than it was in NHSDA 1999. Since past-month usage is more volatile than lifetime usage or even past-year usage, this difference may be pointing to a decline in marijuana usage in early 2000. Conclusive analysis on this point will need to wait until September 2001 when the NHSDA 2000 results will be available.

NSPY and NHSDA estimates of inhalant usage are less comparable. NSPY estimates for early 2000 are roughly half as big as NHSDA estimates for all of 1999. This is unlikely to reflect true change. Rather, it is likely to be an artifact of different questioning techniques. In the NHSDA, there are 12 questions on usage of specific types of inhalants. There are then followup questions on the age of initiation, lifetime frequency of use, annual frequency of use, and past-month frequency of use. In contrast, the NSPY questionnaire asks a global question about use of “liquids, sprays, and gases that people sniff, huff, or inhale to get high or make them feel good,” (Question B17) and then asks some followup questions on age of initiation and annual frequency. The difference between 12 questions that mention chemicals by name and a global question that does not mention any chemicals by name probably explains the large differences between NSPY and NHSDA inhalant estimates.

MTF 1999 estimates of both marijuana and inhalants are all higher than the corresponding NSPY early 2000 estimates (Table 6-D). The MTF 1999 estimates are also all higher than the NHSDA 1999 estimates. The reasons for these differences are not known. They may be caused by question wording, the setting for the interviews, response rates, coverage rates, some combination thereof, or other factors such as edit/imputation rules. On the topic of question wording, it may be noteworthy that the MTF questionnaire has no “gate” question

on ever having used a substance. Rather, it asks of everyone the frequency of usage over different time intervals. There is also more direct wording about having “sniffed glue” and so on instead of the more abstract wording of having “used inhalants.”

Although MTF data generally show inverse usage curves for inhalants by age so that usage declines with age through the eighth, tenth, and twelfth grades, this pattern was not observed in this study. NSPY data show inhalant usage rates marginally higher for each succeeding age group (see Table 6-A) although there may be a slight decline in NSPY estimates between the tenth and twelfth grade groups as presented in Table 6-D, both of which are included in the 16- to 18-year-old grouping in Table 6-A. It is difficult to say which set of statistics is better.

The MTF and NHSDA are conducted by different organizations, each with a different legacy and set of goals. No real effort has been made to harmonize the two information sources. NSPY is being conducted by a third organization, also with a different set of goals. The NSPY questions on actual drug usage are briefer than those in the NHSDA because of the focus on pre-use cognitive factors and exposure to anti-drug advertising. The NSPY questions are less direct than the MTF and NHSDA questions because of interviewing of younger children aged 9 to 11 and the desire to avoid educating these young survey respondents about drug usage.

Table 6-C
Comparison of published NHSDA 1999 data with NSPY 2000 data on use of marijuana and inhalants among youth 12-17 (percentages and confidence intervals)

All 12- to 17-year-olds	Marijuana use			Inhalant use		
	Ever (%)	Past year (%)	Past month (%)	Ever (%)	Past year (%)	Past month (%)
NHSDA 1999*	18.7 (18.0-19.4)	14.4 (13.8-15.0)	7.7 (7.2-8.1)	9.1 (8.6-9.6)	4.6 (4.3-4.9)	1.9 (1.7-2.1)
NSPY 2000	20.2 (17.9-22.7)	13.9 (12.1-15.9)	5.3 (4.1-6.8)	5.4 (4.3-6.9)	2.2 (1.6-3.0)	0.6 (0.4-1.1)

*Based only upon the CAI sample, ignoring the bridge PAPI sample.

Table 6-D
Comparison of MTF 1999 and NSPY 2000 on use of marijuana and inhalants

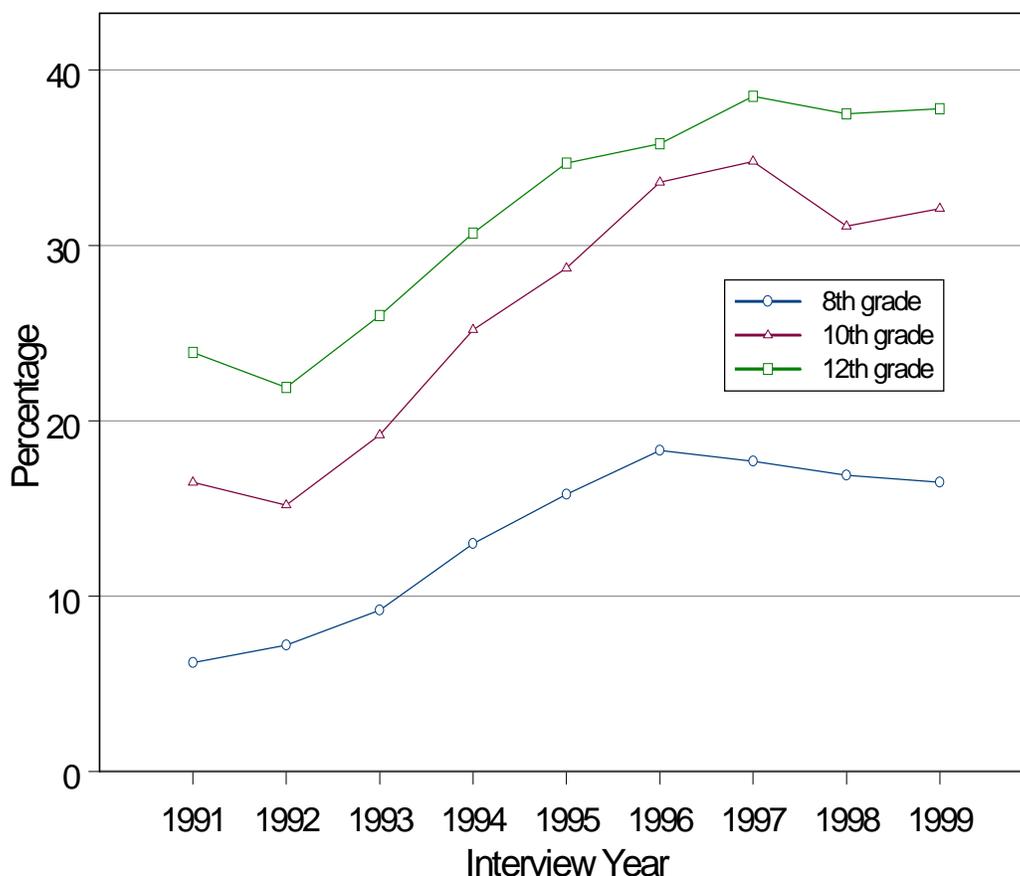
Survey and grade	Marijuana use			Inhalant use		
	Ever (%)	Past year (%)	Past month (%)	Ever (%)	Past year (%)	Past month (%)
MTF 8	22.0	16.5	9.7	19.7	10.3	5.0
NSPY 8	13.5	9.3	3.1	4.2	2.3	0.3
MTF 10	40.9	32.1	19.4	17.0	7.2	2.6
NSPY 10	31.0	20.3	9.4	8.3	2.6	0.0
MTF 12	49.7	37.8	23.1	15.4	5.6	2.0
NSPY 12	45.4	36.5	16.2	5.6	1.1	0.4

6.3 EVIDENCE ABOUT SHIFTS IN DRUG USE

The MTF study is conducted every spring on national samples of eighth, tenth, and twelfth graders in their classrooms. Students in both public and private secondary schools are represented. The mode of administration used for the survey is self-administered paper and pencil. The number of sample schools has been about 425 in recent years, while the number of responding students has run from about 51,000 to 45,000. From 1991 to 1999 the MTF study has maintained a student response rate between 82-91 percent in cooperating schools. The main reason students are missed is absence from class at the time of data collection.

The study uses a standard set of three questions to determine usage levels for the various drugs. Using marijuana as an example, they ask, “On how many occasions (if any) have you used marijuana...(a) in your lifetime?; (b) during the past 12 month?; (c) during the last 30 days?” Each of the three questions is answered on the same answer scale: 0 occasions, 1-2 occasions, 3-5, 6-9, 10-19, 20-39, and 40 or more occasions. Because of its longevity, the MTF study serves as an important benchmark for comparing results and judging the nation’s success in combating drug use by youth. Phase II of the Media Campaign was launched in August 1998; thus, the 1999 MTF results offer the first opportunity to look for Media Campaign effects. Data from the 1999 MTF reflects estimates gathered after about 8 months of nationwide operations, although during this period only ads developed prior to Media Campaign supervision were used. Figures 6-C and 6-D show the MTF time series for annual marijuana and inhalant use for 1991–1999.

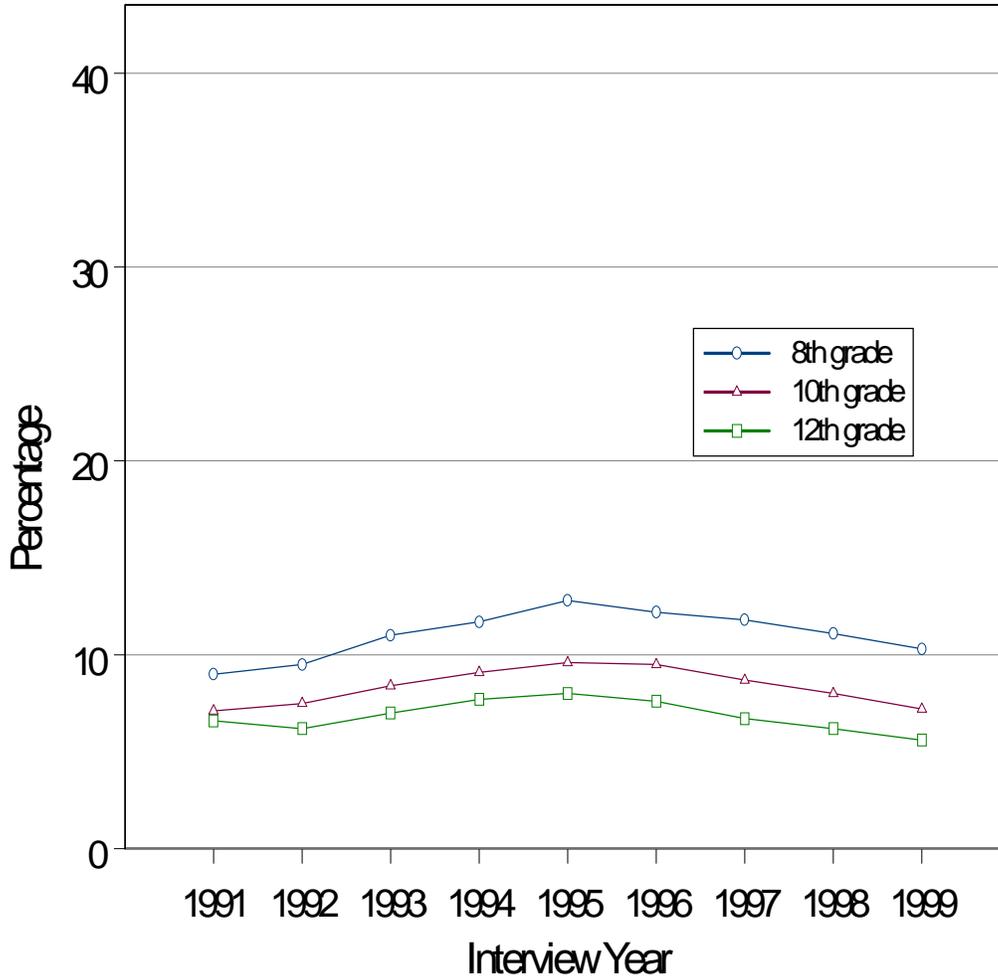
Figure 6-C
Percentage of eighth, tenth, and twelfth graders
reporting annual marijuana use: MTF, 1991-99



Although marijuana use among eighth and tenth graders decreased between 1997 and 1998, after 5 years of steadily increasing, there was little change between 1998 and 1999. Among the three grades, eighth-grade students are the only ones who held steady or displayed a decrease in use from 1998 to 1999. The estimates for tenth graders are the most discouraging, increasing from 31.1 percent to 32.1 percent for annual marijuana use between 1998 and 1999.

Since 1995, inhalant use has been declining steadily. Looking to Figure 6-D, this trend continued between 1998 and 1999 for annual use among the three age groups.

Figure 6-D
Percentage of eighth, tenth, and twelfth graders
reporting annual inhalant use: MTF, 1991-99



6.4 SUMMARY

Overall, marijuana use seems to have held steady from 1998 to 1999. Use of inhalants, on the other hand, has continued to decline. Given that Phase II of the Media Campaign was launched in the summer of 1998, and Phase III in the fall of 2000, and that the 1999 MTF data was collected in the spring of 1999, it is too soon to make inferences about the effectiveness of the Media Campaign. It is necessary to wait for the 2000 and 2001 MTF results and for NSPY reports on the association between exposure with outcomes before coming to any conclusions.

7. DRUG ATTITUDES AMONG YOUTH

The underlying model for evaluation is that exposure to campaign messages from all sources is expected to affect young people's attitudes about drugs, their perceptions of normative approval of drugs, and their confidence they can resist drugs (self-efficacy). Changes in attitudes, perceived norms and self-efficacy are in turn, expected to reduce intentions to try drugs or use them regularly. This chapter describes the drug-related attitudes, norms, efficacy, and intentions of prior non-users and in some cases, for prior users of marijuana. In Sections 7.1 to 7.5, these outcomes and differences are examined by demographic groupings. Also compared are some NSPY findings regarding attitudes to the Monitoring the Future Study (MTF) and the National Household Survey on Drug Abuse (NHSDA) results. In general, findings are highlighted only in areas where changes may be found in subsequent waves. Occasionally, the absence of differences is noted where they are expected.

In Appendix E, the model of effects for the Media Campaign are tested, and relationships of intentions to youth' own beliefs, attitudes, norms, and self-efficacy are presented. The relationship of intention to other noncognitive factors, such as peer influence measures is also discussed. In addition, since the Media Campaign aims to reduce drug use by targeting parents to talk to their children about drugs, the relationships of intention to measures from the parent interview are examined. Again, the purpose of this presentation is to draw attention to the areas that will be explored in subsequent waves in determining the nature of campaign effects.

As described in Chapter 2, the Media Campaign has two related objectives with regard to marijuana use. First, it seeks to keep youth who have never tried marijuana from trying it. Second, the Media Campaign intends to discourage those who have tried marijuana or used it occasionally from becoming regular users. Those behaviors are viewed as distinct behaviors, and the influences on trial are quite different than the influences on regular use. The questionnaire was structured to keep these two behaviors apart. All respondents were asked about their intentions to try or regularly use marijuana in the next year, as well as about disapproval and perceived risk in drug use. However, for a subset of questions, questions were asked either about perceptions of trial use or about regular use, depending on the prior use of marijuana.

Youth were assigned to questions about trial and regular use outcomes, attitudes and norms based on their prior use. Non-users were assigned randomly to questions about trial and regular use, but prior users were assigned only to regular use questions. It was useful to know how non-users thought about both behaviors, but for prior users asking questions about trial use was less relevant. Their next decision is about whether to proceed to regular use. Since there were relatively few of them, questions were asked about the behavior most relevant to them, regular use. Therefore, this discussion is organized around the different subgroups that answered questions about each behavior. Sections 7.1 to 7.5 focus primarily on non-users. Appendix E deals with intentions, self-efficacy, and attitudes among the entire sample, since these questions were asked of everyone.

7.1 9- TO 11-YEAR-OLD NON-USERS' ATTITUDES ABOUT MARIJUANA TRIAL

Most children reported opinions that were strongly against marijuana trial. Children tended to hold anti-marijuana beliefs (mean=1.2, where -2=strong pro-drug and +2=strong anti-drug), and strong anti-marijuana attitudes (mean=6.8 on 1-7 scale, where 7=extremely bad) (Detail Table 7-1-4). They reported high disapproval of marijuana among parents and friends, and perceived a low prevalence of trial among friends (90.1% said that none of their friends had tried marijuana; also see Detail Table 7-1-3). Most children also reported strong personal disapproval of marijuana trial by others (83%; Detail Table 7-4).

Nonetheless, there were some patterns of results on beliefs about outcomes of trial and perceived social expectations that suggest children do not see marijuana trial as negatively as might be concluded on initial glance at the data. In addition, while most children perceive friends to be non-users, some do not think their friends strongly disapprove of trial.

7.1.1 Beliefs About Outcomes of Marijuana Trial

Nine- to eleven-year-olds were asked about the probability of eight consequences of marijuana trial (Detail Table 7-1-1). These included two positive consequences: “become more popular, and “have a good time.” The remainder were negative outcomes, such as “upset parents,” “do poorly in school,” “make you lazy,” “make you act stupidly and foolishly,” “make you do harder drugs,” and “make you start using marijuana regularly.”¹

- Most children thought marijuana trial would not have positive outcomes. Eighty-nine percent thought marijuana trial would definitely not make them more popular, and 73.2 percent thought it would definitely not make them have a good time.
- However, they saw some negative outcomes of trial as less probable. A surprisingly small proportion perceived marijuana as a “gateway” drug that would lead them inevitably to harder drugs. Only 21.8 percent said once or twice use of marijuana would definitely make them use it more regularly, and even fewer (17.6%) said that marijuana would definitely make them go on to harder drugs.

7.1.2 Social Expectations About Trial

- While children reported strong disapproval of marijuana use among their friends and parents, a smaller proportion reported strong disapproval by friends than parents (76.7% vs. 91.7%) (Detail Table 7-1-4).
- Fewer Hispanic children reported strong disapproval by parents (86.1%) than did white children (93.3%). But the disapproval among friends did not differ by race/ethnicity.
- Fewer boys expressed strong disapproval by friends (72.7%) than did girls (80.8%).

¹ Responses were coded as “definitely no,” “probably no,” “probably yes,” and “definitely yes.”

7.2 ATTITUDES ABOUT MARIJUANA AMONG TEEN NON-USERS

The findings highlighted below show that while most teens continue to be strongly against marijuana trial, their opinions are less strongly anti-marijuana compared to the younger cohorts. In addition, as they age, teens experience increasingly less strong disapproval of marijuana trial among friends. During the teen years, effects of personality factors, such as sensation seeking, also begin to emerge as possible predictors of attitudes. However, non-users do distinguish between trial and regular use of marijuana, as indicated by their relatively stronger anti-drug opinions about regular use.

7.2.1 12- to 18-Year-Old Non-Users' Attitudes About Marijuana Trial

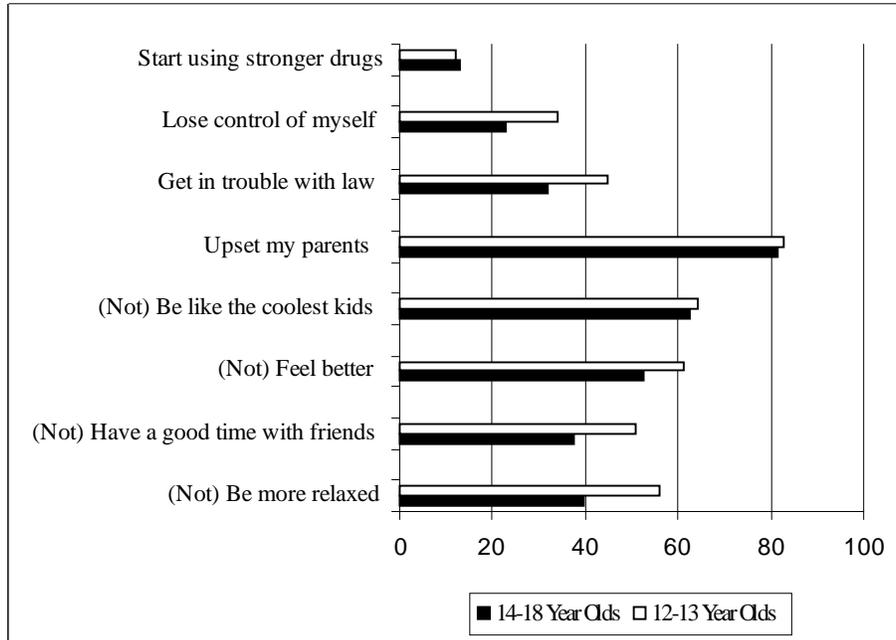
Beliefs about Outcomes of Marijuana Trial Among 12- to 18-year-olds

Teens were asked about a different set of eight consequences of trial than younger children (Detail Table 7-1-2). Four consequences were negative (upset parents, get in trouble with the law, lose control of myself, and start using stronger drugs), and four were positive (be more relaxed, have a good time with friends, feel better, and be like the coolest kids).² On five of the eight beliefs, the majority of teens did not give strong anti-drug answers.

- Between a half and two-thirds of the teens thought that marijuana trial would not lead them to feel better or be like the coolest kids. About half of the younger teens thought marijuana trial would not result in being more relaxed (55.9%) and having a good time with friends (50.9%). However, fewer older teens agreed with these outcomes (39.7% and 37.3% for each outcome) (Detail Table 7-1-2, and Figure 7.A).
- While most 12- to 13-year-olds and 14- to 18-year-olds agreed that marijuana trial would upset their parents (82.6% and 81.3%, respectively), other negative outcomes were not seen as very likely.
- Like children, teens tend to reject the gateway theory. Less than one-fifth of 12- to 18-year-olds thought it very likely that using marijuana even once or twice would lead to them “start using stronger drugs” (12.2% of younger teens, and 13.1% of older teens who answered questions about trial).
- While older and younger teens tended not to think that marijuana trial would result in trouble with the law or losing control, older teens were much more likely to disagree with the possibility of these outcomes (Figure 7-A).
- Scores on the summed scale of beliefs were significantly less anti-drug for older age groups (mean=0.6 for 14- to 18-year-olds, 0.7 for 12- to 13-year-olds, and 1.2 for 9- to 11-year-olds) (Detail Table 7-1-4).

² Responses were assessed on a 5-point scale from “very unlikely” to “very likely,” as shown in question C3a in the Teen questionnaire.

Figure 7-A
Beliefs about outcomes of marijuana trial:
Percent holding strong anti-drug beliefs



- The effect of sensation seeking on beliefs varies by age. Among 12- to 13-year-olds, high sensation seekers’ beliefs were less strongly anti marijuana (mean=.6) compared to low sensation seekers (mean=.8). However, there was no difference by sensation seeking among the older teens (Detail Table 7-1-4).

Attitudes toward Marijuana Trial

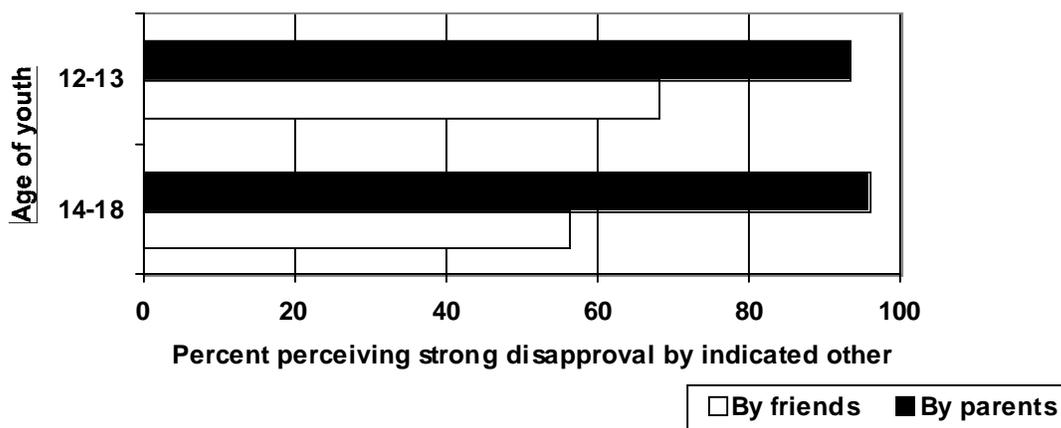
- Like children, teens were asked about their attitudes toward trial. Two semantic differential scales were used to assess whether they thought marijuana trial was bad/good and enjoyable/unenjoyable.³ Their mean scores on the summed measures were strongly anti-drug (6.6 for youth aged 12-13, 6.5 for older teens; Detail Table 7-1-4).
- Compared to children, teens reported attitudes that were slightly less strongly anti-drug (mean=6.8 for 9- to 11-year-olds).

³ Questions C4a and C5a in the Teen questionnaire.

Perceived Social Expectations

- While perceived parent disapproval is high for all age groups, friends’ disapproval of marijuana trial declines sharply among 14- to 18-year-olds (54.2%) relative to younger teens (68.8%) and children (76.7%) (Detail Table 7-1-4).⁴
- For all age groups, friend disapproval is lower than parent disapproval. However, the gap between friend disapproval and parent disapproval grows with age (differences are at about 38%, 23% and 15% for the oldest to the youngest age groups). In other words, as teens become older, their peer group’s expectations conflict more sharply with parent expectations (Figure 7-B).

Figure 7-B
Perceived disapproval by parents and friends of marijuana trial



- Among both groups of older teens, low sensation seekers reported higher friend disapproval than did high sensation seekers (Table 7-A and Detail Table 7-1-4).

Table 7-A
Friends’ disapproval by sensation seeking:
Percent strong disapproval

Degree	12-13	14-18
High sensation seekers	51.2	46.0
Low sensation seekers	80.4	64.2

⁴ Questions C7a and C8a in the Teen questionnaire.

Perceptions of Trial Among Others

- Most teens reported that none or few of their friends' used marijuana even once or twice (Detail Table 7-1-3).⁵
- However, teens in both age groups thought that trial occurred among friends much less often than among other teens in general (Table 7-B). Clearly older teens see a good deal of marijuana use around them reflected in their responses about other teens; however just as they mostly claim they are not marijuana users themselves, they also see most of their friends as non-users
- Compared to older teens, youth aged 12-13 perceived marijuana trial as much less prevalent among their friends and their peers (Table 7-B).

Table 7-B
Perceptions of marijuana trial among others:
Percent none or few used marijuana

Use	12-13	14-18
Friends' use	93.6	69.1
Use by other kids of same age	74.7	29.3

- There were no additional demographic differences in friends' use or peer use, but low sensation seekers reported significantly more friends and peers who had not tried marijuana than did higher sensations seekers. (Table 7-C).

Table 7-C
Perceptions of marijuana trial among others by sensation seeking:
Percent none or few used marijuana

Use	12-13	14-18
Friends' use		
High sensation	88.9	59.0
Low sensation	96.6	79.1
Use by other kids of same age		
High sensation	67.9	22.4
Low sensation	78.7	38.1

Intention to Try Marijuana

While most teens do not intend to try marijuana⁶ even once or twice in the next 12 months (Detail Table 7-1-3), intentions to avoid use decrease by age: 91.6 percent of youth aged 12-

⁵ Question C10a in the Teen questionnaire.

⁶ Question C1 in the Teen questionnaire.

13 said they definitely would not try it, compared to 82.7 percent of older teens. There were no differences by gender or ethnicity in intention to try marijuana.

Fewer high sensation seekers in both age groups expressed intentions to avoid marijuana trial than low sensation seekers (see Table 7-D below).

**Table 7-D
Intentions to try by sensation seeking:
Percent definitely not**

Use	12-13	14-18
High sensation	83.2	77.0
Low sensation	97.3	90.0

7.2.2 Non-Users’ Attitudes about Marijuana Trial Versus Regular Use

Non-users tended to give stronger anti-drug responses about regular use than about trial use, suggesting that they see the two behaviors as distinct from one another.

- While non-users held relatively strong anti-marijuana beliefs, their beliefs about regular use reflected even stronger anti-marijuana sentiments (Table 7-E).
- About equal proportions of non-users reported strong parent disapproval of marijuana trial and marijuana regular use. A similar pattern was evident for friend disapproval (Detail Tables 7-1-4 and 7-2-4).

**Table 7-E
Non-users’ beliefs about trial and regular use: Average score**

Beliefs	12-13	14-18
-2= strong pro-drug +2=strong anti-drug		
Trial	0.7	0.6
About regular use	1.1	1.1

- However, as shown below, regular use was seen as even less prevalent than trial use among friends and peers, particularly by 14- to 18-year-olds. That is, the percentages of youth reporting none or few of their friends or peers use regularly were higher for regular use measures than for trial use (Tables 7-F, Detail Tables 7-1-3, and 7-2-2).

Table 7-F
Non-users' perceptions of trial and regular use by others:
Percent reporting none or a few try or use every month

Use	12-13	14-18
Friends' use		
Trial	93.6	69.1
Regular use	94.3	78.4
Use by other kids of same age		
Trial	74.7	29.3
Regular use	87.7	46.1

- Non-users also expressed intentions to definitely not use marijuana regularly in larger proportions than intentions to try marijuana.⁷ Ninety-two percent of 12- to 13-year-olds said they definitely would not try marijuana, and 97.5 percent said definitely not to regular use. Among 14- to 18-year-olds, 82.7 percent said definitely no to trial, and 94.6 percent said definitely not to regular use (Detail Tables 7-1-3 and 7-2-2).

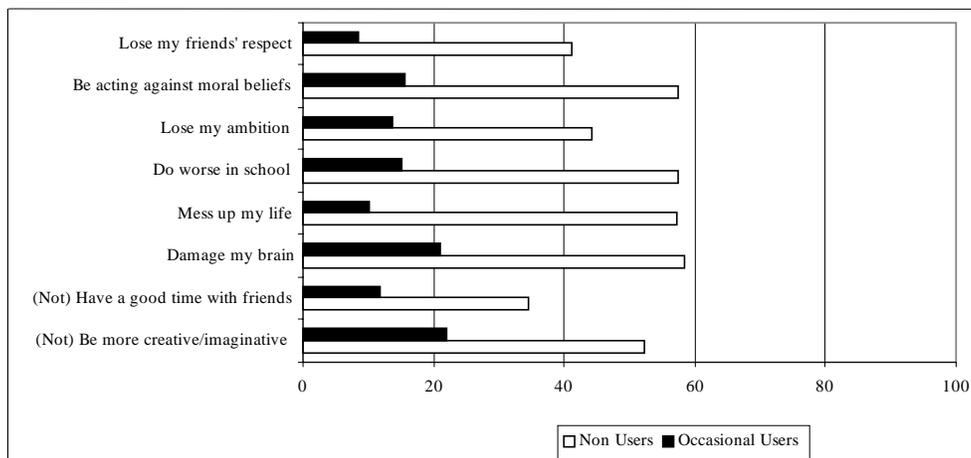
7.3 ATTITUDES ABOUT MARIJUANA REGULAR USE AMONG PRIOR NON-USERS AND OCCASIONAL USERS

Since the proportion of prior users is small (about 8% reported use in the past year) many of the originally-planned comparisons between users and non-users on regular use outcomes were not possible. However, there was some indication that 14- to 18-year-old non-users and prior occasional users do differ on beliefs about consequences, intention, and perceived use among others.

- For example, 14- to 18-year-old prior occasional users were much less likely than non-users to agree that negative outcomes were very likely, and that positive outcomes were very unlikely (see Figure 7-C below, and Detail Table 7-2-1).

⁷ Question C2 in the Teen questionnaire.

Figure 7-C
14- to 18-year-old non-users' and occasional users' beliefs about consequences of regular use:
Percent strong anti-drug



- Non-users were at least twice as likely as prior users to think that their friends or peers did not engage in regular use of marijuana (see Table 7-G, Detail Tables 7-2-2 and 7-2-3).

Table 7-G
Non-users' and occasional users' perceptions of regular use by others:
Percent reporting none or a few try or use every month

Use	12-13	14-18
Friends' use		
Non-users	94.3	78.4
Users	*	31.0
Use by other kids of same age		
Non-users	87.7	46.1
Users	31.0	22.4

* Too few cases for reliable analysis.

- Finally, intention to definitely not use regularly was markedly higher among prior non-users than users- 94.6 percent of 14- to 18-year-old non-users said they definitely would not use marijuana regularly, while 54.8 percent of occasional users in that age group gave the same response (Detail Tables 7-2-3 and 7-2-3).

7.4 INTENTIONS FOR USE AND SELF-EFFICACY TO RESIST MARIJUANA

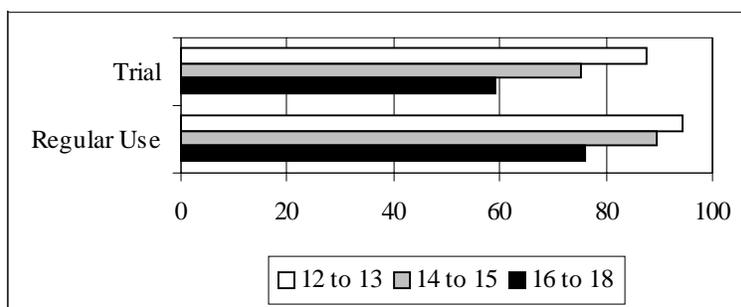
As suggested in earlier findings, most respondents, regardless of prior use, said they definitely would not use marijuana even once or twice or regularly in the next 12 months

(77% of all teens). Self-efficacy, the confidence to resist marijuana use in tempting circumstances, was high for non-users but comparatively lower for occasional users.⁸ These patterns are described in greater detail below, and present some differences in outcomes by age, prior use, and sensation seeking.

Intentions

- The percentage of youth reporting definitely not intending to try or use marijuana regularly decreases by age (Figure 7-D).

Figure 7-D
Intentions to use marijuana:
Percent reporting definitely not



- Low sensation seekers express intentions to definitely not try or use marijuana regularly in larger proportions than high sensation seekers (see Table 7-H and Detail Table 7-3-1).

Table 7-H
Trial and regular use intentions by sensation seeking:
Percent definitely not intending

Sensation Seeking	Trial		Regular Use	
	12-13	14-18	12-13	14-18
High	76.7	55.6	89.2	75.4
Low	95.5	84.0	98.4	93.2

Appendix E has some more details on the cognitive and background correlates of intentions for future marijuana usage. This study shows that many of the variables studied in this chapter are important predictors of intentions.

⁸ See question C9 in the Teen questionnaire. Even youth who use marijuana regularly were asked about their ability “to say no to marijuana, if [he/she] really wanted to.”

7.4.1 Self-Efficacy

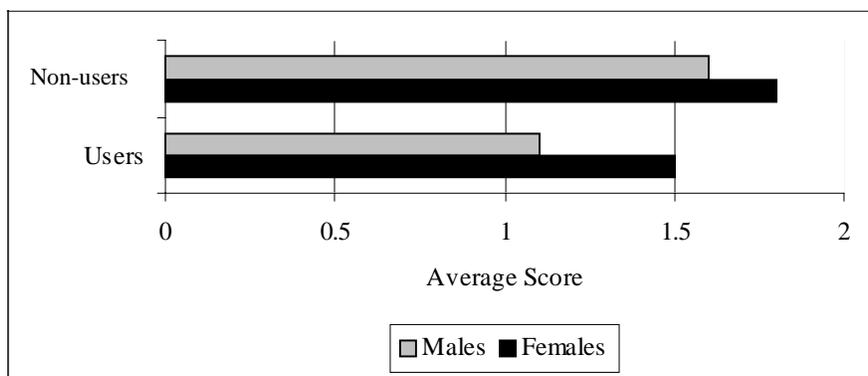
- Overall respondents were confident they could resist drug use if they wanted to. This is consistent with the data in Chapter 6, contrasting the proportion of youth who said they had been offered marijuana with the proportion who accepted those offers. The only exception to this pattern is for younger occasional users.
- Self-efficacy increases by age of child among users and non-users. Occasional users, particularly the few in the 12- to 13-year-old group, express markedly lower self-efficacy to resist marijuana than non-users (see Table 7-I and Detail Table 7-3-2).

**Table 7-I
Self-efficacy by age and prior use:
Average score (-2=low; +2=high)**

Self-efficacy	12-13	14-15	16-18
Non-users	1.6	1.6	1.8
Occasional users	0.3	1.1	1.4

- Due to small sample sizes, demographic differences in self-efficacy for occasional users could not be determined. However, gender was a predictor of self-efficacy among non-users as well as users. Boys expressed significantly less self-efficacy to resist marijuana in both use groups (Figure 7-E, and Detail Table 7-3-2).

**Figure 7-E
Self-efficacy to resist by use and gender
among 14- to 18-year-olds**



- Within the non-users group, there were some subgroup differences in self-efficacy although all subgroups expressed substantial confidence that they could resist marijuana use if they wanted to. (Detail Table 7-3-2):

- Among 12- to 13-year-old non-users, Hispanics expressed lower self-efficacy to resist, on average, than whites (1.3 vs. 1.7, respectively).
- High sensation seekers expressed lower self-efficacy than low sensation seekers (see Table 7-J below).

Table 7-J
Self-efficacy by age among non-users:
Average score (-2=low; +2=high)

Sensation seeking	12-13	14-18
High	1.5	1.6
Low	1.7	1.8

7.5 DISAPPROVAL OF AND PERCEPTIONS OF RISK ASSOCIATED WITH OCCASIONAL AND REGULAR USE OF MARIJUANA

In addition to opinions about their own marijuana use, youth were also asked their attitudes about marijuana use by others. Since these questions are similar but not identical to those asked in the MTF study and in NHSDA, NSPY findings were compared to earlier results from these surveys. It is important to note, however, that NSPY questions were not perfectly matched with those in other surveys.⁹ For example, a five-point semantic differential scale was used to measure disapproval, while MTF uses a three-point scale with answers “don’t disapprove,” “disapprove,” and “strongly disapprove.” Also, MTF used the term “regular use” while this study specified regular use to mean “use nearly every month for 12 months” Thus, differences noted below may be due in part to question wording.

7.5.1 Disapproval of Marijuana Use

- Overall, teens disapproved of marijuana use by others, and as anticipated, expressed stronger disapproval of regular use than occasional use.¹⁰ In addition, strong disapproval of occasional use declines with age, as does disapproval of regular marijuana use (Table 7-K and Detail Table 7-4). Fourteen- to fifteen-year-olds express strong disapproval in larger proportions than 16- to 18-year-olds. These patterns are similar to findings presented earlier regarding disapproval of own use by peers, in which older teens tended to report less disapproval by peers of their own use.

⁹ See question C33 in the Teen questionnaire.

¹⁰ See question C33 in the Teen questionnaire.

Table 7-K
Strong disapproval of occasional and regular marijuana use

Age	Occasional use	Regular use
12 to 13	61.7	79.1
14 to 15	37.9	58.3
16 to 18	26.6	48.7

In addition, as noted with other outcomes, high sensation seekers disapprove of others' use less than low sensation seekers (Detail Table 7-4). Among 12- to 13-year-olds, for example, 44.1 percent of high sensation seekers reported strong disapproval of occasional use by others, in contrast to 74.8 percent of low sensation seekers. The difference in responses was similar among older teens, where 19.9 percent of high sensation seekers reported strong disapproval, versus 51.4 percent of low sensation seekers who gave the same answer.

7.5.2 Comparison With MTF Data

Compared to MTF data on similar measures, disapproval of occasional use is about equal for eighth and tenth graders, but lower for twelfth graders in the NSPY sample (Table 7.5.2). Similarly, disapproval of regular marijuana use is similar across the MTF and NSPY samples for eighth graders, but lower for tenth and twelfth graders in the NSPY group (Table 7-L and Detail Table 7-4). The difference may have to do with interpretation of the phrase regular use in MTF versus "use nearly every month for 12 months" in NSPY. The MTF version may be seen as referring to use more frequent than every month use. It is also possible that disapproval of marijuana among twelfth graders has declined compared to MTF results from 1998. However, since the questions are somewhat different across the surveys, it is not possible to definitively account for the lack of correspondence across surveys for twelfth graders.

Table 7-L
Disapproval of even once or twice and regular marijuana use across surveys:
Percent disapprove (95% confidence intervals in parentheses)

Grade	Once or twice use		Regular use	
	MTF 1998	NSPY 2000	MTF 1998	NSPY 2000
Eighth grade	69.0	71.8 (66.2, 76.8)	84.5	87.5 (83.5, 90.6)
Tenth grade	56.0	51.2 (44.0, 58.4)	80.1	73.1 (66.6, 78.7)
Twelfth grade	51.6	35.2 (28.4, 42.8)	81.2	64.1 (72.3, 79.5)

NOTE: For occasional use, MTF asks about "smoking marijuana once or twice" and NSPY asks about "using marijuana even once or twice." For regular use, MTF asks about "regular use" and NSPY asks about "every month."

7.5.3 Perceived Risk of Harm From Marijuana Use

As expected, in all age groups, there is greater risk associated with regular use than trial use.¹¹ However, perceived risk associated with marijuana trial and regular use decreases with age. Fourteen- to fifteen-year-olds perceive great risk in occasional and regular use in larger proportions than 16- to 18-year-olds.

Table 7-M
Perceived great risk of even once or twice and regular marijuana use

Age	Once or twice use	Regular use
12 to 13	44.4	72.9
14 to 15	25.9	64.4
16 to 18	17.3	45.7

There were few demographic differences in perceptions of risk. Teens 14 to 18 in towns and rural areas perceived greater risk of occasional use than their suburban counterparts. However, relative to high sensation seekers, greater proportions of low sensation seekers in each age category reported that others put themselves at great risk though occasional and regular use (Detail Table 7-4). For example, among 12- to 13-year-olds, 34.7 percent of high sensation seekers thought there was “great risk” of harm through occasional use, while 53.1 percent of low sensation seekers gave the same response.

7.5.4 Comparison to MTF Data

For reports of “great risk” among tenth and twelfth graders, the proportions reported in the NSPY sample are very similar to the 1998 MTF data. However, perceived risk associated with trial among eighth graders is somewhat greater in the NSPY sample. Risk associated with regular use is somewhat lower in the NSPY sample for all grades. Results for regular use risk are parallel to those about approval of regular use of marijuana, where MTF estimates were higher than NSPY results for the same grades.

Table 7-N
Perceived great risk in once or twice and regular marijuana use across surveys:
Percent great risk

Grade	Once or twice use		Regular use	
	MTF 1998	NSPY 2000	MTF 1998	NSPY 2000
Eighth grade	28.1	33.3 (29.0, 37.9)	73.0	69.6 (64.2, 74.5)
Tenth grade	19.6	16.7 (11.2, 24.1)	65.8	56.9 (49.3, 64.3)
Twelfth grade	16.7	12.5 (8.1, 18.9)	58.5	41.5 (33.4, 49.7)

¹¹ See question C33 in the Teen questionnaire.

7.5.5 Comparison With NHSDA Data

Estimates for occasional use risk are similar across surveys. However, contrary to expectation, estimates for regular use in the NSPY are greater than NHSDA figures. Differences in question wording suggest that the NSPY estimates should be lower than NHSDA data, but that is the opposite of what is shown in Table 7-O.

**Table 7-O
Perceived great risk of harm from occasional and regular use across NHSDA and NSPY**

Age	Occasional use		Regular use	
	NHSDA 1994	NSPY 2000	NHSDA 1998	NSPY 2000
12 to 13	41.4	44.4 (40.4, 48.5)	63.2	72.9 (69.5, 76.0)
14 to 18	25.5	21.1 (18.5, 24.0)	47.2	54.0 (50.0, 57.8)

NOTE: For occasional use, NHSDA question wording is “any use,” and NSPY asks about “even once or twice use.” For regular use, NHSDA wording is “once or twice per week” and NSPY is “once every month.”

7.5.6 Comparison With PATS Data

Estimates of occasional use risk are greater in the NSPY for seventh to eighth graders, as was the case for MTF-NSPY comparisons. However, other grade levels were similar. NSPY estimates for regular risk were slightly higher for seventh to eighth graders but about the same for older grades.

**Table 7-P
Perceived great risk in occasional and regular marijuana use across surveys:
Percent great risk**

Grade	Occasional use		Regular use	
	PATS 1998	NSPY 2000	PATS 1998	NSPY 2000
Seventh-eighth	18.9	38.4 (34.8, 42.2)	65.3	71.2 (67.4, 74.7)
Ninth-tenth	15.1	21.8 (18.1, 26.1)	60.9	57.5 (51.9, 62.9)
Eleventh-twelfth	13.8	16.4 (12.8, 20.7)	54.0	58.6 (55.6, 61.5)

NOTE: PATS asks about “any use,” and “regular use.”

Thus, it appears that the NSPY data are reasonably comparable to MTF, NHSDA, and MTF data. And, as stated earlier, discrepancies across the surveys do not always conform to expectations given the question wording variations.

7.6 SUMMARY OF ATTITUDES ABOUT MARIJUANA

The patterns in findings point to several areas in which desired cognitive attributes are already prevalent and thus improvement might be hard to achieve, as well as areas where the desired cognitive attributes are uncommon, leaving much room for improvement.

- Across all ages, belief is low that marijuana is a gateway drug that will lead youth inevitably to the usage of harder drugs.
- Anti-marijuana attitudes are already high, although they are somewhat weaker for older non-users and for prior users.
- Most youth already perceive that their parents express strong disapproval of marijuana trial and regular use.
- Perceived disapproval by friends of personal marijuana trial is considerably lower than perceived disapproval by parents, particularly for older teens.
- Few older teens believe that marijuana trial is rare.
- Occasional users of marijuana have much less confidence that they can resist future marijuana offers.
- Intention to avoid marijuana is already high for most groups but lowest among older sensation-seeking teens.

8. PARENT-CHILD TALK ABOUT DRUGS, MONITORING, AND FAMILY ACTIVITIES

As noted earlier, parents are also primary targets of the Campaign. The overall goal for this target audience is that they become more actively involved in their children’s lives. Specific behaviors encouraged by the Campaign include talking about drugs, monitoring, and spending time with children in entertaining activities. Thus, the NSPY surveys asked parents and youth about past conversations about drugs, conversations about anti-drug ads, and child-monitoring activities. Parents were also asked about whether they engaged in family activities with their child, and whether and what type of activities they attended to support their opinions about drug use. Also described are the levels of agreement between parent and child reports at the aggregate level.

8.1 PARENT-CHILD TALK ABOUT DRUGS

Parents report frequent talk with their children about drugs, across all age groups. About 91 percent report having talked with their 9- to 18-year-old child at least once in the previous 6 months, and 77 percent report having talked at least twice (Detail Table 8-1). Chapter 4 reported about children’s reports of conversations with parents. Some of these results are repeated here in order to compare the two sets of reported behavior.

In addition to frequency of conversation, parents and children were asked whether they had talked about four drug-related topics. According to parents, family rules and expectations loomed largest (84.6%) while drug use in the media was the least commonly discussed (57%) (see Detail Table 8-1).

Next, frequencies of talk reported by parents and children were compared. Children report conversations less often than their parents, and the gap increases with age. Parents’ claims of two or more conversations increase with age, but the youth’s recall of such conversations decrease. The gap in parent-child reports is noticeably different when comparing 9- to 11-year-olds versus all older children (Table 8-A and Detail Table 8-1).

**Table 8-A
Parent-child reports of conversation about drugs:
Percent who had two or more conversations**

Report	9-11	12-13	14-15	16-18
Parent report	71.3	80.2	81.9	78.2
Child report	62.7	59.2	58.6	48.4
Size of gap	8.6	21.0	23.3	29.8

- There were a few demographic differences in child’s reports of conversation by race/ethnicity and urbanity, but there were no parallel differences in parents’ reports (Detail Table 8-5).
- As with frequency of talk, children reported each specific topic of conversations less often than their parents did, and for three of the topics, the gap grew larger with

child’s age (Detail Table 8-1). These topics were family rules and expectations about drugs, specific things child could do to stay away from drugs, and drug use in the media.

- However, there was one interesting differential pattern associated with age. For three topics, older children reported many fewer conversations than did younger children (Detail Table 8-1). On average, across the first three topics, 16- to 18-year-olds reported conversation about 24 percent less frequently than did 9- to 11-year-olds. However, for the topic “people we know who have gotten in trouble with drugs,” the pattern was the opposite for both children and their parents (Table 8-B). In absolute terms, 18 percent more of the 16- to 18-year-olds reported discussing this topic with their parents than did the younger 9- to 11-year-old cohort. Consistently, the percent more of the parents of teens in the oldest age group reported such a conversation than did parents of 9- to 11-year-olds. Clearly, as drug use becomes more common, the topic becomes more of an issue for parents and children. This is also the only topic out of the four on which parent and child reports both increase with child’s age, even though parents still report more of such conversation than children.

Table 8-B
Percent who had conversations about “People we know who have gotten in trouble with drugs”

Report type	9-11	12-13	14-15	16-18	Increase with youth age 16-18 vs. 9-11
Parent report	54.7	65.1	70.2	73.1	+18.4
Child report	36.4	44.4	53.7	52.9	+16.5

8.2 TALK ABOUT ANTI-DRUG ADS

The parent-child conversational gap is the largest when it comes to the issue of talk specifically about anti-drug ads (Detail Table 8-5).

- Two-thirds of all parents claim that they have talked with their children about the anti-drug ads. But only a little more than one-third of their children recalled such conversations. What is, perhaps, most striking is that the effect of child’s age on parents’ reports is the opposite of its effect on children’s reports (Table 8-C). About half of 9- to 11-year-old children and their parents report conversations about anti-drug ads. Among 16- to 18-year-olds, only one-fifth of the youth reported such conversations, while 90 percent of their parents recalled them.

Table 8-C
Percent who had conversations about anti-drug ads

Report type	9-11	12-13	14-15	16-18	Increase with youth age 16-18 vs. 9-11
Parent report	50.5	63.3	93.3	92.8	+42.3
Child report	49.6	40.1	31.0	21.1	-28.5

- Most other characteristics of parents and children did not matter in predicting talk about anti-drug ads. One exception was the association of sensation seeking with conversation about ads. There were no differences in reports among 9- to 11-year-olds. However, among older children, there were differences in child reports, but none in parent reports (see Tables 8-D and Detail Table 8-5). Among 12- to 13-year-olds and 14- to 18-year-olds, high sensation seekers reported less conversation with parents about anti-drug ads than did low sensation seekers.

Table 8-D
**Parent and child reports of talk about anti-drug ads by sensation seeking of child:
 Percent reporting such conversation**

Age of child	Parents		Children	
	High Sensation Seekers	Low Sensation Seekers	High Sensation Seekers	Low Sensation Seekers
9-11 Years	57.4	46.5	45.9	50.8
12 to 13 Years	59.7	66.4	29.3	48.8
14 to 18 Years	92.4	94.3	20.5	34.3

8.3 PARENTAL MONITORING OF CHILDREN

Parents report a fair amount of monitoring (average of 2.9 on 5 point scale) (Detail Table 8-2).¹ Reports of monitoring decline with children’s age (3.5 for 9 to 11 years old, vs. 2.5 for 14 to 18 years old). However, as with reports of talking, parent and child reports of monitoring are discrepant, with children reporting less monitoring on average than did parents.² In Table 8-E the percentages of parents and children who agree that the parents undertake the indicated activity always or almost always are presented.

- In all age groups, and for each type of monitoring activity, there is at least a 15 percent difference in parent-child reports (Detail Table 8-2).

¹ Based on average response to questions C1 through C5 of the Parent questionnaire. Monitoring behaviors asked about include knowing what the child is doing when away from home, having a pretty good idea of the child’s plans for the new day, not allowing them to hang out freely with friends without adult supervision, knowing their child’s friends, and setting weekend curfews.

² Based on question C35 of the Teen questionnaire and C29 of the Child questionnaire.

- Most parental and children’s characteristics do not matter much (Detail Table 8-5). Sensation seeking is an exception. Parents of high sensation seeking 12- to 13-year-olds and of 14- to 18-year-olds report less monitoring than parents of low sensation seekers (2.8 vs. 3.1 for youth aged 12-13 and 2.4 vs. 2.7 for older teens).

Table 8-E
Parent and child reports of monitoring

Report		9-11	12-13	14-15	16-18
Know what child is doing when away from home	Parent	78.2	66.4	61.4	49.1
	Child	49.5	52.7	48.0	40.8
Know child’s plan for next day	Parent	74.2	64.2	59.7	48.5
	Child	32.2	35.2	32.5	27.7
Limit time w/o adult supervision	Parent	55.5	33.8	28.6	16.4
	Child	34.9	15.1	7.8	5.5

8.4 PARENT-CHILD ACTIVITIES

Hand in hand with greater monitoring and parent-child talk, another goal of the campaign is to motivate parents to increase the time they spend with their children in entertaining activities. Questions about activities were asked only of parents, regarding each child in the sample. Youth were not asked these questions, so parent-child reports could not be compared.

- Parents of almost all children report they are engaging in some fun activities with their children. Nearly all parents of 9- to 18-year-olds (90.5%) reported engaging in some home (81.7%) and/or out of home fun activity (76.4%) with their child in the past week. It is only when the standard is pushed higher, to two or more activities in the past week, then some differentiation among parents appears (Table 8-F and Detail Table 8-3).
- Fewer parents claim twice-a-week activities with their older children (Table 8-F). However, this pattern is unsurprising since at older ages, children’s willingness to spend time with parents begins to compete more heavily with their desire to spend time with friends.

Table 8-F
Parent reports of activities by age of child: Percent engaging in activities more than once in the past week

Report	9-11	12-13	14-15	16-18
Did projects or activities with child at home	80.9	69.1	63.5	51.5
Went someplace for fun with child to do activity we both enjoy	66.3	58.3	49.0	38.3

- There are no other differences in reports of activities by characteristics of the parent or child (Detail Table 8-3).

Thus, parents already report that they are engaging with their children in fun activities, to a very substantial degree. This is particularly true for parents of younger children. The Media Campaign will not be able to be successful in this area with a goal of increasing the proportion of parents who do any activities with their children. Its success will only come with increases in the frequency of such activity.

8.5 PARENTS’ PRIOR INVOLVEMENT IN ACTIVITIES TO SUPPORT OPINIONS ABOUT DRUG USE

Since exposure to anti-drug advertising may increase activism around drug issues, parents were asked about their involvement in activities to support opinions about drug use. Parents reported a fairly low amount of involvement in activities (overall average=1.4, where 5 is the highest score—Detail Table 8-4).

- The most often mentioned activity was “expressed views to family members” (90.2%), and the least often were “written letter to political official/newspaper” (6.6%) and “called radio or TV call-in show” (5.5%).
- In general, there were no demographic differences in the frequency of participation in these activities. One exception is that African Americans reported significantly more involvement in four of the activities than whites: writing letters to politician/newspaper, calling in radio/TV shows, attending meetings/rallies, and joining groups actively working on the issues (see Detail Table 8-4, and Table 8-G). African Americans were not significantly different from Hispanics, except that they reported calling into radio/TV programs in larger proportions. Hispanics were not different from whites.

Table 8-G
Parents’ prior involvement in activities by ethnicity/race: Percent reporting participation

Race	Expressed views to family	Wrote letter to politician/newspaper	Called radio/TV show	Attended meeting/rally	Joined activist group
White	90.7	5.9	3.9	22.6	11.3
African American	91.1	10.7	14.9	33.1	17.2
Hispanic	88.9	5.4	5.9	25.5	13.7

8.6 CONCLUSIONS

Parents were asked to describe their activities as parents within the framework of the behaviors that the Media Campaign has advocated. In most cases parents already claim they are doing pretty well.

- Parents claim they talk with their children about drugs with some frequency. Between 70-82 percent claim they have talked with their children at least twice in the past 6 months.
- Parents claim they have talked about the anti-drug ads with their children. In particular 93 percent claim such conversations with their 14- to 18-year-old children.
- Parents claim a moderate amount of monitoring of their children's activities but it varies sharply with age. Between 50-75 percent claim they always or almost always "know what their child is doing when they are away from home," "know their child's plans for the next day." One-third or fewer claim they always or almost always "limit the time the child spends with other children without adult supervision," except among parents of 9- to 11-year-olds.
- Parents almost universally report that they do fun activities with their children, both at home and other places. An age effect appears only when parents who claim to do these fun activities twice a week or more are compared.

In contrast, when we asked the youth how often their parents did most of these activities, a substantially less positive picture emerged, particularly when we looked at the older youth.

- Seventy-eight percent of parents claimed to have two or more conversations about drugs with their 16- to 18-year-olds; only 48 percent of the youth of that age reported such conversations.
- Ninety-three percent of parents of 16- to 18-year-olds claimed to have discussed the anti-drug ads, but only 21 percent of the youth reported such conversations.
- Children provide much less positive reports of their parents monitoring activities. The gaps are between 10 percent and 40 percent in parents' and children's respective reports of "almost always" and "always" monitoring. In this case the gaps are the largest for the youngest children, where parents tend to claim they are doing the highest level of monitoring.
- No parallel youth data is available to the parent reports of engaging in fun activities.

The discrepancies reported here compare the populations of parents and children. In Appendix C the reports of parents and their own children with regard to these same behaviors are compared. They show low to moderate levels of agreement beyond the chance level, which is consistent with the results here. Parents and children seem sometimes to be describing different worlds.

There are three ways of explaining these discrepancies. One is simple measurement error, that the measures are simply not very good, and so no agreement is available on them between parents and children. However, this seems unlikely. As can be seen from both the tables in this chapter, and the parallel detail tables, there are sharp differences in these reported behaviors by the age of the child. Most of these differences make sense. It is unlikely that the measures would track age of child so closely if they were measuring nothing meaningful.

A second possibility is that parents are providing socially desirable responses to the questions, saying what they think they should be doing, rather than what they actually are doing. They then would tend to report much higher levels of these “good” behaviors than do their honestly reporting children.

The third possibility is that the youth are underreporting the behaviors because they are embarrassed to admit that their parents take such a large role in their lives. This would explain particularly the discrepancy among the oldest teens and their parents. A related explanation would be that youth are not always aware of what their parents know about them. For example, parents may actually know enough about what their young children are doing when they are away from home or what the child’s plans are for the next day to make a legitimate claim of “knowing,” but their children may not recognize their parents’ knowledge.

At this time it is not possible to sort out which of these later two explanations is most credible. Indeed it may be that both deserve some credit. Each explanation suggests, however, that at least one of the two reporting populations is offering a report of an attitude or an intention rather than a report of a behavior. However, for some of these outcomes, it is clear that there is much more room for detecting the Media Campaign’s influence if focus is placed on the children’s reports rather than the parents’ reports.

9. ATTITUDES ABOUT TALKING, PARENTAL MONITORING, AND CHILDREN'S DRUG USE

This chapter presents parents' reports of intentions, attitudes, self-efficacy, and perceived social expectations regarding talking with their children about drugs and about child monitoring. Also included is their perception of whether or not their children had used drugs in the past and their concern that their child might use drugs in the future. Both of those responses are compared to the prior use and future intended use actually expressed by youth.

9.1 INTENTIONS TO TALK ABOUT DRUGS

- Most parents said they were very likely or likely to talk to their child about drugs.¹ Table 9-A displays the combined proportions of parents who said either "very likely" or "likely" to talk about the four subjects (Detail Table 9-1-3 shows the proportion reporting "very likely").

Table 9-A
Parents' intentions to talk to their child about drug topics, by child's age:
Percent saying very likely or likely

Child's age	Family rules about using drugs	Specific things my child can do to stay away from drugs	Drug use in movies, music, and on TV	People we know who have gotten into trouble with drugs
9 to 11	84.6	86.8	74.9	61.6
12 to 13	88.4	86.8	72.9	69.0
14 to 15	86.8	87.7	74.4	70.1
16 to 18	80.6	78.5	60.7	72.9

- Intention to talk about "people we knew who have gotten into trouble with drugs" were less frequent than intentions to talk about the other three subjects.
- There was only a little variation in the intention to talk by age of child, although there was a small declining tendency to talk about the first three topics and an increasing tendency to talk about the fourth. There were no differences by other demographic characteristics.

9.1.1 Attitudes About Talking with Children About Drugs²

- On average, consistent with their intentions, parents report very positive attitudes toward talking with the children about drug use (Table 9-B and Detail Table 9-1-2).

¹ See question D1 of the Parent questionnaire.

² See question D2 of the Parent questionnaire.

- In all age groups, parents of African American and Hispanic children had more positive attitudes about talking than did parents of white children (Detail 9-1-2 and Table 9-B).

Table 9-B
Attitudes about talking by ethnicity/race: Mean score (where 7=very positive)

Race/ethnicity	9 to 11	12 to 13	14 to 18
White	6.2	6.2	6.0
African American	6.5	6.6	6.4
Hispanic	6.5	6.4	6.3

9.1.2 Social Expectations About Talking³

- Between one-half and two-thirds of all parents reported that people important to them thought they “definitely should” talk to their child about drug use (about 57% to 65% in different child age groups; Detail Table 9-1-2).
- There were no significant differences by child’s age in perceived expectations to talk.
- There were some differences by ethnicity/race on social expectations to talk (Detail Table 9-1-2). More African American parents of 14- to 18-year-olds report strong social expectation of talking with their children than white parents of youth in the same age range. Other social and ethnic differences were not statistically significant (Table 9-C).

Table 9-C
Perceived social expectations to talk with child about drugs by race/ethnicity: Percent reporting strong expectations

Race/ethnicity	9 to 11	12 to 13	14 to 18
White	53.2	60.1	58.8
African American	65.4	66.1	72.5
Hispanic	60.6	66.7	68.9

9.1.3 Self-Efficacy About Talking to Children About Drugs

- On average, parents reported moderately high self-efficacy about talking to their children about drugs (mean=1.5, on a scale from -2 to +2 where +2 is high self-efficacy; Detail Table 9-1-1).

³ See question D4 of the Parent questionnaire.

- Self-efficacy to discuss drugs is the highest if the discussion is motivated by general drug use questions and the lowest if initiated in a context of poor parent-child relationships; this pattern does not seem to vary by age of the respondent’s child (Table 9-D and Detail Table 9 -1-1).

**Table 9-D
Self-efficacy to talk with children by age of child:
Percent saying very sure they could talk**

Age of child	Child asked questions about drug use in general	Child asked specific things to do to avoid drugs	Child and I were having conflicts about other things and relationship was tense	Child asked me about my own past use of drugs
9 to 11	76.6	74.0	44.0	62.5
12 to 13	78.1	73.6	42.9	64.0
14 to 15	78.7	75.6	41.3	67.2
16 to 18	75.3	72.5	34.2	67.0

9.1.4 Children’s Perceptions of Talking to Parents About Drugs

- Although parents seem to report relatively strong intentions, attitudes, and self-efficacy about talking with their children about drugs, most children reported that it was not easy to talk to their parents about drugs.
- Although ease of such conversation increases significantly by age, only 16.2 percent (12- to 13-year-olds) to 20.9 percent (16- to 18-year-olds) reported that it was “very easy” to talk to their parents on this topic (Detail Table 9-1-2).

9.2 PARENTAL MONITORING

9.2.1 Intentions to Monitor Children’s Behavior⁴

- In general, parents expressed moderately strong intentions to monitor (on a –2 to +2 scale, the average across children of all ages=1.4).
- Average scores on intentions to monitor were highest for parents of younger children and decreased as the children were older (1.6 for 9- to 11-year-olds, and 1.1 for 16- to 18-year-olds; Detail Table 9-2-2).
- Regardless of child’s age, parents tended to favor curfews as a monitoring strategy above other methods: between 69 percent to 92 percent of parents said they planned to implement curfews in the next 12 months (Table 9-E and Detail Table 9-2-2).

⁴ See question C9 of the Parent questionnaire.

Table 9-E
Intentions to monitor in the next 12 months: Percent reporting “very likely”

Age of child	Require child to be home at specific time at night	Limit the time child spends with other children without adult supervision	Know what child is doing when s/he is away from home	Personally know child’s friends well	Know what child’s plans are for the coming day
9 to 11	92.2	67.9	75.2	64.4	68.9
12 to 13	85.4	58.4	65.9	55.8	60.9
14 to 15	84.0	48.7	62.1	54.8	52.7
16 to 18	69.2	27.3	46.9	44.9	43.2

- Limiting time without adult supervision is less likely to be practiced by parents of older children, as only 27.3 percent of parents of children 14 to 18 years old reported that they were very likely to practice this method of monitoring.
- Except for having a specific time for returning home at night, less than half of the parents of children aged 16-18 years expected to implement any of the five monitoring methods.

9.2.2 Beliefs about Effectiveness of Monitoring

In order to understand what types of concerns might drive parental monitoring, parents were asked their thoughts about certain costs and benefits associated with monitoring.

- In general, parents of younger children had more faith in the efficacy of monitoring strategies to produce positive outcomes and less concern about violating privacy than parents of older children (Table 9-F and Detail Table 9-2-1).

Table 9-F
Beliefs about consequences of monitoring:
Percent holding strong pro-monitoring beliefs

Age of child	Make it more likely that child will do well in school	Make me feel I am doing my job as a parent	Make it less likely my child will try any drug, even once or twice	Make it less likely my child will use any drug nearly every month	Make my child feel I am invading his/her privacy (disagree)
9 to 11	67.1	61.4	57.2	NA	24.6
12 to 13	62.6	57.1	48.1	51.8	18.0
14 to 15	57.2	51.6	40.7	44.7	16.9
16 to 18	42.0	39.6	36.9	39.1	14.7

NOTES: “Please indicate how much you disagree or agree with each of the following statements. Think about the *next 12 months*. Closely monitoring {CHILD NAME-FILL}’s daily activities will...”

NA – not asked.

- Only half or fewer of the parents strongly agreed that monitoring would have positive consequences for their child’s future drug use. Parents are not convinced that their monitoring is key to preventing youth drug use, particularly for their older children.
- Only 15 percent of parents with children aged 14-18 strongly reject the idea that monitoring would make their children feel their privacy had been violated. So 85 percent appear to anticipate opposition or resentment from their older child.
- There were some differential effects of race/ethnicity on overall monitoring beliefs (Table 9-G and Detail Table 9 -2-3). Hispanic tended to hold fewer pro-monitoring beliefs than other parents.

Table 9-G
Average score on monitoring consequences by age of child and race/ethnicity

Race/ethnicity	9 to 11	12 to 13	14 to 16
White	1.3	1.2	1.0
African American	1.3	1.0	1.0
Hispanic	1.0	0.9	0.8

9.2.3 Attitudes Toward Monitoring

- In general, parents held strong pro-monitoring attitudes. On a score from 1 to 7, where 7 reflects positive attitude, the average score across all parents was 6.2.
- While parents of all children thought highly of the abstract value of monitoring, they tended to express somewhat less positive attitudes about monitoring if their children are older (average=6.5 for 9- to 11-year-olds vs. 5.9 for 16- to 18-year-olds) (Detail Table 9-2-3).

9.3 CONCERN ABOUT YOUTH DRUG USE

9.3.1 Perceived Likelihood of Past Use

- Most parents thought that their child had not used marijuana in the past 12 months (about 95% of all parents).
- However, there were some age-related differences, as parents’ perceptions that their children had never used marijuana declined with children’s ages (Table 9-H and Detail Table 9-3-1).

Congruence with Youth Reports of Use

- Parent and youth reports of marijuana use at the population level were remarkably congruent for most age groups except among the 16- to 18-year-olds. Parents of children in this age group perceived less marijuana use in the past 12 months than youth reported (Table 9-H).

Table 9-H
Parent and youth reports of marijuana use in the past 12 months:
Percent never used

Report type	9 to 11	12 to 13	14 to 15	16 to 18
Parent report	99.8	97.1	91.0	80.5
Child report	99.2	96.7	88.8	71.0

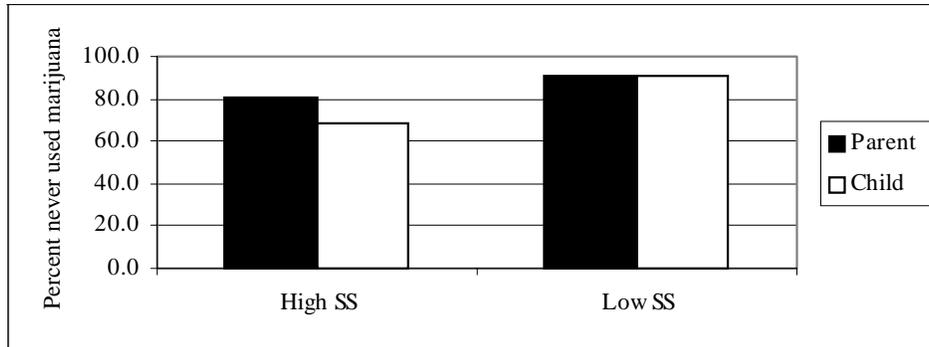
- Parents’ perceptions of inhalant use were similarly congruent with children’s reports of prior use, even among 16- to 18-year-olds (Table 9-I). Parents were not concerned about their children’s use in the previous 12 months, and their children rarely reported such use.

Table 9-I
Parent and youth reports of inhalant use in the past 12 months:
Percent never used

Report type	9 to 11	12 to 13	14 to 15	16 to 18
Parent report	100.0	99.3	98.9	97.8
Child report	99.6	98.9	97.6	96.9

- Parents of 14- to 18-year-olds who are high sensation seekers reported less “never use” than parents of low sensation seekers in the same age group (80.4 % vs. 92.8%; Detail Table 9-3-1).
- Interestingly, parent-child reports were more congruent for low sensation seekers in the latter age group than for high sensation seekers (see Figure 9-A).

Figure 9-A
Reports of prior behavior by child's sensation seeking



9.3.2 Perceived Likelihood of Future Use

- Most parents were less certain about future trial and regular use of marijuana than they were about past use (Table 9-J and Detail Table 9-3-1). However, they were more confident that children would avoid future regular use than trial use.⁵

Table 9-J
Parent perceptions of prior and future marijuana use by children

Use	9 to 11	12 to 13	14 to 15	16 to 18
Child's prior use (% never used in past 12 months)	99.8	97.1	91.0	80.5
Child's future use (% very likely child will not use even once or twice)	NA	86.4	75.3	69.8
Child's future use (% very likely child will not use every month)	95.0	90.7	83.4	76.1

- Among 9- to 11-year-olds, fewer African American and Hispanic parents than white parents perceived that their child would be very unlikely to use marijuana regularly in the next 12 months (88% and 91.7%, respectively, vs. 97.3% for whites; Detail Table 9-3-1). This pattern persisted among parents of older children as well.

Congruence of Parent-Youth Reports of Intention

- As with prior behavior, youth reports of intentions to use marijuana even once or twice were congruent with parents' reports (Detail Table 9-3-1) for youth aged 12 to 13 and 14 to 15.

⁵ Based on question E7 of the Parent questionnaire.

- Interestingly, while the overall percent of youth reporting “definitely not” on intention for trial tended to be equal to or lower relative to parents’ perceptions, the pattern was different for intentions for regular use, particularly for minorities. For 12- to 13-year-old African Americans and Hispanics, parents reported more often that they thought their children might use marijuana *regularly* than children themselves reported (Table 9-K). Among 14- to 18-year-olds, parent-child reports were similarly incongruent among African Americans: parents projected a higher level of use for their children than did the children themselves.

Table 9-K
Parent-child estimates of regular use intention by ethnicity

Age	White	African American	Hispanic
12 to 13			
Parent	93.5	86.3	82.6
Child	94.6	97.0	92.6
14 to 18			
Parent	82.2	74.0	72.8
Child	83.1	86.2	76.1

- Similarly, parent estimates of future trial or regular use by children did not vary by urbanity, but among 12- to 13-year-olds living in urban areas, children’s reported intentions to definitely not use marijuana regularly were greater than parents’ estimates of such intention (94.8% vs. 87.3%, Detail Table 9-3-1).
- Parent estimates of trial and regular use intention did not differ by child’s sensation seeking for 12- to 13-year-olds. However, for 14- to 18-year-olds, parents of high sensation seekers reported fewer definitely not intentions for trial and regular use compared to parents of low sensation seekers (Table 9-L and Detail Table 9-3-1).
- Further, among low sensation-seeking teens, parent tended to perceive lower rates of definitely no intention than youth themselves reported.

Table 9-L
Parent-child estimates of intention by child’s sensation seeking:
Percent definitely not

Age	Trial		Regular use	
	High SS	Low SS	High SS	Low SS
12 to 13 years				
Parent	82.9	88.9	89.7	91.5
Child	76.7	95.5	89.2	98.4
14 to 18 years				
Parent	66.7	80.9	75.6	84.6
Child	55.6	84.0	75.3	93.2

9.4 SUMMARY

The majority of parents expressed strong intentions to talk about drugs with their child as well as to monitor. Thus, overall talking and monitoring intentions may not shift significantly over the course of the campaign. However, there is room for some movement on individual measures of intention to talk and monitor. For instance, the campaign might yield more obvious changes if the focus was on increasing parent-child talks about particular drug-related topics, rather than increasing the amount or likelihood of any conversation. Similarly, while parents' overall intention to monitor is high, they do express preferences for particular monitoring strategies more than others, and hence the Media Campaign might increase focus on those that are currently less popular.

Self-efficacy and norms regarding talking are not as strongly pro-talking as expected. About one-third of parents felt that there was less than strong approval for talking with children about drugs, and parents felt less self-efficacy to talk with children under certain conditions, such as when in conflict with their children, or when they were asked about their own drug use. It is also important to re-iterate that even though parents say they intend to talk with their children, the majority of children report that they are not at ease during such conversations.

Interestingly, while parents expressed relatively strong intentions to monitor, and generally positive attitudes about the value of monitoring, they had less strong hopes that monitoring would positively affect the likelihood that their child would try or use drugs regularly. An essential assumption of the parenting Media Campaign is that parental monitoring and other parenting behaviors are crucial determinants of children's use of drugs. If parents do not share this assumption, they may be less willing to take the Media Campaign's advice. Future waves of NSPY will examine whether this causal link between monitoring behaviors and drug use is more accepted than it is now.

Most parents think their children will not use drugs in the future, and youth reports of intention tend to agree highly with parents' estimates. However these are results from population-level comparisons. On average, parents' predictions are in line with the average child's expectations for use. In future analyses the study will report whether this population-level prediction translates into a household level judgment. Are parents' predictions of future use congruent with their own children's intentions for use?

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APPENDIX A. SAMPLE DESIGN, DEVELOPMENT OF WEIGHTS, CONFIDENCE INTERVALS AND DATA SUPPRESSION, AND GEOGRAPHY

This appendix provides a more detailed discussion of the same points discussed in Chapter 2 of this report. However, it is still a condensed discussion. A more detailed report on the sampling plan is available as Chapter 2 of the overall Evaluation Plan from the National Institute on Drug Abuse (NIDA). The appendix is separated into four main sections along the lines suggested by the title.

A.1 SAMPLE DESIGN

The youth and their parents were found by door-to-door screening of a scientifically selected sample of about 34,700 dwelling units. These dwelling units were spread across about 1,300 neighborhoods in 90 primary sampling units (PSUs). The sample was selected in such a manner as to provide an efficient and nearly unbiased cross-section of America's youth and their parents. All types of residential housing were included in the sample. Youth living in institutions, group homes, and dormitories were excluded.

The sampling was arranged to get adequate numbers of youth in each of three targeted age ranges: 9 to 11, 12 to 13, and 14 to 18. These age ranges were judged to be important analytically for evaluating the impact of the Media Campaign. Within households with multiple eligible youth, up to two youth were selected.

Parents were defined to include natural parents, adoptive parents, and foster parents who lived in the same household as the sample youth. Stepparents were also usually treated the same as parents unless they had lived with the child for less than 6 months. When there were no parents present, an adult caregiver was usually identified and interviewed in the same manner as actual parents. No absentee parents were selected. When there was more than one parent or caregiver present, one was randomly selected. No preference was given to selecting mothers over fathers. Parents or caregivers of both genders were selected at equal rates. This was done to be able to measure the impact of the Media Campaign separately on mothers and fathers. When there were two sample youth who were not siblings living in the same household, a parent figure was selected for each.

The detail on sample selection is split into two major subsections. The first is on the selection of the screening sample. The second is on the selection of youth and parents.

A.1.2 Selection of Screening Sample

The screening sample was selected using a dual-frame multistage design. One frame was of housing built by late 1991 as listed by Westat in a sample of areas using field personnel and maps. This frame is called the area frame. The second frame consists of building permits issued for new housing between January 1990 and December 1998. The dual-frame approach was used to improve survey reliability. By sampling new construction from permits, it was possible to spread the sample out more evenly, which results in improved reliability (Judkins, Cadell, and Sczerba, 2000). Housing built in 1990 and 1991 had two

chances of selection since it appears in both frames. To correct for this overcoverage, the screening questionnaire instructs the interviewers to ask the age of the housing for sample selected from the area frame. Any housing in the area frame built after April 1, 1990 is ineligible for the survey. Housing built in the first 3 months of 1990 is kept under the assumption that there is some lag between the issuance of a permit and the construction of the building. Housing built after 1998 had no chance of selection in either frame. Also, a house has no chance of selection if built during the 1990s in jurisdictions where no permit is required. Finally, modular housing built during the 1990s was inadvertently omitted from the permit sample. These three factors imply a household coverage rate of about 98 percent.

New mobile homes placed on sites between 1991 and 2000 had a chance of selection through the missed mobile home procedure. This worked as follows. In a sample of segments, interviewers were instructed to canvas the segment on their first visit for mobile homes and to compare what they found with what was found when the segment was first listed in 1991. In this sample of segments, any new mobile homes found were added to the sample. If there were more than nine new mobile homes in a segment (as might be the case with a new mobile home park), a subsample was drawn and appropriately weighted.

A.1.2.1 Selection of the Area Screening Sample

The area screening sample was selected in three stages. The first stage consisted of selecting a sample of PSUs. The PSUs are generally metropolitan areas and groups of nonmetropolitan counties. The second stage consisted of segments. Each segment is a block or group of contiguous blocks with a minimum housing count in 1990 of about 60. The third stage consists of individual dwelling units.

A.1.2.1.1 PSU Selection

The PSUs were selected from a design stratified by region, metropolitan status, per capita income, percentage minority population, and PSU size. The National Survey of Parents and Youth (NSPY) PSUs were drawn as a subset of Westat's 1991 master sample. This master sample comprises 100 PSUs. Of these, 90 were selected for NSPY. One reason for using a subset of these 100 instead of selecting a fresh set of 90 PSUs was that Westat has experienced interviewers in these PSUs. In addition, it made it possible to use area listings from a prior survey, thereby reducing the area sampling costs.

The following paragraphs describe how the 100-PSU master sample was drawn and how it was subsampled for NSPY use. The PSUs in the underlying frame were constructed using 1990 Decennial Census information based on the following general criteria:

- Each PSU consists of a single county, a group of counties, or a metropolitan statistical area (MSA).
- The PSUs are geographically contiguous, are mutually exclusive, and cover the United States.
- Nonmetropolitan PSUs do not cross state boundaries.

- Each PSU had at least 15,000 total population as of 1990.
- Each PSU is designed to be as easily traversable by an interviewer or lister as is possible given population density, minimum size constraints, and natural topography.

This constructed frame includes 1,404 PSUs, with no PSU having a 1990 population larger than 5,400,000 (the New York, Chicago, and Los Angeles PMSAs were divided into three, two, and two PSUs, respectively). From this constructed frame, 100 PSUs were selected in 1991 for the master sample.

The 100-PSU master sample was selected using probability-proportionate-to-size (PPS) sampling with 1990 population as a measure of size. Twenty-four PSUs with populations greater than 2,100,000 were certainty selections (selected with probability 1). The remaining 1,380 PSUs were assigned to 38 strata for PSU selection. These strata were defined to satisfy the following criteria:

- Each stratum represents a 1990 population of roughly 4 to 5 million persons.
- The 38 strata nest within eight primary strata were defined by census region (Northeast, South, Midwest, and West) and PSU metropolitan/nonmetropolitan status.
- The strata within each primary stratum were constructed to be heterogeneous in PSU population size (for metropolitan primary strata), per capita income, and percentage minority population.

Using the Durbin-Brewer method (Durbin, 1967), 76 PSUs were sampled from the 38 strata (two PSUs per stratum) with probability proportionate to their 1990 population.

The NSPY PSU sample is a random subsample of 90 PSUs from the 100-PSU master sample. The noncertainty strata were grouped into superstrata. One stratum was then selected from each superstratum. Within the selected stratum, one of the two sample PSUs was randomly deselected. In order to eliminate 10 PSUs, 10 superstrata were formed, each with the same number of strata. The superstrata were formed from the 38 noncertainty strata and two pairs of small certainty PSUs. This yielded an even four strata per superstratum. Each superstratum contains eight sample PSUs, each of which represents a population of approximately 2.1 million people. One PSU was dropped from each superstratum for a total of 10 eliminated PSUs, as required.

In forming the superstrata, there was some grouping of strata across regions because not every region has a number of strata that is a multiple of four and higher priority was given to avoiding grouping across metropolitan status. This approach added some variance to regional estimates. To counteract this increased variance, a special set of weights was built for regional analyses. For this special set of weights, the probabilities of retention associated with the superstrata were ignored and, instead, the PSUs in each region were weighted by metropolitan status up to the total population reported in those areas in 1990. This approach reduces variance on regional analyses but increase bias and variances for other statistics. Therefore, the regional weights are only used for regional analyses.

A.1.2.1.2 Area Segment Selection

NSPY segments consist of groups of neighboring blocks with a minimum count of 60 dwelling units in the 1990 Census. By using blocks instead of larger units of geography, such as tracts or official block groups, the size of the listing task is reduced. However, some blocks have very small and even zero populations. These were collapsed to meet the minimum requirement of 60 dwelling units. A total of 1,180 such segments were selected for Wave 1. The average sample size for each segment was about 27 dwelling units. The large minimum size of 60 dwelling units was used to ensure that next door neighbors would not generally both be in the sample. This has the advantage of reducing contamination of interviews by prior interviews in neighboring houses.

The segments for Wave 1 are a subset of segments originally selected and listed for another survey in late 1991. (The listing process consists of sending a field worker out to every segment with a map and having them prepare a list of housing within the segment.) In addition to saving the cost of a new listing of 1,180 segments, the use of these old listings had the advantage of eliminating most housing built during the 1990s. This might be a drawback for another survey, but the NSPY has a separate sample of building permits to cover 1990s construction. Any dwelling units built in the 1990s in area segments must be screened out. So using an old list actually makes the total data collection more efficient.

A fixed whole number of segments was allocated to each PSU based on the projected count of 9- to 18-year-olds in 1999 for the stratum that the PSU represents. From the earlier survey, there was a total of 2,065 segments available. These segments had been selected in a systematic PPS fashion,¹ where the measure of size counted African American and Hispanic households more heavily than other households. This approach resulted in an oversample of segments with strong concentrations of minority population. This oversample was not desired for NSPY. Since just 1,180 of the 2,065 segments were required, the segments were subsampled with probabilities such that overall probability of selection became proportional to total households without any special emphasis on minority households. This was done by using a measure of size (MOS) defined proportionally to the ratio of desired overall probability to the original probability:

$$SEGMOS = \frac{1990 \text{ households in segment}}{\text{old MOS for original survey}}.$$

A.1.2.1.3 Dwelling Unit Selection in Area Segments

As mentioned above, the 1,180 segments had been listed by contractor staff in late 1991 and early 1992. These lists of housing addresses were keyed. From the keyed files, a systematic PPS sample was drawn with a fixed national target of 30,993 dwelling units. (When combined with the permit sample of 3,407 newly built dwelling units, the total initial sample size was 34,400.) The measure of size was defined as the weight for the segment so that the final dwelling unit sample would be closer to an equi-probability sample (i.e., a sample in

¹ A systematic PPS selection is one where the frame is systematically sorted and then an unequal probability sample is drawn with PPS. The systematic sorting induces a set of joint probabilities of selection that minimizes the total variance.

which every dwelling unit has the same chance of selection). These 30,993 dwelling units were split into two release groups by segment, with about 590 segments in each release group.

For a subsample of the sample dwelling units, there was a quality control check on the original 1991/1992 listing. For all single family housing, the interviewer checked for hidden apartments (such as converted basements, garages, and attics) that might have been missed by the lister. Any detected hidden apartments were added to the sample. Also, in a subsample of multifamily housing structures, the interviewer checked for missed apartments. Using these procedures, 192 missed dwelling units were added to the sample. Also, as mentioned above, there was a check for new mobile homes. This procedure added 99 sample mobile homes to the sample. Thus the combined sample from area segments was 31,284 dwelling units.

A.1.2.1.4 Selection of the Permit Screening Sample

A separate building permit sample was drawn for Wave 1 of NSPY to prevent problems caused by outdated information on block sizes. The procedures for selecting the area segment involve sampling with PPS in the 1990 Census. PPS sampling with 1990 data strongly reduces between-segment variation to the extent that there is a strong correlation between total population in 1990 and eligible population in 1999. New construction weakens that correlation. To avoid the potentially high between-segment variance caused by a weakened correlation, we interviewed only pre-1990 census housing from the area segments. This was accomplished by asking the occupants when their dwelling unit was constructed and then terminating the screening process if the unit was built after April 1, 1990. A separate sample of post-census housing was drawn from a frame of building permits. This procedure was introduced at the U.S. Census Bureau in the 1960s and continues to be used for all major household surveys conducted by it. It is used at Westat for large surveys conducted late in a decade.

Permit sampling is possible because most localities require that a permit be obtained before building a residential structure and because the U.S. Census Bureau conducts a regular census of permit activity. This census of local governments is conducted every month for active offices and annually for less active offices. A benefit of the census is that it can be used to select specific offices and months from which to draw an efficient sample of permits for national estimates.

The stages of permit sampling are similar to those in the area frame, but there were five instead of three. First, only permits issued within the 90 sample PSUs may be selected. Next, a sample of building permit offices (BPOs) was selected. These are the local county and city offices that issue building permits and keep records about them. At the third stage, a sample of segments was selected, where a segment is defined to be the set of permits issued by an office within a specific time frame. At the fourth stage, individual permits were selected. After selection of the permits, a lister visited all the building sites for the selected permits to list all the housing units that are found there. After listing of housing units within sample segments, the final sample of dwelling units was selected.

The total dwelling unit sample size from the permit frame was set so that the proportion of the total sample selected through the permit frame would roughly equal the proportion of the total national housing stock that was built between April 1, 1990, and the end of 1998. Statistics from the U.S. Census Bureau indicated that about 10 percent of the housing stock as of the end of 1998 met this criterion. The dwelling unit sample size from the permit frame was 3,407, equal to about 10 percent of the total initial sample.

A.2 DEVELOPMENT OF WEIGHTS

A.2.1 Introduction

An analysis weight was calculated for each completed interview. Different weights were prepared for different types of analyses. There were six final weights in all, three for national analyses and three for regional analyses. There are national weights for youth, for parents, and for youth-parent dyads. These repeat for regional analyses. These weights are used to reflect selection probabilities and to compensate for nonresponse and undercoverage. The adjustments for undercoverage involve a process called raking. In the raking process, the weights are adjusted in such a manner that the sums of weights for important domains agree with those from independent more reliable sources. The final weight for a respondent, including nonresponse adjustments and raking, can be viewed as the number of population members that each respondent represents.

A.2.2 Baseweights

Baseweights are used to reflect a person's probability of selection into the sample. A baseweight is defined as one over the probability of selection. Thus, people with small probabilities of selection get large baseweights and those with large probabilities get small baseweights. If there were no nonresponse or undercoverage, these baseweights would yield unbiased estimates of population parameters such as the percent of youth who engage in a particular behavior.

Calculation of the baseweights was done by considering the probability of selection at each stage: PSU, segment, dwelling unit, and person. The calculation of these probabilities at each stage is fairly straightforward. However, since the person selection can only be carried out in households where the screener is completed, the person-level baseweight also reflects nonresponse adjustment and, in the case of the parent weights, an adjustment for household undercoverage.

The baseweight for a dwelling unit is generally

$$BW_{DUi} = \frac{1}{\Pr\{\text{PSU}\} \Pr\{\text{segment} \mid \text{PSU}\} \Pr\{\text{DU} \mid \text{segment}\}}.$$

For permit segments, there are also some adjustments for failure to find the permits for a particular segment and for the lack of coverage of new housing in jurisdictions where

building permits are not required. These adjustments were based on statistics from the Census Bureau's reports on construction starts.

These dwelling unit-level baseweights were then adjusted for screener nonresponse as discussed in Section A.2.3 below. After adjustment for screener nonresponse, the adjusted weight was further adjusted for screener-based subsampling. Dwelling units had been pre-assigned to three screening groups: *A*, *AB*, and *ABC*. Dwelling units in the *A* screening group were only retained in sample if there was a youth aged 12 to 13 present in the dwelling unit. Dwelling units in the *AB* screening group were only retained in sample if there was a youth aged 9 to 13 present. Dwelling units in the *ABC* screening group were only retained in sample if there was a youth aged 9 to 18 present. These rules were developed as a means to efficiently oversample dwelling units containing youth aged 12 to 13 and (to a lesser extent) those containing youth aged 9 to 11. Based on these screening rules, all dwelling units with youth aged 12 to 13 were retained with certainty so no adjustment was required to their weights. However, those dwelling units with a youth aged 9 to 11 present, but no youth aged 12 to 13, had a probability of retention of 0.7, so their weights were adjusted upward by a factor of 1.4286. Similarly, those dwelling units with a youth aged 14 to 18 present, but none aged 9 to 13, had a probability of retention of just 0.45, so their weights were adjusted upward by a factor of 2.2222.

After this stage in the calculation, different paths were taken for the calculation of youth and parent baseweights. The youth path is described first.

There were three age classes for youth sampling purposes: 9-11, 12-13, and 14-18. If there were youth present in all three age ranges, the first step in youth subsampling was to select two out the three age ranges. The 12-13 range was always selected with certainty. One of the other two was selected with equal probability. So the first component in the youth probability of selection for youth aged 9-11 or 14-18 in such households was a factor of 0.5. Next, within each sample age range, one youth was selected from however many were present. For example, if there were 4 youth present in an age range, then the probability of selection within the range was 0.25. The two factors were multiplied together to create a youth within-household probability of selection. The youth baseweight was then calculated as the quotient of the adjusted baseweight for the household divided by the within-household probability of selection for the youth.

The parental probability of selection was more complex. In simple nuclear families, the probability of selection for a parent was simply 1.0 for single-parent households and 0.5 for two-parent households, but a variety of other living arrangements were encountered. Some households contain nephews and nieces of the householder where the householder or his/her spouse is reported as the caregiver for the nephew or niece, but not both are so reported. Sometimes, one or two parents of the nephew or niece are present. Sometimes a grandparent is considered the caregiver of the nephew or niece. Other households contain couples who are not married but each have their own children. Some households contain boarders, housekeepers, or nannies who have their own children present.

When one youth was selected, a random parent/caregiver was selected from the set of parents and caregivers for that youth. When two siblings were selected, a random parent/caregiver was selected from the set of parents and caregivers identified for either

sibling. When two youth were selected who were not siblings, then one parent/caregiver was selected from the “pool” of parents and caregivers for each. If these pools overlapped, then it might still be the case that just one parent figure was selected. So the parent’s probabilities of selection depended on their relationship to the youth in the household. While the relationship of every adult in the household was established to the sample children, this information was not collected about nonsample children. These relationship data were imputed using the available data about household composition. Each parent and caregiver’s probability of selection was then computed over all possible youth samples from the household.

Given the complexity of the parent/caregiver concept for NSPY, it was realized that no post-stratification or raking to independent estimates of parents would be possible. In order to correct for undercoverage despite the lack of ability to perform such adjustment, the decision was made to rake the household weights prior to applying the within-household probabilities of selection for parents. This raking is discussed below in Section A.2.4.

A.2.3 Nonresponse Adjustments

In general, it is hoped that there are groups of households where the decision to respond to a survey is unrelated to substantive characteristics of interest such as substance abuse. Complex modeling techniques were employed to find groups of households with difference response rates. The variables that were available to define such groups were mostly from the 1990 Decennial Census and described the block groups containing the households. Within a group, the weighted response rate was calculated. The baseweight is then divided by the group response rate to obtain the nonresponse-adjusted weight for a household. Households in groups with low response rates received large upward adjustments in their weights. Intuitively, this means that those hard-to-reach households that are interviewed despite being hard to reach end up receiving larger weights than households that are easy to reach. If the groups are formed well, then this procedure can eliminate nonresponse bias. If too many are formed, however, the variation in weights caused by groups with low response rates can hurt survey reliability.

The goal was to develop procedures that would form enough but not too many groups. To this end, special software was created (built on top of data mining software) to form the groups. A set of about 60 household characteristics was used in conjunction with the special software. Some examples of the characteristics used include local percentages of persons in certain age groups, persons of certain race and ethnicity, homeowners versus renters, persons in mobile homes, U.S. citizens versus noncitizens, and persons with incomes below the poverty level.

This type of adjustment was done separately for the doorstep and roster phases of the screener, for youth nonresponse, for parent nonresponse, and for dyad nonresponse.

Screener Nonresponse Adjustment

This adjustment was done in two phases. The first phase was to adjust for doorstep nonresponse where it was never determined whether eligible youth were present at the

address. The second phase was to adjust for roster nonresponse where it was known that the household did contain eligible youth, but it was not possible to prepare a household roster and select a sample of youth and parents.

In the doorstep phase, a dwelling unit was considered to be a respondent if information about the presence of children had been collected from either the occupants of the household or from their neighbors. In addition, if the dwelling unit was selected in an area segment and was not a mobile home, then information on the age of the structure was required in order to be considered a complete doorstep screener. As mentioned in Appendix B, the screener response rate was 95.1 percent. The adjustment factors for screener nonresponse varied from 1.0 to 1.7.

In the roster phase, an eligible household was considered to be a respondent if an adult resident of the household had been found who was willing to provide a roster of the occupants of the household, their ages, and their relationships to the sample children. If any of this information was withheld then it was impossible to select the youth and parent sample so the household was classified as a nonrespondent. As mentioned in Appendix B, the roster response rate was 74.4 percent. The adjustment factors for roster nonresponse varied from 1.1 to 1.6.

Youth

Youth who answered D13 or any subsequent question were considered respondents. This was the last question on general ad exposure prior to prompting their recall with a display of several real advertisements. Nonrespondents included those whose parents refused consent or otherwise failed to provide consent, those who refused personal assent, and those who were just never reached to do the interview for one reason or another. Among those who did not complete the questionnaire, a difference was drawn between those who physically or mentally were incapable of completing it and those who simply chose not to. The first group was considered to be ineligible sample youth rather than nonresponding sample youth. The distinction matters only in that the weight of ineligible youth is not redistributed to responding youth through the nonresponse adjustment. Included in the category of ineligible youth were those who could not communicate in English or Spanish. Since the television and radio components of the Media Campaign were only in these languages, it seemed appropriate to classify those who cannot communicate in either language as ineligible for the evaluation. Also potentially included in the ineligible youth category are young people who have stepped into parental roles for other youth aged 9 to 18. This might occur by reason of marrying an older person with such youth or by reason of caring for younger siblings.

The set of the same 60 household characteristics used for doorstep and roster nonresponse adjustment, as well as some additional characteristics, were used in conjunction with special adjustment software to develop an appropriate set of response cells for all sampled eligible youth. The additional characteristics included items such as whether both of the youth's parents were in the household, whether the youth was an only child, the total number of youth living in the household, and whether there was a nonrelative living in the household. All of these variables were obtained from the household roster. The resulting set of response cells was then used to adjust the weights of the respondents at the youth level. As mentioned in Appendix B, the youth response rate was 90.7 percent. The adjustment factors for youth nonresponse varied from 1.0 to 1.5.

Parent

The parent nonresponse adjustment procedure was very similar to that for youth. Parents had to complete question F4 or a later question in order to be considered complete. Parents who were too ill to complete the questionnaire, physically or mentally impaired, or could only communicate in a language other than English or Spanish were considered ineligible. . As mentioned in Appendix B, the youth response rate was 88.4 percent. The adjustment factors for parent nonresponse varied from 1.0 to 1.5.

Youth-Parent Dyads

Respondents for this analysis were defined as youth who responded and whose parents also responded to the survey. Therefore, both the youth and the parent had to be eligible and have completed their respective surveys to count as a respondent. Nonrespondents included all eligible nonresponding youth, but also included any youth who may have responded but whose parent did not. Youth who were not eligible for the youth weights were also not eligible for dyad analysis. Youth who did not have corresponding sampled parent interviews (such as emancipated youth or married youth) were considered ineligible for this set of weights. Also, youth who were eligible and completed an interview but whose parents were ineligible were considered ineligible for the Youth-Parent dyad weights.

The same characteristics used for youth nonresponse adjustment were used for dyad nonresponse adjustment. Again, the special adjustment software was implemented to define appropriate nonresponse adjustment cells, and weighting adjustments were computed using that set of cells. The dyad response rate was 85.7 percent. The adjustment factors for dyad nonresponse varied from 1.1 to 1.6.

A.2.4 Raking

Raking is a commonly used procedure in which survey estimates are controlled to marginal population totals. In theory, the estimates should differ from the population values only as a result of sampling error. In practice, other error sources such as residual nonresponse and coverage errors still may have an important effect on the accuracy of the estimates. The goal of raking is to reduce biases due to undercoverage and nonresponse, and to reduce the sampling error of the estimates. Raking may be thought of as an iterative form of poststratification, in which the weights are consecutively ratio-adjusted to multiple sets of control totals until the resulting weights converge to the control totals in each dimension. The sample sizes of the marginal distributions are the important determinants of the stability of the raking procedure, not the cells formed by a complete cross-classification of the variables. This permits the use of more auxiliary variables or control totals than in poststratification. For this reason we chose to rake the household, youth, and dyad weights rather than poststratify them. However, when sample sizes permitted some raking dimensions were defined by crossing two variables to preserve the correlation structure in the data.

The parent weights were not raked because no control totals exist for parents as defined by the NSPY. However, estimates of total households with youth between the ages of 9 and 18

were available from the January 2000 CPS. Marginal household control totals were obtained from the CPS for the following four raking dimensions:

- (1) Household Race/Ethnicity (Non-Hispanic-White + Other Non-Hispanic, Non-Hispanic-Black, Hispanic) by Presence of Male Age 28 or Older in the Household (Yes/No),
- (2) Youth Age Group Composition of Household (any age 12-13 present, age 9-11 present but no age 12-13, age 14-18 present but no age 9-13)
- (3) Household Race/Ethnicity (Non-Hispanic-White, Non-Hispanic-Black, Other Non-Hispanic, Hispanic)
- (4) Census Region (Northeast, Midwest, South, West)

After the household doorstep and roster nonresponse adjustments, the household weights were raked to the first three sets of control totals to produce the household weights that were used in creating national parent baseweights. The household weights were raked again on all four dimensions for use in creating regional parent baseweights. Convergence was obtained after three iterations for the national household weights and six iterations for the regional.

For youth, estimates of the total age 9 to 18 civilian population were also obtained from the January 2000 CPS. From these control totals the civilian non-institutional group quarters population was excluded, as estimated from the 1990 Census Public Use Micro-data System (PUMS) files. Marginal control totals were obtained for the categories defined by the three raking dimensions:

- (1) Gender (M, F) x Age Group (ages 9-11, 12-13, and 14-18),
- (2) Race/Ethnicity (Non-Hispanic-White, Non-Hispanic-Black, Other Non-Hispanic, Hispanic) x Age Group (ages 9-11, 12-13, and 14-18),
- (3) Census Region (Northeast, Midwest, South, West) x Age Group (ages 9-11, 12-13, and 14-18).

After the Youth and Youth-dyad nonresponse adjustments, both sets of weights were raked to the first two sets of control totals to produce the final national youth and Youth-dyad weights for use in analysis. Both sets of nonresponse-adjusted weights were raked again on all three dimensions to create regional weights for use in making regional estimates. Convergence was obtained after four iterations for the national weights and six iterations for the regional.

Coverage rates are given in Table A-A for youth by age, race and gender. The coverage rate is calculated as the ratio of the sum of the weights before raking to the control total.

Table A-A
Coverage rates

Subgroup	Coverage rate
Male	0.71
Female	0.68
Race/Ethnicity:	
Non-Hispanic White, Non-Hispanic	0.69
Other	
Non-Hispanic Black	0.69
Hispanic	0.74
Age Group	
9-11	0.70
12-13	0.74
14-18	0.67

A.3 CONFIDENCE INTERVALS AND DATA SUPPRESSION

Confidence intervals have been provided for every statistic in the detail tables. These intervals indicate the margin for error because a sample was drawn rather than conducting a census. If the same general sampling procedures were repeated independently a large number of times and a statistic of interest and its confidence interval were recalculated on each of those independent replications, then the average of the replicated statistics would be contained within 95 percent of the calculated confidence intervals.

The confidence intervals reflect the effects of sampling and of the adjustments that were made to the weights. They do not generally reflect measurement variance in the questionnaires. The intervals are based on variance estimation techniques that will be available in separate technical reports. In brief, subsamples of the sample were drawn and put through the same estimation techniques. The adjusted variation among the subsamples provides an estimate of the variance of the total sample. Details on how confidence intervals were calculated from variance estimates follow.

Some estimates are suppressed. This was done when the reliability of a statistic was poor. This was measured in terms of the sample size and the width of the confidence interval. Estimated proportions near 0 percent and 100 percent are more likely to be suppressed than other estimates since it is difficult to estimate rare characteristics well. The exact criteria for this suppression also follow.

A.3.1 Confidence Intervals

Variances were estimated for NSPY using a resampling approach. This resampling method has been developed specially for NSPY. It uses 100 resamples to measure the variance in the full sample estimates. This method reflects, the variance due to selecting a larger sample of 100 PSUs for the standard Westat design, the variance due to subsampling to the 90 NSPY sample PSUs, and the variance due to sampling segments dwelling units, and persons within

PSUs. Moreover, it reflects the finite population correction factors at both the PSU and segment levels. Full technical documentation of this method can be obtained from Westat (Westat, 2000).

After each of the 100 resamples are drawn, the full set of adjustment procedures is run on each resample. This means that each resample is adjusted for nonresponse and is raked to adjusted Current Population Survey (CPS) control totals. By doing this, the variance estimation procedure reflects the changes in uncertainty due to the point estimation procedures.

Once the variance estimates were obtained, they were translated into confidence intervals using approximations similar to those that have been developed on the National Household Survey on Substance Abuse (NHSDA). For means of continuous variables, the confidence intervals are formed by assuming that the sample statistic has a t-distribution with 100 degrees of freedom. The assumption of 100 degrees of freedom comes from the 100 resamples. In the NHSDA, it is assumed that the sample statistic has a normal distribution. That is equivalent to assuming a t-distribution with an infinite number of degrees of freedom. Assuming 100 degrees of freedom is slightly more conservative. The standard error is multiplied by 1.98 instead of 1.96 to form a 95 percent confidence interval. The formula is

$$\text{lower bound} = \bar{x} - 1.98\sqrt{\text{var}(\bar{x})} \quad \text{and} \quad \text{upper bound} = \bar{x} + 1.98\sqrt{\text{var}(\bar{x})} .$$

For proportions, it is assumed that a logistic transform of the estimated proportion has a normal distribution. This results in confidence limits that are strictly between 0 and 1, a useful property for estimated proportions. The formula for estimated proportions strictly between 0 and 1 is

$$\text{lower bound} = \frac{1}{1 + \exp\left\{-\left[\log\left(\frac{\hat{p}}{1-\hat{p}}\right) - 1.98\frac{\sqrt{\text{var}(\hat{p})}}{\hat{p}(1-\hat{p})}\right]\right\}} \quad \text{and}$$

$$\text{upper bound} = \frac{1}{1 + \exp\left\{-\left[\log\left(\frac{\hat{p}}{1-\hat{p}}\right) + 1.98\frac{\sqrt{\text{var}(\hat{p})}}{\hat{p}(1-\hat{p})}\right]\right\}} .$$

For example, if the estimated proportion is 0.5 percent with a standard error of 0.4 percent, rather than calculating the standard t-approximation of -0.3 percent to +1.3 percent, the logistic formula yields a confidence interval of 0.1 percent to 2.4 percent.

Estimated proportions of 0 and 1 pose special difficulties for variance estimation and calculation of confidence intervals. The best variance estimate is zero for such estimated

proportions, but the best confidence intervals are not collapsed at the point estimates. The approximation used for a confidence interval around an estimated zero proportion is

$$\text{lower bound} = 0 \text{ and upper bound} = \frac{2F_{2,n}^{-1}(1 - \alpha/2)}{n + 2F_{2,n}^{-1}(1 - \alpha/2)},$$

where $F_{2,n}^{-1}(1 - \alpha/2)$ is the $1 - \alpha/2$ quantile of an F distribution with 2 and n degrees of freedom (Korn and Graubard, 1999).

For an estimated proportion of 1, the confidence interval is calculated as

$$\text{lower bound} = \frac{nF_{n,2}^{-1}(\alpha/2)}{2 + nF_{n,2}^{-1}(\alpha/2)}.$$

As examples, if a domain has a sample size of 500, then the upper confidence limit on an estimate of 0 percent will be 1.5 percent and the lower confidence limit on an estimate of 100 percent will be 98.5 percent.

A.3.2 Suppression

There were several suppression criteria. All were developed with the aim of preventing over analysis of statistics that contain little true information. For example, if a domain had a sample size of only two youth, and the estimated proportion of them who thought a certain way on some subject was 50 percent, then the confidence interval would range from 5.7 percent to 94.3 percent, which is too wide to be of any use.

Any estimate based on an effective sample size of 30 or less was suppressed. The effective sample size for a statistic was calculated as the simple random sample size of the same domain that would have generated a standard error of the same size.

Estimated proportions between 0 and .5 were suppressed if

$$\frac{\sqrt{\text{var}(\hat{p})}}{\hat{p} \log(1/\hat{p})} > 0.225$$

and estimated proportions between 0.5 and 1.0 were suppressed if

$$\frac{\sqrt{\text{var}(\hat{p})}}{(1 - \hat{p}) \log(1/(1 - \hat{p}))} > 0.225.$$

Note that these rules mean that larger effective sample sizes are required to avoid suppression as the estimated proportion approaches 0 or 1. Estimated proportions of 0 or 1

were suppressed if the effective sample size for the domain was 140 or less. This corresponds to confidence limits of (0.000-0.026) on 0 and (0.974-1.000) on 1.

A.3.3 Average Design Effects and Effective Sample Sizes

A design effect is defined as the ratio of the achieved variance to the hypothetical variance that would have been achieved if a simple random sample of the same domain had been conducted. An effective sample size is defined as the quotient of the nominal sample size divided by the design effect. Design effects have been calculated for a number of statistics. They vary considerably from statistic to statistic, partially reflecting true differences in design effects but also reflecting substantial measurement noise. Table A-B shows the average design effects and corresponding effective sample sizes for statistics about youth, parents, and dyads.

**Table A-B
Design effects and effective sample sizes**

Youth age domain	Youth		Parents		Dyads	
	Design effect	Effective sample size	Design effect	Effective sample size	Design effect	Effective sample size
9-11	1.25	870	1.37	757	1.44	714
12-13	1.22	870	1.37	734	1.39	722
14-15	1.47	376	na	na	1.58	331
16-18	1.27	481	na	na	1.32	430
14-18	1.27	916	1.4	772	1.55	704
Total	1.46	2,268	1.66	1,882	2.27	1,374

A.4 GEOGRAPHY

Three levels of urbanicity are used in this report. The levels are “urban,” “suburban,” and “town and rural.” These levels are based on concepts developed by the Claritas Corporation. The levels are defined as groupings of PRIZM codes. PRIZM is a market segmentation system that classifies every neighborhood in the United States into 1 of 62 distinct lifestyle types or “clusters.” Table A-C shows the full list of PRIZM codes and how they were mapped into the three urbanicity levels used in this report. Claritas defines neighborhoods to be census block groups and uses data from the 1990 Decennial Census, updated census demographics, and updated population density information to assign PRIZM cluster codes.. A popular description of these clusters may be found in *The Clustered World: How We Live, What We Buy, and What It All Means About Who We Are* by Michael J. Weiss. The SER code given in the rightmost column can be used to reference an extended definition of each cluster in this book. Claritas also offers a service at its web site (<http://yawyl.claritas.com/>) where browsers can look up the PRIZM codes predominant in ZIP Code area of the browser’s choosing.

Table A-C
Mapping of PRIZM codes into urbanicity

Urbanicity	5-level urbanization	Social group	PRIZM cluster number	Social economic rank (SER)
Urban	Metro urban	U1	06	3
			07	5
			08	6
			09	14
			10	17
		U2	27	22
			28	32
			29	37
			30	46
		U3	31	44
			45	51
			46	60
			47	61
Second city	Second city	C1	11	7
			12	13
			13	16
		C2	32	20
			33	27
			34	36
			35	39
		C3*	36*	31
			48	49
			49	52
			50	59
			51	62
		Suburban	Metro suburb	S1
02	2			
03	8			
04	9			
05	10			
S2	18			12
	19			15
	20			21
	21			24
S3	22			30
	23			28
	24			29
	25			41
	26	42		

**Appendix A. Sample Design, Development of Weights,
Confidence Intervals and Data Suppression, and Geography**

Urbanicity	5-level urbanization	Social group	PRIZM cluster number	Social economic rank (SER)		
Town & rural	Town/exurban	T1*	14	4		
			15	11		
			16	18		
			17	19		
		T2	37	26		
			38	33		
			39	35		
			40*	40		
		T3	52	38		
			53	50		
			54	54		
			Rural	R1	41	23
					42	25
					43	34
44	43					
R2	56			45		
	57			57		
R3	58			47		
	59			48		
	60			53		
	61			55		
					62	58

* Social group C3 can be either second city or Metro suburb; Social group T1 can be either Town/exurban or Rural; clusters 36 and 40 are included in their respective social groups based on similar demographics and not urbanicity.

Claritas defines five levels of urbanization: “metro urban,” “metro suburb,” “second city,” “town/exurban,” and “rural.” The reduced set of three urbanicity levels was used in this report because of concerns about adequate sample sizes for the more detailed geography. Users of the public use files will be able to use the full set of five Claritas urbanization levels. These five urbanicity levels are derived by using a PRIZM to urbanicity mapping described in Table A-C. This mapping is not perfect. See the detailed discussion after the table.

The three levels of urbanicity based on PRIZM codes were used for this report instead of the geographic concepts found in U.S. Census Bureau reports for several reasons. The most important reason is that the U.S. Census Bureau does not define the concept of “suburban.” Second, although the Bureau does define urban and rural, these concepts are defined at the block level. With the Bureau concept, as a person travels around a metropolitan area, one can quickly pass through a succession of urban and rural blocks depending on highly localized density measures. The Claritas concept of urbanicity focuses on population density within 38 square mile squares. With this broader measurement, the Claritas concept changes more slowly over adjoining territory. It is hoped that this concept is more robust to changes wrought by development. Third, the U.S. Census Bureau concepts are updated only once every decade. Many blocks that were rural in 1990 are now urban in character. Claritas

undertook to update its classification in 1997. The update was not as thorough as the changes that will be made after the 2000 Decennial Census but was useful in reclassifying areas with strong population growth in the early and mid 1990s. For those interested in comparing the Claritas concept to the U.S. Census Bureau concept, note that the urban and suburban areas defined in this report correspond roughly to the “urbanized areas” defined by the U.S. Census Bureau.²

For this report, houses selected from area segments were directly classified into PRIZM codes by Claritas. Houses selected from permit segments were first geocoded by Claritas, a process wherein the street name and house number are used to classify the address into a 1990 block group. Claritas succeeded in geocoding 82.8 percent of the permit sample. Geocodes were imputed for the remainder based on the geocoding of other permits issued by the same local jurisdiction during the same time period.

Definition of Claritas’ Five-levels of Urbanization

Claritas’ five-level urbanization code is not available to customers. It is a key input to the assignment of a PRIZM cluster code, though, and so can be usually inferred from the assigned PRIZM cluster code. Table A4-1 provides Claritas’ recommended mapping of the 62 PRIZM codes into the 5 urbanicity levels. Cases where there was not a one-to-one mapping between PRIZM and urbanicity are clusters 36 and 40 and social groups C3 and T1. Clusters 36 and 40 are not based on urbanization. Cluster 36 is largely college towns, and cluster 40 is largely military, bases and nearby areas. The clusters in social group C3 are a mix of suburban and second-city block groups; and the clusters in Social Group T1 are a mix of town/exurban block groups and rural block groups. Thus, tabulations based on the urbanicity used in this report will not exactly match those based on Claritas’ five-level urbanization code. In particular, the suburban population will be smaller since those that are in the C3 social group are being classified as second city.

A brief description of the process for classifying block groups by the five levels of urbanization is now given. The classification process is done strictly in terms of patterns of population density. The five urbanization categories were developed by Claritas using 1990 Decennial Census data. More details may be found in Miller and Hodges (1994). However, some of the exact details of the classification process are proprietary to Claritas.³ Block group assignments to the urbanization categories were last updated in 1997. In that update, most changes were in areas that had experienced rapid growth and development since 1990.

Claritas uses a contextual density measure to assign block groups to urban-rural status. The method for calculating contextual density is begun by defining a grid cell structure in which each grid cell is equal to 1/30 of a degree latitude and longitude. Each resulting grid cell thus has an area of approximately 4 square miles. The population and land area of each grid cell is calculated by summing the population and land area for each block whose centroid falls within the boundaries of the grid cell. The contextual density of a grid cell is further defined

² In terminology of the U.S. Census Bureau, urbanized areas are different from urban areas. Both urban and rural blocks can occur inside and outside of urbanized areas.

³ Researchers who wish to code their data sets with the same urbanicity concept must work through Claritas.

as the total population of the cell and the eight surrounding cells divided by their total land area. This larger area is about 6.2 miles on a side and covers approximately 38 square miles.

Instead of using the actual population densities, Claritas ranks grid cell by their contextual densities from low to high and divides this continuum into 100 equal groups based upon population. The scale thus runs from 0 (lowest) to 99 (highest) and corresponds to a percentile ranking scale. Rural and small town definitions are simply based on grid cell density rankings. Grid cell contextual density rankings of 19 percent or lower are designated as rural while contextual density rankings between 20 and 39 percent are defined as small town. The line between town/exurban and rural is a contextual density of 223 persons per square mile. The upper limit on contextual density for town/exurban is 959 persons per square mile. So a grid cell is considered town/exurban if the 38 square mile square surrounding it has a total population of at least 8,474 persons but fewer than 36,480.

The distinction between urban, suburban, and second city is based on grid cell contextual density rankings and the concept of “population centers.” Population centers are defined as those grid cells with population density rankings greater than or equal to those of all the cells surrounding it out to the second ring (approximately a 5-mile radius). Those areas with a population center contextual density ranking greater than 79 percent are designated as urban centers. Population centers with a contextual density ranking of 79 percent or less are designated as second cities. This threshold of a 79th percentile ranking corresponds approximately to a contextual density of 4,163 person per square mile. Since the contextual density is based on the larger 38 square miles area around a point, a cell in a population center is considered to be metro urban if there are at least 158,194 persons in the larger square. Cells in smaller population centers are considered to be second cities.

The transition from urban to suburban is determined using an equation developed by Claritas for determining suburban density thresholds around population centers. A similar procedure is used to differentiate second city population centers from their surrounding suburbs. Suburban areas are defined as those areas with grid cell contextual density rankings of 40 percent or greater and that are neither urban nor second city.

Table A-D shows the thresholds for suburban status by contextual density of population center. Areas with at least 959 persons per square mile (the cutoff point for the 40th percentile) that have grid cell contextual density rankings lower than the suburban threshold for the nearest population center are classified as suburban. For instance, in areas surrounding population centers with a contextual density ranking of 99 percent (i.e., a contextual population density that is between 39,402 and 50,983 per square mile), suburban areas would be defined as those areas with a grid cell density ranking of 89 percent or less (i.e., with a contextual population density of 6,811 or less per square mile).

Table A-D
Suburban density thresholds around population centers (persons per square mile)

Density at population center	Upper threshold density for associated suburban area
986	959
1,974	959
3,034	1,870
3,946	2,987
5,027	3,760
7,574	4,505
9,889	5,149
22,359	5,997
45,193	6,811

Table A-E contains some statistics about the three types of areas as of 1999. Claritas has found that the PRIZM codes do have considerable explanatory power for marketing purposes. Another reason for using urbanicity based on PRIZM codes in this report is thus that they may be helpful in understanding exposure levels and reactions to the Media Campaign.

Table A-E
Profiles of urbanicity levels in 1999 from Claritas

	Households (1,000)	Median HH income*	Prevalence of HHs with kids	Share of HHs with kids
Urban	37,813	\$36,552	31.6%	33.3%
Suburban	23,449	\$58,877	36.8%	24.0%
Town & Rural	39,495	\$37,141	38.9%	42.7%
Total	100,757	\$41,979	35.7%	100.0%

*Medium income for each social group obtained from Claritas and then averaged across groups within urbanicity level, weighted by total households.

APPENDIX A. REFERENCES

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APPENDIX B. DATA COLLECTION METHODOLOGY AND RESPONSE RATES

Two types of data were collected and analyzed for Wave 1: quantitative survey data collected in a screener and three extended interviews (parent, teen, and child) and media buy data (i.e., gross rating point [GRP] information).

This appendix describes the data collection methodology used during Wave 1. Topics include questionnaire design, pilot testing, interviewer recruitment and training, media activities, procedures used during data collection, data editing and cleaning, and Wave 1 response rates.

B.1 QUESTIONNAIRE DESIGN

In preparation for the Evaluation of Phase III of the National Youth Anti-Drug Media Campaign, the National Institute on Drug Abuse (NIDA) convened an expert panel to assist in the development of data collection questionnaires. This group, which included specialists in adolescent drug use prevention and parenting behaviors, met and generated draft survey questionnaires for teens (aged 12-18) and parents for the National Survey of Parents and Youth (NSPY). NIDA shared these Phase III prototypes with Westat at the beginning of the contract period.

Westat formed an questionnaire development team whose members included evaluation experts from Westat, the Annenberg School for Communication at the University of Pennsylvania, and the National Development and Research Institutes (NDRI). This team reviewed the Phase III prototypes as well as the survey questionnaires used in the Phase II Media Campaign Evaluation, Monitoring the Future (MTF), Community Action for Successful Youth, National Household Education Survey (NHES), and the National Household Survey on Drug Abuse (NHSDA).

To facilitate the development of the questionnaires, the team developed a behavioral change model for the Evaluation and mapped each question back to this model, as well as to the communication objectives that had been established for the Media Campaign.

Question domains for parents included the following:

- Media consumption;
- Past discussions with child about drug attitudes and avoidance strategies;
- Past child monitoring behaviors;
- Self-efficacy of discussing drugs with child and of monitoring the child actions;
- Belief that the child is at risk for drug use;
- Belief that drug use has bad consequences;
- Exposure to the Media Campaign's advertising;

- Parent's own current and past use of tobacco, alcohol, and drugs; and
- Demographic information.

Youth question domains included the following:

- Exposure propensity to media;
- Youth's own current and past use of tobacco, alcohol, marijuana, and inhalants;
- Past discussions with and communication of anti-drug messages from parents and friends;
- Expectations of others about respondent's drug use;
- Knowledge and beliefs about the positive and negative consequences of drug use;
- Exposure to the Media Campaign's advertising;
- Family and peer factors;
- Personal factors; and
- Demographic information.

The survey questionnaires were designed to use the latest in data collection information technology. The questionnaires are rendered in hard copy in the form of specifications for the programmers in the companion volume, National Survey of Parents and Youth: Questionnaires for Waves 1 and 2. A brief, hard-copy household screening questionnaire is used to determine a sampled household's eligibility. However, the majority of the data collection is conducted using a laptop computer and a combination of computer-assisted interview technologies. Computer-assisted personal interview (CAPI) involves having the interviewer read the questions to the respondent and record the answers in the computer. CAPI is used to enumerate the household and select a parent/caregiver and one or two youth. It is also used for the nonsensitive questions in the extended interview (parent, teen, and child) questionnaires. For collection of sensitive data in the extended interview questionnaires, audio computer-assisted self-interview (ACASI) technology is employed. This allows respondents to self-administer the survey in total privacy. They listen to the question on headphones and record their own responses by touching the computer screen. These technologies were used based on the theory that providing respondents with a methodology that improves privacy and confidentiality would make reporting of potentially embarrassing, stigmatizing, or illegal behaviors (such as drug use) less threatening, and enhance response validity and response rates.

On average in Wave 1, it took 35 minutes for children (ages 9-11), 45 minutes for teens (ages 12-18) and 55 minutes for parents to complete their respective survey questionnaires.

B.2 PILOT TEST

Once the Office of Management and Budget (OMB) clearance was obtained, Westat conducted a pilot test in Baltimore, Maryland. Approximately 300 households were screened to obtain about 20 household interviews using the NSPY questionnaires. The purpose of the pilot was to test the adequacy of questionnaire skip patterns, question wording and flow, and the application of the ACASI portion of the questionnaire, as well as to test the adequacy of the advance materials and interviewing procedures. A debriefing was held at the end of the pilot data collection. From that, some questions needed to be dropped from each of the extended interview questionnaires to keep within the OMB respondent burden estimates. Procedures and advance materials were updated as appropriate.

B.3 INTERVIEWER RECRUITMENT AND TRAINING

The Wave 1 data collection design was based on hiring 1 primary interviewer in each of 90 primary sampling units (PSUs) and hiring approximately 35 more interviewers to supplement efforts in larger PSUs, PSUs geographically clustered, and in PSUs where primary interviewers quit during the field period. Twenty-nine additional interviewers were hired to supplement the data collection effort later in the wave. Initially, interviewers were recruited from Westat's pool of experienced interviewers. Additional candidates were recruited through local organizations and classified newspaper advertisements placed in various PSUs as needed. These candidates were screened for communications skills and availability. Spanish language interviewer candidates were screened by bilingual project staff for their ability to communicate effectively in both Spanish and English. Approximately 12 percent of the total interviewers hired for Wave 1 was bilingual. Most English and bilingual candidates had prior experience relevant for data collection.

All candidates participated in a 9½-day training session. The training program, which was staffed by qualified project staff and field supervisors, was designed to ensure consistency in data collection through the use of lectures, with a heavy focus on practice sessions. Trainees new to Westat attended an additional half day training on general interview techniques. Bilingual trainees also attended an additional half day training that concentrated on reviewing bilingual scripts and materials. Approximately 20 percent interviewer attrition was experienced during the first 4½ months of the field period, so an addition training session was conducted to supplement the interviewer workforce. Total interviewer attrition over the field period was 24 percent.

B.4 MEDIA ACTIVITIES

Because this is an evaluation of a media campaign, activities such as media buying, ad creation, and broadcast levels play key roles in the questionnaires as well. And as the Media Campaign is dynamic over time, the media-specific questions in the questionnaires must also change appropriately.

In the Media Campaign Evaluation Teen and Parent questionnaires, there are questions that ask about the respondent's media usage patterns, including television, radio, and magazines. Questions are asked about viewership of specific television shows and readership of specific

magazines from which the Media Campaign media buyers have purchased advertising time or space. The specifics of these media buys are determined by Ogilvy, the Campaign media buy contractor, based on the GRPs that the television show, radio program, or magazine is expected to earn. GRPs refer to the percentage of the target population that is estimated to be watching a particular TV show, listening to a specific radio program, or reading a certain magazine, and is therefore exposed to the advertising messages provided. These GRPs are based on data from that media's audience ratings company (Nielsen Media Research for television, Arbitron Research and RADAR for radio, and MRI for print). Knowing the reach and frequency objectives for the Media Campaign's messages, the media buyers then purchase a mix of media whose GRPs, when aggregated, should achieve the desired intensity of Media Campaign message exposure.

All NSPY questionnaires contain a section of questions devoted to how the respondent receives anti-drug messages. In these questions, selected television and radio Media Campaign ads that have been broadcast during the prior 2 calendar months are played for the respondent. Questions are then asked about the respondent's recall of prior exposure (viewing or listening) to the ad, and their assessment of the ad's message and impact.

Updated information on those television shows and magazines for which ad time or space has been purchased is sent to Westat every 3 months and appropriate updates are transmitted to the field interviewers' laptop questionnaires. The set of television and radio ads that are played for respondents are also changed monthly, with a set protocol being used to determine which ads are played during each month and for which respondents.

Each month Ogilvy produces an updated copy rotation schedule. This schedule outlines, by month, each ad that is slated for broadcast, its target audience (parents or youth), and racial or ethnic group (general market, African American, and Hispanic). Included are each ad's planned broadcast dates and the Media Campaign behavioral platform that the ad addresses.

As ads are produced, Ogilvy forwards them to Westat for digitizing; a process that puts the ads into an electronic format that can then be incorporated into the computerized laptop questionnaires.

Using the current copy rotation schedule, Westat determines those television and radio ads that will need to be played to respondents over the next 2 months. A CD containing those ads is then produced and sent to the field interviewing staff. A look-up table is also developed for each interview month and transmitted to the field staff. It provides the specifications for ad selection and randomization for each respondent that month.

Ogilvy also provides data regarding the planned GRP levels for the previous quarter, by target audience (parents or youth), creative ad execution, media (television, radio, and print), and week/month. This information is used by the Evaluation's analysts to look for correlation between recalled exposure to ads by respondents and the ads' reach and frequency levels. See Appendix C for such analysis.

B.5 WAVE 1 DATA COLLECTION

B.5.1 Determining Household Eligibility

Interviewers were required to make up to five in-person attempts to contact a household. A household was considered eligible if two criteria were met: (1) The household contained children of a specified age group (age groups included households with children aged 9 through 13, 12 and 13 or 9 through 18), and (2) the housing unit was built before April 1, 1990, the housing unit is a mobile home, or the housing unit was selected through the permit sample (see Appendix A). All eligibility information was collected hard copy and then entered into an electronic file on laptop computers.

B.5.2 Use of Neighbor Reports

Through most of Wave 1, interviewers were instructed to visit the sampled household three times to try to determine eligibility prior to obtaining eligibility information from a neighbor. This procedure was changed later in the wave to allow interviewers to determine eligibility information from neighbors after one attempt to contact the household. Because a neighbor might be less able to accurately know the exact ages of children, two questions about children were asked. First, the neighbor was asked whether any children aged 9 to 18 lived in the household. If yes, a followup question was asked to determine whether children of the specified age for the particular household (see categories above) lived in the household. In addition, the neighbor was asked if sampled housing units in area segments were built after April 1, 1990. Finally the neighbor was asked what times members of the sampled household would be likely to be home.

If answers to both of the age questions were no, the household was considered ineligible. If the answer to either or both age questions was yes and if the housing unit was built before April 1, 1990 or if the housing unit was drawn from the sample permit, the interviewer continued to try to contact the sampled household. Remaining attempts were made to contact the sampled household to obtain an interview at times suggested by the neighbor.

Eligibility based on neighbor reports was determined for about 15 percent of the sampled addresses.

B.5.3 Selection of Respondents

Once a household was determined to be eligible, the interviewer conducted a household enumeration with a household member 18 years of age or older. All members of the household, excluding children/students who were currently away from home living at a boarding school or college, were enumerated. At this point up to two eligible children were randomly selected. Once the children were selected, the relationship of every other person to the selected child was obtained. One or two parents or primary caregivers were then selected based on a predetermined algorithm. (Two parents or primary caregivers were chosen only in the unusual situation of two family households.) If two parents for a selected child resided in the household, the algorithm selected the male or female parent on a random basis. If one of the parents was a stepparent or foster parent, that parent must have lived

with the child in the household for a least 6 months to be eligible for selection. If no parents lived in the household, the algorithm selected a primary caregiver. Once all respondents were selected, information on the race and ethnicity for each selected person was obtained.

All selection information was entered into a laptop by the interviewer using a CAPI approach.

B.5.4 Guaranteeing Confidentiality

An important part of the survey methodology was to obtain honest answers to very sensitive data. To meet this end several procedures were implemented. First, a Certificate of Confidentiality was obtained for the study. Under the certificate, the Federal Government pledged that the Evaluation team cannot be compelled by any person or court of law to release a respondent's name or to link a respondent's name with any answers he/she gives. Interviewers showed a copy of the certificate to respondents prior to the interview. They also guaranteed that all respondent names and other identifying information would be destroyed and would not appear in any publications resulting from the study. Teen and child assent forms were appropriately worded for each age group to make sure that the youth understood that the answers that they gave would be kept private and would not be connected with their names.

Second, the extended interviews were administered in a CAPI and ACASI format. Sensitive questions were in ACASI format that meant that respondents used the computer themselves to answer questions by touching the screen and used headphones to hear the questions. The extended interview was programmed so that the interviewer was unable to go back into interview and look at answers the respondent provided in the ACASI section.

Third, interviewers were instructed to, if possible, seat the respondent in a chair that was against the wall or a piece of furniture so that no other person could stand or pass behind the respondent. This procedure hindered third parties from being able to observe the respondent's answers during the ACASI part of the interview. The interviewer also requested that parents not be present in the room while the questionnaire was being conducted with the youth. If the parent insisted on being present in the room, the interviewer asked the parent to not stand directly behind the child during the ACASI portion of the interview.

B.5.5 Validation of Interviews

Ten percent of parents interviewed were selected for validation. Approximately 75 percent were contacted by telephone and attempts to contact the remainder were made by mail. When interviewers were suspected of falsifying data, all of their worked cases were redone by different interviewers. In a few instances, interviewers were terminated for falsifying data.

B.6 DATA EDITING AND CLEANING

SAS programs were developed to perform edit checks on the screener and extended interview data. All interview skip patterns were checked to insure that data did not exist for data items that should have been skipped and that data values were missing only when a data item had been properly skipped. Checks were also performed to confirm that all reported ages and dates were in a logical sequence between birth and the data of interview. Additional edits checks were executed to insure that questions were asked regarding the appropriate groups of items (i.e., ads, TV shows) given the demographic characteristics of the respondent. After the SAS edits were reviewed and the appropriate updates were applied, frequencies were produced for all variables at the dwelling unit level, the sampled person level and the parent/youth dyad level. These frequencies were reviewed by experienced data specialists who identified outliers, unexpected missing data, and data inconsistencies. When a potential problem was identified, the data manager located the corresponding records within the database and evaluated the data to determine if any items needed to be updated.

Data updates were recorded by the data specialists and were carried out through a SAS update program that updated the appropriated data items and kept a transaction record of all updates.

B.7 RESPONSE RATES

There were 34,691 sampled addresses to be contacted and screened in NSPY Wave 1. Of those sampled addresses, 4,649 (13.4%) were discovered to be either vacant or nonresidences (such as businesses or other institutions). That left 30,042 occupied residential addresses to be contacted and screened for study eligibility.

Of those occupied addresses, answers to the screening questions were obtained for 28,567 (95.1%). Roughly 1 in 8 screened addresses (12.2%) had children in the required age ranges and were eligible to participate in NSPY.

In the 3,497 eligible households, data collection staff were able to enumerate household members for 2,602 (74.4%) households, so that a parent/caregiver and one or more youth could be selected for interview. Once selected, 2,293 (88.4%) of NSPY parents/caregivers completed an interview. Interviews were completed with 3,314 (90.7%) of selected NSPY children and teens.

The cumulative weighted response rate (weighted screener response rate x weighted roster response rate x weighted interview response rate) was 63.8 percent for youth, 60.2 percent for dyads (one parent and one or more youth), and 61.4 percent for parents.

APPENDIX C. MEASUREMENT QUALITY

This appendix addresses the issue of quality of measurement. While every measure included in each questionnaire is not dealt with, evidence for the quality of some of the central measurement techniques relied on in the report is considered. The appendix is divided into three sections. The first provides evidence about the quality of the specific ad recall measures used in Chapter 3. The second considers the internal coherence of many of the sets of items to measure the belief, attitude and self-efficacy constructs used in Chapters 7, 8, and 9. The final section considers the intra-household congruence between parent and child reports about behaviors.

C.1 RECALL OF ADVERTISING

Specific Ad Recall

Each youth and parent was shown a set of television and radio advertisements that had been playing in the 2 months before the date of interview. From their responses to those ads an index of total exposure to ads in each media was developed. Can these measures of specific recall be trusted? (In this section evidence for the validity of the television ad recall measures for youth are presented, only. They may not represent the validity of measures of parent recall of television or radio ads or of youth recall of radio ads.) The problem of validity of youth television ad recall was addressed in two ways. First, the recall of the ads actually shown on television were compared to the claimed recall of “ringer” ads, ads played for respondents although they had never appeared on television. Second we compared the average recall of each shown ad with the total advertising time (GRPs) purchased for each ad. If the measures of recall were strong, they would correlate highly with GRPs purchased. Both of these tests turned out to be supportive of the validity of the measures.

The average eligible ad was recalled by 47 percent of youth.¹ This recall rate was sharply higher than recall of the ringer ads, ads that had never been aired and were used to estimate the tendency to claim that an ad had been seen when it had not. On average, the ringer ads were “recalled” 11 percent of the time. In contrast, of the 13 real general audience ads, 7 had recall rates over 50 percent, 4 others were between 20-40 percent and only two were between 10-19 percent, not dissimilar to the ringer ads. These results give confidence that these measures do reflect true exposure. They suggest that only a small downward adjustment to the average recall rate is justified to correct for over-reporting. The average recall rate of those who did not claim to have seen a ringer ad was 45 percent, only 2 percent less than the rate for the entire sample, including the respondents who said they had seen the ringer.

Table C-A present the data that were used to estimate the fit between youth recall of specific ads, and the GRPs that were assigned to each ad. There are six pieces of information included for each ad. For example, the ad “Hockey” was shown to 1,145 youth respondents (out of 3,314). It had been on the air 16.35 days of the 60 days preceding the interview for the average respondent. Of the 1,145 respondents who were shown the ad, 51 percent

¹ This percentage is weighted by the number of respondents who were eligible to respond to the ad, which is, in turn, substantially related to both the number of days that the ad had aired ($r=.44$).

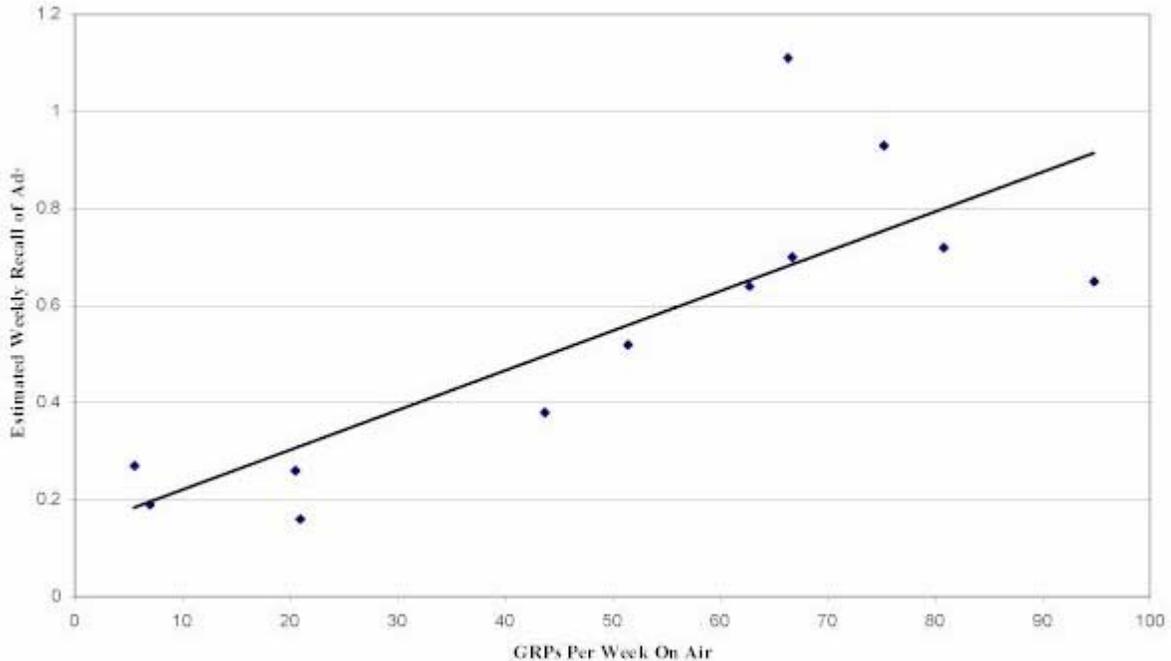
recognized it. Including both those who recognized it and those who did not, they claimed to have seen it an average 2.59 times “in recent months.” Estimated weekly exposure is a derived measure. The total number of times the ad was seen is divided by the average number of days the ad was on the air, which gives an estimate of exposures per day, and then multiplied by 7 to estimate exposures per week. So for Hockey, estimated weekly exposure of 1.11 is equal to $7 \times 2.59/16.35$. The final column is derived from the advertising data reported by Ogilvy. The total GRPs purchased for the specific ad during the period from September 1999 through May 2000, is divided by the number of weeks it was on the air. In the case of Hockey, there were a total of 398 GRPs purchased for a total of 6 weeks. Then the gross ratings points per week the ad was on the air was 66.33. This calculation was repeated for each of the general market ads. The data in the last two columns, one developed on the basis of the NSPY recall data and the other on the basis of reported GRPs, are remarkably consistent. With the ad as the unit of analysis, they correlate at $r=.81$. Even more, they provide very similar estimates for weekly exposure for each ad, recalling that the GRPs, divided by 100, represent the exposures per capita per week. The association between the recall and the GRP estimates is seen in Figure C-A. As one example, the Drugs Kill ad, featuring the Williams Sisters, had a weekly recall level of .52 exposures. Its GRP level was 51.44 per week it was on the air. These are almost exactly matched.

Table C-A
Association between recall and GRP estimates

Ad name*	Number of eligible respondents	Number of days aired in 60 days before interview	Proportion who had seen the ad in recent months	Mean number of times ad seen in recent months	Estimated weekly recalled exposure**	Gross Rating Points-per week ad was on the air
Hockey	1145	16.35	0.51	2.59	1.11	66.33
Andy McDonald	284	15.53	0.51	2.07	0.93	75.25
Brothers	492	33.39	0.69	3.42	0.72	80.80
Howtosay	904	28.92	0.53	2.88	0.70	66.75
Mary J. Blige	1636	35.42	0.60	3.27	0.65	94.80
No thanks	1137	37.99	0.66	3.50	0.64	62.75
Drugs Kill (Williams sisters)	603	33.57	0.63	2.50	0.52	51.44
Dixie Chicks	560	29.02	0.40	1.59	0.38	43.71
Michael Johnson	448	13.44	0.18	0.52	0.27	5.57
Scatman	426	25.23	0.24	0.93	0.26	20.50
No skill	576	13.39	0.11	0.37	0.19	7.00
Mother Daughter	492	26.39	0.21	0.60	0.16	21.00
Average, weighted by number of respondents eligible to see the ad.		27.33	0.47	2.28	0.58	

* Only English language ads are included in this analysis.

Figure C-A
Weekly recall and GRP density



This is strong evidence for two inferences. First GRPs matter; they largely define how well youth will recall the television ads. Second, the recall measures, at least when aggregated in this way, are strong measures. They would not be so highly related to weekly GRPs otherwise.

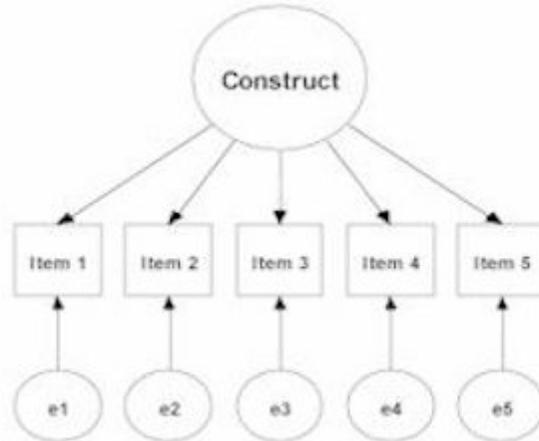
C.2 SCALE RELIABILITY

Estimating Reliability Through Measurement Modeling

Much of the NSPY measurement involves a set of sociocognitive predictors of intention (social norms, attitudes, and self-efficacy). Usually there are multiple measures of the sociocognitive variables and statistical power can be increased by using them as the basis of constructed scales instead of a multitude of mutually correlated independent variables. Here reliability estimates for the proposed scales are presented. The analysis comes in two forms: one for just- or over-identified constructs and one for under-identified constructs (for a discussion of the identification problem with measurement models, see Kline, 1998). For all analyses, rectangles represent observed variables and are assumed to be a function of the unobserved variable (large circles) and uncorrelated error terms (small circles, these variables are the “uniquenesses” in factor analysis terminology). The regression coefficients from the unobserved construct to the indicators (λ s) are the contribution of the unobserved variable to the observed variable. Both the λ s and the error variances can be different across

indicators. These two conditions define the least restrictive measure model, the *congeneric*. Raykov (1997) shows that the reliability (i.e., true score variance/total variance) for congeneric measures is easily calculable from estimates of all λ s, all error terms, and the variance of the unobserved factor. This reliability is the one reported below.

The generic measurement model for identified or overidentified constructs is shown below.



For teen respondents (12-18 years of age) three constructs of interest are overidentified and thus can be analyzed directly with the model above: outcome expectations (8 indicators), self-efficacy (5 indicators), and sensation seeking (4 indicators). Intentions for trial or regular use were measured using only a single item.

For parents, seven constructs can be analyzed using this approach: intentions to discuss drugs with children and to monitor children, outcomes of child monitoring, attitudes toward monitoring and discussing drugs with children, self-reported monitoring behaviors, and self-efficacy for discussing drugs with children. (Social norms around discussing drugs with children is measured with only a single item). Reliability results are shown below in Table C-B.

Table C-B
Reliability results

Construct	Group (N)*	Reliability	Questions
Beliefs re outcomes of trial use	Teen-A	.70	C3a: a-h
Beliefs re outcome of reg. use	Teen-BC	.83	C3b:a-h
Self-efficacy	Teen	.90	C9:a-e
Sensation Seeking	Teen	.78	C34:a-d
Attitudes – monitoring	Parents**	.74	C6:a-c
Beliefs outcome of monitoring	Parents	.54	C7:a-f
Intentions – monitoring	Parents	.67	C9:a-e
Behavior – monitoring	Parents	.68	C1,C2,C3,C4,C5
Attitudes – drug talk	Parents	.74	D2:a-c
Self-efficacy – drug talk	Parents	.58	D3:a-d
Intentions – drug talk	Parents	.75	D1:b,c,f,g

NOTE: All drug item results relate to marijuana use only.

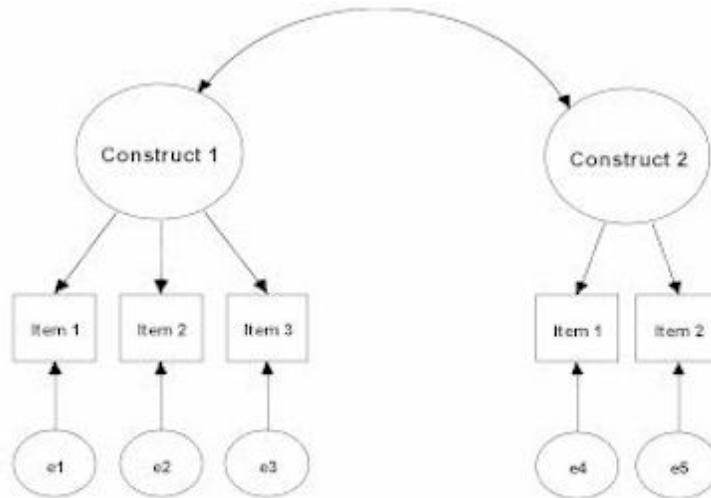
*Teen-A: Non-users responding to series concerning trial use.

Teen-BC: All respondents to C3b series concerning regular use.

Teen: All youth respondents at least 12 years of age.

** Parents with children from 12-18 only (N=2190).

Unfortunately, two indicator measurement models are under-identified without the imposition of untestable assumptions (e.g., equal λ s). However, in these cases, measurement models can be identified if the covariance between them and some other construct is simultaneously estimated and we assume the errors of measurement are independent across constructs. This approach is used to estimate the reliability for norms (3 indicators) and the semantic-differential attitude measures (two indicators) for the Teen sample (12-18 years of age). The generic two construct covariance model is shown below:



Construct	Group (N)*	Reliability	Comments
Norms – trial use	Teen-A (755)	.60	C6a,C7a,C8a
Attitudes – trial use	Teen-A (755)	.59	C4a,C5a
Norms – regular use	Teen-B C (918)	.63	C6b,C7b,C8b
Attitudes – regular use	Teen-BC (918)	.75	C4b,C5b

NOTE: All drug item results relate to marijuana use only.
 *Teen-A: Non-users responding to C3a series concerning trial use.
 Teen-BC: All respondents to C3b series concerning regular use.
 Teen: All youth respondents at least 12 years of age.

C.3 PARENT CHILD AGREEMENT ON COMMON MEASURES

Chapters 8 and 9 outlines a variety of results for variables for which both parent and child measures are available. In those chapters at the population-level parent and child responses sometimes were similarly distributed and sometimes were quite differently distributed. In particular for parent child talk about drugs, and parent monitoring of children’s lives, parents generally claimed they did more than children recalled. In this section the question of parent-child agreement is taken one step further. The question was asked whether individual parents agree with the responses of their own children to these measures.

There are three general areas of questions for which parallel data is available: parent-child talk about drugs; parent monitoring of their children’s lives, and parent perceptions of past and likely future drug use by their children. For those behaviors there are two types of measures. Most are simple “yes/no” measures. For those how much exact agreement there was between parent and child report is counted. Others are measures that include multiple values, either five or six values. For those measures both exact agreement and agreement within one category are counted.

Parent-Child Talk About Drugs

Both parents and their children were asked how often they had talked about drugs in the previous 6 months.

Table C-C
Overall frequency (%) of parent-child conversations about drugs

Parent responses	Child responses						Total
	Never	Once	2 or 3 times	4 or 5 times	6 to 10 times	More than 10 times	
Never	3%	3%	2%	1%	0%	0%	9%
Once	5	3	4	1	1	1	14
2 or 3 times	7	6	10	4	2	2	31
4 or 5 times	3	3	5	3	1	1	17
6 to 10 times	2	2	3	2	1	1	10
More than 10 times	3	3	5	2	2	4	19
	22	19	29	12	7	10	100

NOTE: Columns or rows may not add perfectly because of rounding errors.

Only 24 percent of parents and their children agreed exactly as to how often they talked in the past half year. Strikingly, only 9 percent of parents said they never talked, but 22 percent of youth said they had no conversations. However, if the criterion for agreement was relaxed, so that the responses of parents and children can be one category apart, then there is 57 percent agreement between them. However, given the distribution of responses at the population level there will be some agreement just by chance. For example, 19 percent of all parents say they talked more than 10 times, and 22 percent of all youth said they talked more than 10 times. It is expected that there will be $.22 \times .19 = .04$, or 4 percent of the parent-child pairs to both answer more than 10 times, by chance. This is about the number observed. It is customary to estimate an agreement coefficient correcting for this chance level of agreement. The formula for this kappa coefficient is:

$$\text{Kappa} = (\text{Observed Agreement} - \text{Expected Chance Agreement}) / (100\% - \text{Expected Chance Agreement})$$

Kappa varies from -1 to 1 with 0 meaning no agreement, -1 perfect disagreement and +1 perfect agreement.

In this case we calculate kappa coefficients for perfect agreement (.069) and for agreement within one category (.19). These would be considered low levels of agreement

This agreement coefficient estimates the tendency for two sets of responses to be the same absolutely. However, given that there is a known difference in the overall distribution of responses, the agreement statistic will inevitably be reduced. Another approach to measuring agreement is to ask whether the two sets of responses are ordered the same, that is whether a parent who tends to report relatively more conversations has a child who tends to report more conversations compared to the rest of their respective populations. A coefficient for measuring the relative agreement between parents and children is gamma, which can vary between -1 and +1, like kappa. In this case gamma=.263, still representing a fairly low coefficient if both parents and children are reporting on the same behavior.

For each of the joint measures the overall level of agreement, the kappa coefficient is reported (where there are multiple categories both perfect agreement kappa and agreement within one category kappa and the gamma coefficient are reported.)

There are three separate tables (C-D, C-E and C-F), respectively presenting the summary statistics for talking, for monitoring and for youth marijuana use. In the first two cases, there is some agreement, and it is beyond the chance level, but it is never very much larger than chance agreement, whether estimated by kappa or by gamma. Marijuana past use, and projected future use have high absolute levels of agreement, and both the kappa coefficients and the gamma coefficient (even more so) show a substantial pattern of agreement above chance. Chapters 8 and 9 provide some discussion about possible explanations for these inconsistencies. In future reports the explanations for the lack of agreement between parents and children with regard to all of these measures will be dealt with more extensively.

Table C-D
Parent-child talk about drugs

Behavior	% agreement (% agreement w/1 category)	Kappa-exact	Kappa-within 1 category	Gamma
Overall frequency of conversation (derived from Table C-3, above.)	24% (57%)	.07	.19	.26
Talked about: Family rules or expectations about drug use	61%	.15	NA	.40
Talked about: Specific things {he/she/I} could do to stay away from drugs	60%	.19	NA	.40
Talked about: Drug use in movies, music, and on TV?	56%	.15	NA	.32
Talked about: People my child/parent or I know who have gotten into trouble with drugs?	58%	.18	NA	.58

Table C-E
Parental monitoring of child's behavior

Behavior	% agreement (% agreement w/1 category)	Kappa-exact	Kappa-within 1 category	Gamma
How often do (you/your parent) know what (you/child's name) are/is doing when {he/she} is away from home? (Never, seldom, about half the time, often, always or almost always?)	45% (73%)	.13	.17	.30
How often do (you/your parent) have a pretty good idea about (your/child's name's) plans for the coming day? (Never, seldom, about half the time, often, always or almost always?)	60% (88%)	.22	.40	.31

Table C-F
Youth use of marijuana

Behavior	% agreement	Kappa-exact	Gamma
(P) How many times, if any, do you think child has used <i>marijuana</i> during the <i>last 12 months</i> ? (C) Have you ever, even once, used marijuana? (if yes) How long has it been since you <u>last</u> used marijuana (yes versus no for last 12 months)	91%	.49	.93
(P) How likely is it that {CHILD NAME} will use marijuana once or twice over the <i>next 12 months</i> ? (C) How likely is it that you will use <i>marijuana</i> , even once or twice, over the <i>next 12 months</i> ? (Very unlikely versus other)	74%	.32	.65

APPENDIX C. REFERENCES

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APPENDIX D. WAVE 1 – NSPY ANTI-DRUG ADVERTISEMENTS

Target Audience	Media	Ad Name	Description
Parent- Gen. Mkt.	TV	E-mail	A father types an e-mail on his computer while his child plays video game in the background. Spending time with your kids is most effective deterrent to drug use. “Could you send one less e-mail?”
Parent- Hispanic	TV	Phone (Spanish)	A mother talks on the kitchen phone while child sits in background looking bored. Spending time with your kids is the most effective drug deterrent. “Could you make one less call?”
Parent- Gen. Mkt.	TV	Phone	A mother talks on the kitchen phone while child sits in background looking bored. Spending time with your kids is the most effective drug deterrent. “Could you make one less call?”
Parent- Gen. Mkt. & Black	TV	Office	A typical office is shown at 5:00 PM. Be aware of at-risk times - 5:00 PM is the time kids are most likely to be offered drugs. Be sure to check in with them.
Parent- Gen. Mkt	TV	TV	A father watches TV show while his daughter skims a magazine on the couch. Kids who are younger than 15 and using marijuana are more likely to use other drugs. Spending time with your kids is most effective deterrent to drug use. “Why do we watch so much television?”
Parent- Gen Mkt	TV	Differences- Weed	A weed to a 6th grader is a dandelion; weed to a 7th grader is marijuana. “What a difference a year makes.”
Parent- Gen Mkt	TV	Differences- Drugs	Drugs to a 6th grader are medicine; drugs to a 7th grader is bag of marijuana. “What a difference a year makes.”
Parent- Gen Mkt	TV/ Radio	Differences- Pipe	A pipe to a 6th grader is plumbing; a pipe to a 7th grader is a marijuana pipe. “What a difference a year makes.”
Parent- Gen Mkt	TV	Differences- Pot	Pot to a 6th grader is a flower pot; pot to a 7th grader is marijuana. “What a difference a year makes.”
Parent- Gen Mkt	TV	Differences- Roach	A roach to a 6th grader is an insect; a roach to a 7th grader is part of a marijuana joint. “What a difference a year makes.”

Evaluation of the National Youth Anti-Drug Media Campaign

Target Audience	Media	Ad Name	Description
Parent- Gen Mkt	TV	Differences-Clip	A clip to a 6th grader is a paper clip; a clip to a 7th grader is a roach clip. "What a difference a year makes."
Parent- Gen Mkt	TV	Differences-Bag	A bag to a 6th grader is a lunch bag; a bag to a 7th grader is a bag of marijuana. "What a difference a year makes."
Parent- Gen Mkt, Black	TV/ Radio	Symptoms	A mother is shown looking depressed, the father is yelling, a young child is curled up in the corner, looking scared. These are the family "symptoms" of teen drug use.
Parent- Hispanic	TV/ Radio	Game Show (Spanish)	A parent-child game show is shown. The mother knows where Mozart was born. But her child knows about marijuana. Parents would be surprised about what their kids know about marijuana.
Parent- Gen Mkt	TV	Under Your Nose	Camera pans through house showing everyday items that kids sniff to get high. Parents are unaware of the dangers of sniffing everyday household products.
Parent- Hispanic	TV	Under Your Nose (Spanish)	Camera pans through house showing everyday items that kids sniff to get high. Parents are unaware of the dangers of sniffing everyday household products.
Parent- Gen Mkt	TV	Funeral	Mortuary employees talk about the realities of planning funerals for young people. The ad captions discuss the risk of death from using inhalants.
Parent- Gen Mkt	TV	Clinic	A father and son are shown walking through a clinic-like setting, but finally arrive at a basketball clinic. The ad offers a telephone number to get a book on parent-child activities.
Parent- Hispanic	TV	Heroes: Swimming (Spanish)	A father carries his son as a child, then watches his son's swim meet when he's older. The father remains the child's hero throughout his life. "Get involved in his activities. . . This will help him stay away from drugs."
Parent- Hispanic	TV	Heroes: Dancing (Spanish)	A mother takes her daughter to dance lessons, then watches her daughter's dance recital when daughter is older. The mother remains the child's hero throughout her life. "Get close to her. . Support her. . .this will help her stay away from drugs."

Appendix D. WAVE 1 – NSPY Anti-Drug Advertisements

Target Audience	Media	Ad Name	Description
Parent- Gen Mkt	TV	Instructions-Involved	A girl is shown walking with books, a boy is fixing his bike, a girl is playing with a soccer ball. All have parenting “instructions” visible on their bodies. Wouldn’t it be great if kids came with instructions? The instructions advise the parent to stay involved with the child.
Parent-Black	TV/ Radio	Instructions-Involved	A boy is shown on a dock, a girl plays with a soccer ball, a boy looks in a mirror. All have parenting “instructions” visible on their bodies. Wouldn’t it be great if kids came with instructions? The instructions advise the parent to stay involved with the child.
Parent- Gen Mkt	TV	Instructions-Reward	Kids are shown walking, playing with dog, running through the hose. All have parenting “instructions” visible on their bodies. Wouldn’t it be great if kids came with instructions? The instructions advise the parent to reward child and provide positive reinforcement.
Parent- Black	TV	Instructions-Reward	Kids are shown playing with their father, eating ice cream, walking. Wouldn’t it be great if kids came with instructions? All kids have parenting “instructions” visible on their bodies. Instructions advise to reward child - provide positive reinforcement.
Parent- Hispanic	TV/ Radio	Mirrors (Spanish)	A boy wanders through a house of mirrors while his parents search for him. “Your child can be under the illusion that smoking marijuana is harmless.” It isn’t.
Parent- Gen Mkt and Black	Radio	Basketball	Activities are listed that kids would rather do than drugs. The number one deterrent to drugs is parents and the time spent with their kids.
Parent- Gen Mkt	Radio	Cooking Dinner	Boredom is one reason kids get involved with drugs. Stay involved with your kids.
Parent- Gen Mkt	Radio	Tree Fort	Activities are suggested to do with your kids: rollerblade, play chess, go to movie. Be aware of at risk hours. Between 4 PM and 6 PM is when kids are most likely to try drugs.
Parent- Hispanic	Radio	Pepperoni (Spanish)	The best way to keep youth younger than 15 from using drugs is by supervising them and being an effective parent.

Evaluation of the National Youth Anti-Drug Media Campaign

Target Audience	Media	Ad Name	Description
Parent- Gen Mkt	Radio	Differences-Grass	To a 6th grader, grass is something you cut; to a 7th grader, it's something you smoke . "What a difference a year makes."
Parent- Gen Mkt	Radio	Differences-Bag	To a 6th grader, a bag is something that holds your lunch; to a 7th grader, it's something that holds your marijuana. "What a difference a year makes."
Parent- Gen Mkt	Radio	Happy Birthday Steven	A mother describes what she does (feeding, bathing) to take care of her teenaged son who used inhalants and suffered brain damage.
Parent- Hispanic	Radio	Happy Birthday Raul (Spanish)	A mother describes what she does (feeding, bathing) to take care of her teenaged son who used inhalants and suffered brain damage.
Parent- Gen Mkt, Black	Radio	Keep Trying	A boy describes all the times he was told by his parent to keep trying. He encourages parents to "keep trying" to talk to kids about marijuana.
Youth- Gen Mkt	TV	Andy McDonald	Skate boarding champion Andy McDonald talks about getting high from skate boarding, not drugs.
Youth- Gen Mkt, Black	TV/ Radio	Venus and Serena Williams	Tennis champions Venus & Serena Williams advise against drug use. "Drugs kill dreams."
Youth- Gen Mkt	TV	Dixie Chicks	The band, the Dixie Chicks, talk about the temptations to use drugs and advise against drug use.
Youth- Gen Mkt	TV/ Radio	Scatman	Scatman performs in a music video style to convey that "Drugs ain't about nothing."
Youth- Hispanic	TV	Natural High (Spanish)	Youth are shown skate boarding, climbing, kick boxing, performing in a band. The best kinds of highs come from doing things well, not using drugs.
Youth- Black	TV	Most Teens	Girls are shown jumping rope, boxing, playing basketball, and not using drugs. "I'm too smart to be doing stupid stuff like that."
Youth- Gen Mkt.	TV	No Thanks	A boy at a party is offered marijuana. Different ways to say no to drugs are shown.

Appendix D. WAVE 1 – NSPY Anti-Drug Advertisements

Target Audience	Media	Ad Name	Description
Youth- Gen Mkt, Black	TV	How to Say No	Alternative ways (angry, rap, dramatic) to say no to drugs are shown.
Youth- Gen Mkt	TV	Michael Johnson	Michael Johnson, the world’s fastest 200m & 400m runner, is featured. “None of this would be possible if I had used drugs.”
Youth- Hispanic	TV	You Know How to Say It (Spanish)	A youth is offered vegetables, asked to copy homework, asked to ditch basketball, asked to smoke marijuana. “You know how to say no.”
Youth- Gen Mkt	TV	Hockey	A boy plays hockey without protective gear. Smoking marijuana is like playing hockey without the right equipment. You can’t get in the game.
Youth- Gen Mkt, Black	TV	Vision Warrior	Young man talks about how smoking marijuana led him to use harder drugs.
Youth- Black	TV	No Skills	Kids are shown making mistakes and unable to play sports well after using drugs.
Youth- Gen Mkt	TV	U.S. Women’s Soccer Team	The members of the 1999 World Champion U.S. Women’s Soccer Team talk about what a great time it is to be a girl. “Don’t blow it by getting involved with drugs.”
Youth- Gen Mkt, Black	TV/ Radio	Mary J. Blige	Singer Mary J. Blige talks about loving and accepting yourself, and staying drug free.
Youth- Gen Mkt	TV	Tara Lipinski	Important female sport figures in past paved the way for women today to play sports. Figure skating champion Tara Lipinski is featured and counsels against drug use.
Youth- Hispanic	TV	Second Trip (Spanish)	Youth are shown skate boarding, climbing, kick boxing, performing in a band. The best kinds of highs come from doing things well, not using drugs.
Youth- Gen Mkt	TV/ Radio	Brothers	A little brother imitates his big brother. The big brother is offered marijuana, but refuses it because he knows he’s a role model.
Youth- Gen Mkt, Black	TV/ Radio	Mother / Daughter	A mother talks about how proud she is of her daughter. The daughter meets her friend in the park to smoke marijuana. “Smoking marijuana won’t kill you, but it will kill your mother.”

Evaluation of the National Youth Anti-Drug Media Campaign

Target Audience	Media	Ad Name	Description
Youth- Hispanic	TV	Fast Food (Spanish)	A young boy under the influence of drugs can't answer when asked what he wants at fast food restaurant. He is ridiculed by others in line and embarrasses himself.
Youth- Hispanic	TV	Test (Spanish)	A young girl under the influence of drugs doodles on test and can't answer any of the questions. She disappoints the teacher and herself.
Youth- Black	Radio	Steven	An urban youth talks about seeing a drug bust on Thanksgiving, being happy, staying true to himself and drug-free.
Youth- Gen Mkt, Black	Radio	What to Say Boy	A friend wants you to smoke "that wacky weed". What do you say? "I get high above the rim."
Youth- Gen Mkt, Black	Radio	What to Say Girl	The guy is great, but he wants you to get high. What do you say? "I'd rather go to math camp."
Youth- Hispanic	Radio	She Did It (Spanish)	Girls talk to the "popular" girl who says no to marijuana, but remains popular.
Youth- Hispanic	Radio	The First Time (Spanish)	Kids talk about saying no to marijuana for the first time.
Youth- Black	Radio	If Pot Were a Person	Reasons are given why, if pot were a person, you wouldn't like him. He'd make you quit sports, get you in trouble with your parents.
Youth- Gen Mkt	Radio	Stressed	Girls talk about who is stressed out and who has it the worst. But the girl using drugs is really the one who's doing worst.
Youth- Gen Mkt	Radio	Make You Think	Marijuana makes you think you're interesting and attractive, when you're really not.
Youth- Black	Radio	Money	Items are listed that you can buy with your money if you don't buy marijuana.
Youth- Black	Radio	Kathy and Jackie	Kathy talks about her best friend Jackie and how, if they got high, they wouldn't have fun together
Youth- Black	Radio	What I Don't Do	A rap song is played that conveys the message that I don't do drugs and it will be all right.

Appendix D. WAVE 1 – NSPY Anti-Drug Advertisements

Target Audience	Media	Ad Name	Description
Youth- Hispanic	Radio	Boy Meets Girl (Spanish)	A boy who uses drugs meets a girl he's interested in. He thinks he's making a good impression, but she thinks he's a loser.
Youth- Hispanic	Radio	Typical Story (Spanish)	A boy's friends tell him to try smoking marijuana. He says he doesn't want to smoke. They insist. He says, "I don't need that."
Youth- Gen Mkt	Radio	Brother Jeff	The things that older brother Jeff can do are featured. Jeff doesn't get high because he knows his little brother looks up to him.
Youth- Hispanic	Radio	Weekend (Spanish)	A young man laughs and rambles incoherently when friends ask him about his "incredible" weekend. He thinks his story is great. But they can't understand anything that he says.
Youth- Gen Mkt	Radio	Excuses	Excuses you can give for not smoking marijuana are provided.
Youth- Gen Mkt	Radio	Orientation	An orientation to middle school life is presented: pizza, science class, recess, kids who smoke marijuana. Say no to drugs and you won't be treated like a little kid.

APPENDIX E. PREDICTING INTENTIONS OF YOUTH MARIJUANA USE AND PARENTAL TALK AND MONITORING

E.1 PRELIMINARY ANALYSES OF ASSOCIATIONS BETWEEN INTENTION TO EXPERIMENT WITH MARIJUANA AND RELATED BELIEFS, ATTITUDES, PERCEIVED NORMS, SELF-EFFICACY, AND BEHAVIORAL NORMS AMONG YOUTH

The fundamental assumption of the Media Campaign is that future drug use can be reduced by appropriately modifying beliefs about drug use consequences, attitudes toward drug use, and perceived societal norms concerning drug use, especially if self-efficacy to resist drug use were also enhanced by the Media Campaign. In this appendix, some of these assumptions are examined by estimating measures for the association between intentions to use marijuana in the future and a series of potential predictors of such intentions. The association between potential predictors of intention to use and intention to use marijuana has been measured by comparing odds for intention to use between two respondent groups that are defined with reference to these predictor variables. For each predictor, one group always includes those respondents who—based on a theoretical assessment of the responses—would be classified as least likely to want to experiment with marijuana use, the other, the rest of the respondents. There was no systematic attempt to optimize the cutpoints separating the two respondent groups.

A comparison will be made between the two groups of youth on the proportion of youth who responded “definitely not” when asked about their future intention of trial marijuana use. Then, these comparisons will compare the odds in one group for definitely not intending to use marijuana to the comparable odds in the other group. For each potential predictor, the two proportions will be presented, the simple odds ratio comparing these proportions, and the odds ratio adjusted for the main effects of age, race/ethnicity, region, and urbanity. The odds ratio for definitely not intending to try marijuana between two groups of youth is defined as:

$$OR = \frac{\text{Prob \{definitely not intending among group 1\}}}{\text{Prob \{definitely not intending among group 2\}}} \cdot \frac{1 - \text{Prob \{definitely not intending among group 2\}}}{1 - \text{Prob \{definitely not intending among group 1\}}}$$

Also presented will be the 95 percent confidence intervals for both odds ratios. Odds ratios with a confidence interval that includes 1 provide no evidence for predictor-intention association. Similarly, if the 95 percent confidence interval of one odds ratio includes another odds ratio, the two odds ratios are not significantly different. (Note, however, that this is a weak test for a significant difference. A stronger test would be to insist that the two confidence intervals do not overlap. Scoring high on a predictor with an odds ratio significantly above 1, indicates increased odds for definitely not intending to experiment with marijuana. On the other hand, scoring high on a predictor with an odds ratio significantly below 1, indicates increased odds for intending to experiment.

In the tables below, estimates will be presented for predictor groups representing prior trial use, attitudes, beliefs, perceived norms, resistance skills, peer behavior, and other predictors, including prior use of other substances, deviance, and indicators of family relationships.

Within each of the predictor groups, individual predictors have been sorted in descending order on adjusted odds ratios.

When interpreting the results, the reader needs to be mindful of the following limitations:

1. By itself, even a statistically significant odds ratio between a potential predictor and intention to experiment with marijuana does not prove that predictor to be causally related to intention. There are two limitations on the causal interpretation of odds ratios: (1) causation between predictor and intention to use can go either way, and (2) scoring high on a predictor and definitely intending to experiment with marijuana could both be due to some third factor for which the odds ratio had not been adjusted.
2. By itself, the absence of significant association between a predictor and intention to experiment with marijuana does not prove that the predictor is not causally related to intention. For example, coarsely grouping responses to two levels only could have weakened the true association. Also, not controlling for other factors may have masked the association.
3. One predictor with an apparently larger odds ratio than another predictor may not have a stronger causal effect on intentions than the other predictor.
4. The estimates in these tables are for intentions of trial marijuana use. They were derived from data for youth who had not reported prior marijuana use. Intentions to use marijuana regularly will be presented in subsequent reports as data on a sufficient number of prior users become available.

The first set of tables present predictor variable-intention odds ratio estimates for predictor variables representing prior behavior, beliefs, attitudes, norms, and self-efficacy. The last set of tables summarize odds-ratio estimates for selected noncognitive factors.

PRIOR BEHAVIOR AND INTENTIONS

According to the evaluation model, the effects of beliefs, norms, and self-efficacy on behavior are mediated through intentions, and actual drug use is expected to be strongly associated with intention to use drugs. Although one cannot use Wave 1 data to examine the relationship of current intentions with actual behavior in the future, the association between prior behavior and current intentions is quite strong (Table E-A). Prior non-users were much more likely than prior users to report definitely no intention to try marijuana in the next 12 months.

Table E-A
Intentions to use marijuana in the next year by prior marijuana use

Intention	Percent definitely not intending among those who never used	Percent definitely not intending among those who have used in the past 12 months	Simple odds ratio (confidence interval)	Adjusted odds ratio (confidence interval)
Trial use	85.7	14.4	35.5 (22.3, 56.6)	30.2 (18.6, 48.9)

This strong association of past behavior with current intentions is unsurprising. The more interesting question concerns the relationship of current intentions to future behavior. By the end of the study, data will be available on that more interesting question. In the mean time, it is at least reassuring that past behavior is related to the expected manner to current intentions.

Assuming that current intentions are useful predictors of future behavior, attention is now focused on finding the attitudes, beliefs, subjective norms, behavioral norms, and measures of self-efficacy that predict current intentions well. The finding of a large number of predictors in the NSPY dataset will be indication of good questionnaire design.

ATTITUDE AND INTENTIONS

- The relationship of attitudes to intention is quite strong. Those who held strong anti-marijuana attitudes were much more likely to express “definitely not” intentions for marijuana trial than those who held less than strong attitudes (Table E-B).
- Attitudes about own trial (bad/good and unenjoyable/enjoyable) were more strongly associated with intention than disapproval about others’ marijuana trial and perceptions of others’ risk of harm.
- Perceived risk of harm that others expose themselves to when trying marijuana was the least powerful predictor in the group, but still quite powerful.

Table E-B
“Definitely not” intending to try marijuana in the next year by attitude about trial, among prior non-users of marijuana

Attitude	Percent definitely not intending among those expressing strong anti-drug attitude	Percent definitely not intending among those expressing other than strong anti-drug attitude	Simple odds ratio (confidence interval)	Adjusted odds ratio (confidence interval)
Marijuana trial is bad/good	95.5	49.2	22.16 (13.85, 35.45)	22.31 (13.83, 35.98)
Marijuana trial is unenjoyable/enjoyable	95.5	58.9	14.40 (9.05, 22.92)	14.83 (9.24, 23.81)
Disapproval of marijuana trial by others	97.0	74.0	10.91 (7.19, 16.57)	10.56 (6.93, 16.10)
Others’ risk of harm through marijuana trial	95.8	80.2	5.61 (3.66, 8.57)	5.15 (3.36, 7.92)

BELIEFS AND INTENTIONS

Beliefs were also strong predictors of intentions. Those who held strong anti-drug beliefs were between two to seven times as likely to respond “definitely not” when asked about the likelihood that they will try marijuana than those who held “less strong anti-drug beliefs.

- The strongest predictor is the belief that trying marijuana would not lead to having a good time with friends. Those who thought it was very unlikely that they would have a good time with friends were nearly seven times as likely to report “definitely not” intentions than those who thought otherwise. Similarly, those who thought it was very likely that marijuana trial would lead to loss of self-control were nearly six times as likely to definitely not intend marijuana trial than those who thought otherwise.
- Those who believe that they would not feel better, that they might get into trouble with the law or that they would not feel more relaxed if they used marijuana are between three to five times more likely to definitely not intend marijuana trial as those who held other beliefs.
- Beliefs that marijuana trial would upset parents or lead to use of stronger drugs were less powerful but still positive predictors of intentions. Disbelief that marijuana trial would make the youth be more like the coolest kids was also only a moderately powerful predictor.

Table E-C
“Definitely not” intending to try marijuana in the next year by beliefs about outcome of trial, among prior non-users of marijuana

Belief	Percent definitely not intending among those expressing strong anti-drug belief	Percent definitely not intending among those expressing other than strong anti-drug belief	Simple odds ratio (confidence interval)	Adjusted odds ratio (confidence interval)
(Not) Have a good time with my friends	95.1	75.1	6.59 (3.93, 11.03)	6.47 (3.84, 10.89)
Lose control of myself	95.7	78.2	5.93 (3.11, 11.31)	5.45 (2.85, 10.50)
(Not) Feel better	92.3	72.8	4.39 (2.97, 6.50)	4.39 (2.96, 6.53)
Get in trouble with the law	93.2	77.7	3.89 (2.43, 6.23)	3.61 (2.24, 5.82)
(Not) Be more relaxed	92.3	75.9	3.75 (2.46, 5.71)	3.53 (2.31, 5.41)
(Not) Be like the coolest kids	88.5	73.4	2.80 (1.98, 3.96)	2.82 (1.98, 4.02)
Upset my parents	86.7	70.1	2.81 (1.90, 4.13)	2.76 (1.85, 4.12)
Start using stronger drugs	90.8	81.6	2.31 (1.20, 4.46)	2.36 (1.21, 4.57)

SUBJECTIVE NORM AND INTENTIONS

As expected, the subjective norms of perceived strong disapproval of marijuana trial by important referents, by parents, and by friends were also strong predictors of intentions. (In the questionnaire, teens were first asked about disapproval by “most people important to you,” then about disapproval by “close friends,” and lastly about disapproval by parents. See questions C6a to C8a of the Teen questionnaire.) The odds of not intending increases between four to five times for those who perceive strong disapproval relative to those who perceive less than strong disapproval. However, disapproval by parents or friends did not have a substantially different effect than disapproval by important referents.

Table E-D
“Definitely not” intending to try marijuana in the next year by perceived approval of own trial, among prior non-users of marijuana

Normative referent	Percent definitely not intending among those who said others express strong disapproval	Percent definitely not intending among those who said other than strong disapproval	Simple odds ratio (confidence interval)	Adjusted odds ratio (confidence interval)
Friends	93.1	73.1	5.00 (3.29, 7.60)	4.91 (3.21, 7.50)
Most people important to me	88.9	61.3	5.05 (3.27, 7.79)	4.87 (3.14, 7.57)
Parents	87.3	57.4	5.00 (2.88, 8.67)	4.60 (2.64, 8.02)

SELF-EFFICACY TO REFUSE MARIJUANA AND INTENTIONS

Self-efficacy was also a strong predictor of intentions. The odds of strong intentions to avoid marijuana trial increased between four to nine times for those reporting high self-efficacy to resist marijuana in different contexts. Among the self-efficacy items, the effect is strongest for being able to say no when at a friends’ house unsupervised and weakest for being on school property.

Table E-E
“Definitely not” intending to try marijuana in the next year by self efficacy to resist marijuana, among prior non-users of marijuana

Can say no to marijuana at...	Percent definitely not intending among those who said completely sure can say no	Percent definitely not intending among those who said other than completely sure	Simple odds ratio (confidence interval)	Adjusted odds ratio (confidence interval)
A friend’s house whose parents are not home	92.7	62.4	7.57 (5.67, 10.11)	8.62 (6.37, 11.67)
Very close friend suggests it	92.8	67.3	6.27 (4.70, 8.35)	6.92 (5.14, 9.31)
Party where most people are using it	91.9	67.6	5.45 (4.11, 7.23)	6.49 (4.81, 8.74)
If home alone feeling sad and blue	89.4	61.8	5.14 (3.77, 7.01)	5.59 (4.06, 7.71)
On school property	87.7	63.9	4.10 (2.83, 5.88)	4.92 (3.37, 7.20)

PEER BEHAVIOR AND INTENTIONS

Perceived behavior of peers is also a strong predictor of intentions. Those who had none or a few friends who had tried marijuana in the past 12 months were nearly five times as likely to hold strong intentions to avoid marijuana trial than those who had a larger number of friends who engaged in marijuana trial during the same period of time. Receipt of marijuana offers is similarly associated with intentions. Usage by general peers may be slightly less powerful than usage by friends, but the odds ratios are not significantly different.

Table E-F
“Definitely not” intending to try marijuana in the next year by behavioral norm, among prior non-users of marijuana

Behavioral norm regarding marijuana use	Percent definitely not intending among those who said none or a few	Percent definitely not intending among those who said other than none or a few	Simple odds ratio (confidence interval)	Adjusted odds ratio (confidence interval)
Friends used once/twice in past 12 months	90.5	65.8	4.93 (3.32, 7.32)	4.75 (3.12, 7.22)
Kids of the same age used once/twice in past 12 months	92.9	79.3	3.41 (2.48, 4.70)	3.15 (2.23, 4.46)
Who has offered marijuana	92.3*	73.5**	4.27 (3.21, 5.68)	3.92 (2.89, 5.32)

* Among those who said “no one offered me marijuana”.

**Among those who said other than “no one offered me marijuana”.

SUMMARY OF COGNITIVE PREDICTORS OF INTENTIONS

When we consider all the cognitive variables together, it appears that attitudes are most important for predicting intention. The self-efficacy measures were the next most strong predictors, but they are more comparable in strength to certain beliefs, perceived norms, and behavior of friends and peers than to attitudes.

More importantly, all of the cited cognitive factors are positive predictors of intentions. This multiplicity of good predictors indicates that the NSPY questionnaire is a sensitive tool for tracking incipient change. If attitudes, beliefs, perceived norms, and self-efficacy change more quickly than intentions, such changes will be quickly detected.

OTHER PREDICTORS AND INTENTION

The next section turns to the role of noncognitive predictors of intention. According to the model of effects, these may influence intention indirectly through their effects on attitudes, beliefs, norms, and self-efficacy. However, an alternative model of effects may posit that these are directly related to intention. In either case, it is important to know whether they are at all associated with intention. The results that follow describe these relationships, but the paths through which they might affect intention are not presented in this report.

Table E-G shows that religiosity is a stronger predictor of intention to definitely not use marijuana than grades or participation in extra-curricular activities. Not all extra-curricular activities affected intention. Participation in arts and athletics does not appear to differentiate youth on intention. Involvement in Boys and Girls Clubs, religious groups, and other activities made about the same (small) difference as high grades. Surprisingly, educational aspirations were not associated with intention to avoid marijuana.

Table E-G
“Definitely not” intending to try marijuana by religiosity, grades, educational aspirations, and extra-curricular participation

Predictor	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Religiosity—How important is religion in your life?			
Not at all/a little	76.0	2.47	2.40
Pretty/very important	88.7	(1.87, 3.30)	(1.80, 3.20)
Grade point average			
B or less	82.9	1.54	1.53
B+, A- or A	88.2	(1.17, 2.03)	(1.16, 2.02)
Educational aspiration			
4 year college or more	85.5	.97	.95
2 year college or less	85.9	(.71, 1.32)	(.69, 1.31)
Participation in organization:			
Some other activity than those listed below, including volunteering:			
No	82.3	1.62	1.74
Yes	88.3	(1.23, 2.11)	(1.32, 2.29)
Boys or Girls Clubs			
No	84.8	1.60	1.54
Yes	89.9	(1.05, 2.45)	(1.01, 2.37)
Religious youth groups			
No	83.9	1.38	1.34
Yes	87.8	(1.05, 1.83)	(1.01, 1.78)
Athletics			
No	85.4	1.03	.98
Yes	85.7	(.77, 1.36)	(.74, 1.31)
Performing arts			
No	85.4	1.03	.92
Yes	85.7	(.79, 1.35)	(.70, 1.21)

PRIOR USE OF OTHER SUBSTANCES AND INTENTION

As shown in Table E-H, prior use of cigarettes, alcohol, and inhalants were all strong predictors of intentions. The data suggest that cigarette usage is the strongest predictor, but the differences are not statistically significant.

Table E-H
“Definitely not” intending to try marijuana by prior use of illegal substances

Predictor	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Previous use of substances:			
Cigarettes in past year			
No	89.9	6.93	6.90
Yes	56.1	(4.84, 9.91)	(4.75, 10.03)
Alcohol in past year			
No	90.6	4.13	3.96
Yes	69.9	(3.12, 5.48)	(2.95, 5.33)
Inhalants ever			
No	86.0	5.85	7.03
Yes	50.0	(2.42, 14.16)	(2.87, 17.23)

DEVIANCE AND INTENTION

The types of illegal behavior that youth may avoid are differentially related to intention. For instance, never damaging school property is more strongly related to intention than not ever getting into a serious fight. Similarly, the types of behaviors in which deviant friends engage also matter differentially. For instance, whether friends smoke cigarettes is more important than whether they steal. In general, deviant behavior by self and friends is more important than grades, educational aspirations or extra-curricular participation, but not as strong a predictor as the cognitive variables discussed earlier.

Table E-I
“Definitely not” intending to try marijuana by prior illegal behavior and time spent with at-risk friends

Predictor	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Illegal behavior:			
Damaged school property on purpose			
Never	87.8	3.58	3.69
1-5 Times	66.7	(2.52, 5.09)	(2.58, 5.29)
Stole/shoplifted something worth <\$50			
Never	88.2	2.73	2.77
1-5 Times	73.4	(2.01, 3.71)	(2.02, 3.80)
Got into a serious fight			
Never	86.9	1.81	1.91
1-5 Times	78.5	(1.29, 2.53)	(1.35, 2.69)
Time spent with deviant friends:			
Who smoke cigarettes/chew tobacco			
Never	91.9	3.82	3.63
1-7+ Times	74.8	(2.88, 5.07)	(2.68, 4.90)
Who get into trouble			
Never	90.3	2.51	2.59
1-7+ Times	78.7	(1.91, 3.31)	(1.96, 3.44)
Who fight a lot			
Never	89.9	2.32	2.42
1-7+ Times	79.2	(1.76, 3.05)	(1.83, 3.20)
Who take things not belonging to them			
Never	87.5	1.80	1.81
1-7+ Times	79.4	(1.35, 2.41)	(1.35, 2.43)

FAMILY AND INTENTIONS

Youth reports of parental monitoring, family life, and parental discussions are moderately strong predictors of intentions. The only variable in Table E-J that was not a significant predictor of intentions was time spent without supervision.

Youth perceptions that parents know about activities they are engaged in when away from home, know about their plans for the coming day, and that they would know about their drug use, do predict low intentions for marijuana trial, but not as strongly as anticipated. The odds

of not intending to try marijuana increase by about two to three times for those who report their parents always engage in the latter monitoring strategies.

The quality of family life makes about the same difference as monitoring. Teens who never argued with their parent were only minimally more likely to express intentions to definitely not try marijuana. Enjoyment of time spent with parents is slightly more important.

Table E-J
“Definitely not” intending to try marijuana by youth reports of parent-child monitoring and family togetherness

Predictor—youth reports	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Monitoring:			
Parents know what I am doing when I am away from home			
Always/almost always	91.5	2.82	2.73
Other than always	79.4	(2.11, 3.77)	(2.03, 3.67)
Parents have a good idea about my plans for coming day			
Always/almost always	90.8	2.08	2.03
Other than always	82.6	(1.52, 2.85)	(1.47, 2.81)
Time spent without supervision			
Never	90.9	1.81	1.63
Other than never	84.9	(1.07, 3.05)	(.96, 2.77)
Family life—last 30 days:			
Enjoyed being w/ parents			
Often to always/almost always	90.1	2.90	2.80
Other than often or always	75.9	(2.20, 3.81)	(2.12, 3.70)
Feeling of togetherness			
Often to always/almost always	89.3	2.18	2.12
Other than often or always	79.2	(1.66, 2.87)	(1.61, 2.80)
Fought/argued with parents			
Never	89.3	1.57	1.56
Other than never	84.2	(1.12, 2.19)	(1.11, 2.19)
Parents likely to know if use			
Very likely	91.6	2.25	2.11
Other than very likely	82.8	(1.59, 3.18)	(1.49, 2.99)

Overall, youth reports of parent-child talk about drugs mattered somewhat less than monitoring. Those who had talked with their parents about drugs and alcohol were somewhat more likely to not intend marijuana trial. However, discussion of rules about cigarettes made no difference (Table E-K), a finding that does not correspond to the

relatively stronger effect of not actually smoking cigarettes on intentions to avoid trial, particularly when compared to the lower effect of non-use of alcohol.

More frequent conversation about drugs increases the odds of definitely not intending by about 1.7. The topics discussed about drug use itself are differentially related to intention. Talk about people who have gotten into trouble with drugs does not appear to matter very much, while those who reported talk about what to do to stay away from drugs and drug use in the media have odds ratios about 2.3 or 2.4.

Table E-K
“Definitely not” intending to try marijuana by youth reports of parent-child talk

Predictor—youth reports	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Parent—child talk (child reports)			
Family rules—alcohol			
No	81.6	1.79	1.73
Yes	88.8	(1.36, 2.36)	(1.31, 2.28)
Family rules—cigarettes			
No	83.3	1.44	1.33
Yes	87.7	(1.10, 1.89)	(1.00, 1.75)
Talk about drugs:			
Never/Once	81.7	1.81	1.69
2-10+ Times	88.9	(1.37, 2.38)	(1.28, 2.23)
Topics discussed:			
Drug use in media			
No	81.6	2.62	2.45
Yes	92.1	(1.90, 3.62)	(1.77, 3.40)
What to do to stay away from drugs			
No	80.7	2.44	2.31
Yes	91.1	(1.82, 3.26)	(1.71, 3.12)
Rules about drugs			
No	81.9	1.78	1.64
Yes	88.9	(1.35, 2.34)	(1.24, 2.18)
People we know who have gotten into trouble with drugs			
No	84.3	1.25	1.27
Yes	87.0	(.95, 1.64)	(.97, 1.68)

PARENT PREDICTORS OF YOUTH'S TRIAL INTENTION, AMONG PRIOR NON-USERS OF MARIJUANA

As Table E-L shows, parental reports of monitoring and family life quality were weak predictors of youth intentions. Most of the parental monitoring variables were not significantly positive predictors. The one exception was for youth of parents who claim to never leave their children unsupervised. A reasonable speculation as to why these variables have low predictive power for youth intentions is that parental monitoring may be a reaction to warning signs that the youth is at risk.

Engaging in fun activities with the youth outside the home was a statistically significant predictor, but the odds ratio was still small. A feeling of family togetherness appeared to be the strongest predictor in the groups, but it, too, had an odds ratio below 2.0

Table E-L
Youth's trial intention by parent reports of monitoring and family life among prior non-users

Predictor	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Parent reports about monitoring:			
Time spent without supervision			
Never	90.7	1.87 (1.32,2.64)	1.70 (1.19, 2.43)
Other than never	83.9		
Know what child is doing when she/he is away from home			
Always/Almost always	86.8	1.26 (.96, 1.67)	1.16 (.87, 1.53)
Other than always	83.8		
Curfew time:			
Before midnight	86.1	1.28 (.82, 1.20)	1.09 (.69, 1.70)
Midnight or later	82.8		
Have a good idea about child's plans for coming day			
Always/Almost always	86.5	1.18 (.89, 1.55)	1.08 (.81, 1.43)
Other than always	84.5		
How well know child's friends			
Very well	86.5	1.11 (.84, 1.47)	1.07 (.80, 1.42)
Other than very well	85.3		
Activities with child:			
Out-of-home			
Not at all/once in past week	83.0	1.51 (1.15, 1.20)	1.37 (1.04, 1.81)
2 or more times in past week	88.1		
At-home			
Not at all/once in past week	85.0	1.09 (.82, 1.44)	.97 (.73, 1.30)
2 or more times in past week	86.1		
Family life-last 30 days:			
Feeling of togetherness			
Often to always/almost always	87.0	1.90 (1.31, 2.75)	1.76 (1.21, 2.57)
Other than often/always	77.9		
Fought/argued with child			
Never	89.1	1.45 (1.05, 2.01)	1.47 (1.06, 2.05)
Other than never	84.8		
Enjoyed being w/ child			
Often to always/almost always	86.2	1.36 (.82, 2.25)	1.21 (.73, 2.02)
Other than often or always	82.3		

As Table E-L shows, parental reports of discussions with their children about drugs generally had low predictive power for intentions. As with parental monitoring, a reasonable explanation is that parental discussions may tend to be reactive to warning signs. The one exception is discussion of concrete things to do to stay away from drugs, although the odds ratio is not very large.

Table E-M
Parent reports of talking about drugs and youth’s trial intention, among prior non-users

Predictor	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Frequency of talk regarding drugs			
Never/Once	85.5	1.02 (.73, 1.41)	1.00 (.72, 1.40)
2-10+ Times	85.8		
Topics discussed:			
What to do to stay away from drugs			
No	81.3	1.69 (1.28, 2.22)	1.66 (1.26, 2.19)
Yes	88.0		
Drug use in media			
No	85.9	.98 (.74, 1.29)	.96 (.72, 1.27)
Yes	85.6		
Rules about drugs			
No	86.3	.93 (.67, 1.31)	.90 (.64, 1.27)
Yes	85.5		
People we know who have gotten into trouble with drugs			
No	86.9	.87 (.65, 1.17)	.89 (.66, 1.20)
Yes	85.2		

Finally, the role of parents’ own background characteristics in predicting children’s intention is examined. A noteworthy result is that parents who said they had not smoked cigarettes in the past 30 days and had never used marijuana in the past also had children who did not intend to try marijuana themselves (Table E-N). However, the effects of these predictors were not strong. Recent marijuana use and alcohol use by parents was unrelated to child’s intentions for non-users. The importance of religion to parents had some slight predictive power. The other parental variables examined did not have statistically significant predictive power.

Table E-N
Parents' own cigarette smoking, alcohol and marijuana use and youth intentions to try marijuana, among prior non-users

Predictor	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Parental smoking in past 30 days			
Yes	79.1	1.75 (1.27, 2.41)	1.76 (1.27, 2.43)
No	86.8		
Parental marijuana use—ever			
Yes	82.0	1.56 (1.16, 2.10)	1.74 (1.28, 2.38)
No	87.6		
Parental marijuana use in past 5 years			
Yes	83.0	1.14 (.66, 1.97)	1.30 (.74, 2.27)
No	85.1		
Parental alcohol use in past 30 days			
Yes	84.2	1.15 (.85, 1.55)	1.26 (.93, 1.71)
No	85.9		
Parental binge drinking in past 30 days*			
Yes	82.8	1.19 (.80, 1.80)	1.20 (.80, 1.81)
No	85.4		

* Binge drinking is defined as 5 or more drinks in a row at least once in the past 30 days.

Table E-O
Parent background characteristics and youth intentions to try marijuana among prior non-users

Predictor	Percent definitely not trial	Odds ratio (CI)	Adjusted odds ratio (CI)
Parental education			
Some college or higher	84.0	.86 (.64, 1.16)	.84 (.62, 1.14)
Less than some college	85.9		
Importance of religion			
Not at all/a little important	80.8	1.43 (1.00, 2.03)	1.51 (1.06, 2.17)
Pretty/very important	85.8		
Marital status			
Dual parent household (=1)	85.8	1.22 (.89, 1.68)	1.33 (.96, 1.85)
Other than dual parent household (=0)	83.1		
Attend religious services			
Never or rarely	83.5	1.21 (.90, 1.63)	1.20 (.89, 1.62)
1-3 times a month or more	86.0		

In summary, the relationships described here support the idea that cognitive variables have very strong associations with current intentions. Other variables with moderately strong associations have been found that will be useful for studying interactions of Media Campaign effects with pre-existing conditions and for looking for indirect effects. These variables include religiosity; prior use of cigarettes, alcohol and inhalants; deviance; deviance of friends; family functioning; and youth perceptions of parental monitoring and discussions. These relationships demonstrate that the NSPY questionnaire is sensitive to a wide variety of variables that may influence intentions. As such, it should be a very useful tool for evaluating the Media Campaign.

E.2 PREDICTORS OF PARENTS' TALKING AND MONITORING INTENTIONS

In this section, the relationships of intention to talk and intention to monitor with theoretical determinants of intention are examined, specifically the odds of talking in relation to attitudes, perceived norms, and self-efficacy about talking. The odds of monitoring in relation to attitudes and beliefs about outcomes are then examined. The percentage of strong intentions to talk and monitor within the high and low categories of predictors are presented, followed by the odds-ratios. Predictors were divided at the median into high and low categories. Odds ratios were not adjusted for any other factors.

Attitudes, norms, and self-efficacy were all associated with intention to talk. Parents were asked to rank their attitudes about discussing drug use with their children on each of three 7-point scales: Extremely Bad to Extremely Good, Extremely Unpleasant to Extremely Pleasant, and Extremely Unimportant to Extremely Important. Table E-P shows the percentage of parents in high and low attitude categories that say they are definitely likely to talk to their child about specific topics. Parents who held high attitudes tended to have odds ratios for intention to talk between 3 and 5. Table E-Q shows the relationships of intention and perceived norms of talking. Again, those who perceived strong social approval had odds ratios of 2 to 5. In addition, intentions to talk about rules and ways to stay away from drugs, which parents intend to do at a higher rate than other types of talk, are more strongly associated with attitudes and norms about talk than other intentions to talk measures. The third table in this series (Table E-R) describes the association of self-efficacy to talk with talking intentions. Those who report high self-efficacy are more likely to hold strong intentions; however, the odds-ratios for self-efficacy are somewhat smaller than for attitudes and norms.

Table E-P
Parents' intentions to talk with their children about drugs in the next year by attitudes about talking

Topics of conversation	Percent definitely likely among those expressing strong pro-talking attitude	Percent definitely likely among those expressing other than strong pro-talking attitude	Simple odds ratio (confidence interval)
Family rules about using drugs	61.3	26.9	4.4 (3.6, 5.2)
Specific things my child could do to stay away from drugs	58.9	23.7	4.6 (3.8, 5.6)
Drug use in movies, music, and on TV	42.1	16.9	3.6 (2.9, 4.4)
People we know who have gotten into trouble with drugs	45.4	21.7	3.0 (2.5, 3.6)

Table E-Q
Parents' intentions to talk with their children about drugs in the next year by perceived approval of talking

Topics of conversation	Percent definitely likely among those expressing strong perceived approval	Percent definitely likely among those expressing other than strong perceived approval	Simple odds ratio (confidence interval)
Family rules about using drugs	61.6	26.0	4.6 (3.8, 5.5)
Specific things my child could do to stay away from drugs	58.5	23.8	4.5 (3.7, 5.5)
Drug use in movies, music, and on TV	41.0	17.5	3.3 (2.6, 4.0)
People we know who have gotten into trouble with drugs	44.8	22.2	2.8 (2.3, 3.5)

Table E-R
Parents' intentions to talk with their children about drugs in the next year by self-efficacy to talk

Topics of conversation	Percent definitely likely among those expressing high self-efficacy	Percent definitely likely among those expressing other than high self-efficacy	Simple odds ratio (confidence interval)
Family rules about using drugs	58.2	35.9	2.5 (2.1, 2.9)
Specific things my child could do to stay away from drugs	56.2	32.6	2.6 (2.2, 3.1)
Drug use in movies, music, and on TV	41.2	22.1	2.5 (2.1, 3.0)
People we know who have gotten into trouble with drugs	44.6	26.7	2.2 (1.8, 1.6)

Analyses of monitoring measures had similar results: those who held promonitoring attitudes and beliefs were more likely to express strong intentions to monitor (Tables E-S and E-T). The odds-ratios for attitudes predicting monitoring are fall between 2.5 and 4.7, depending on the monitoring outcome specified. In a second analysis, the study examined whether someone who had stronger beliefs that monitoring would lead to good outcomes would be more likely to intend to monitor. Four potential outcomes of monitoring (do better in school, make me feel I am doing my job as a parent, decrease drug trial, not feel like I am invading my child's privacy) were summed and then the sum was split at the median, creating two groups that had stronger or weaker beliefs in the good outcomes of monitoring. Table E-T shows that these outcome beliefs were only mildly related to parental intentions.

Table E-S
Parents' intentions to monitor in the next year by attitudes about monitoring

Monitoring behaviors	Percent definitely likely among those expressing strong pro-monitoring attitude	Percent definitely likely among those expressing other than strong pro-monitoring attitude	Simple odds ratio (confidence interval)
Set curfew	88.8	75.8	2.5 (2.0, 3.2)
Limit unsupervised time	60.4	35.7	2.7 (2.3, 3.3)
Know what child is doing when away from home	79.1	44.5	4.7 (3.9, 5.7)
Know child's friends well	69.8	40.5	3.4 (2.8, 4.1)
Know child's plans for coming day	72.4	37.7	4.3 (3.6, 5.2)

Table E-T
Parents' intentions to monitor in the next year by beliefs about the outcomes of monitoring

Monitoring behaviors	Percent definitely likely among those expressing strong pro-monitoring belief	Percent definitely likely among those expressing other than strong pro-monitoring belief	Simple odds ratio (confidence interval)
Set curfew	87.6	77.4	2.0 (1.6, 2.6)
Limit unsupervised time	50.2	44.5	1.2 (1.1, 1.5)
Know what child is doing when away from home	68.6	54.1	1.9 (1.5, 2.2)
Know child's friends well	60.5	48.9	1.6 (1.3, 1.9)
Know child's plans for coming day	60.5	48.3	1.6 (1.4, 2.0)

Section E.2 of this appendix has presented a set of tests of the models that underlie the Media Campaign and the evaluation. There are two central behaviors addressed in the evaluation: talking with children about drugs and monitoring children's behavior in a variety of ways. The first set of model tests asked whether attitudes, self-efficacy, and perceived social norms predicted intention to talk about drugs with children. Despite very high levels of general intention to engage in these behaviors, which restricts the potential predictive power of the model, there is generally strong fit of the model to the data. Those who have appropriate attitudes, who have high confidence in their ability to talk with their children about drugs, and who perceive strong social expectations from others for talking, are much more likely to intend to have those conversations. The second set of tests asked whether intentions to engage in monitoring practice could be predicted by attitudes and by beliefs in the good outcomes of monitoring. The attitudes were strong predictors of intentions. The beliefs about outcomes were also positive predictors, but they were weaker than the attitudes.

These findings are generally supportive of the questionnaire design for parents. They indicate that tracking of parents' attitudes, self-efficacy, and perceived social norms is likely to translate into the ability to predict future movement in intentions and perhaps the actual behaviors, as well.