

**Risk Factors for Substance Abuse and Other Adolescent  
Problem Behaviors among Iranian High School Students<sup>1</sup>**

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***Abstract***

Risk and protective factors, predictive of adolescent problem behaviors, are promising targets for preventive intervention. Acknowledging and addressing substance abuse and other problem behaviors in the youth population in general and among high school students in particular warrant measuring and assessing the predictors of problem behavior as a necessary step to prioritize preventive intervention plans. Longitudinal studies have identified risk and protective factors predictive of adolescent drug abuse, delinquency violence, and school dropout. This study measures risk factors for alcohol, and tobacco abuse among Iranian high school students of ages 15 to 18. The survey covers female and male as well as rural and urban populations using questionnaire modules designed exclusively for adolescents to examine risk factors. A broad set of risk factors in the community, school, family and individual/peer groups are assessed. Peers, parental control, school, self-esteem, and family coherence are found to be the most important risk and protective factors affecting adolescents in this nationwide sample.

***Keywords***

risk factors, substance, abuse, problem behaviors, protective factors, parental control, family coherence

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## Introduction

Risk and protective factors predictive of adolescent problem behaviors are promising targets for preventive intervention. Acknowledging and addressing substance abuse and other problem behaviors in the youth population in general and among high school students in particular warrant measuring and assessing the predictors of problem behavior as a necessary step to prioritize preventive intervention plans (Coie, et al 1993, Durlak 1998, Kellam, et al 1999). Longitudinal studies have identified risk and protective factors predictive of adolescent drug abuse, delinquency, violence, and school dropout (Mrazek and Haggerty 1994, Hawkins, et al 1998, Lipsey and Derzon 1998, Dryfoos 1991). The robustness of the relationship between exposure to an increasing number of risk factors and the increasing likelihood of a variety of problem behaviors is striking (Pollard, et al 1999, Newcomb 1995).

Risk factors include individual characteristics or social environments associated with an increased likelihood of substance, alcohol or tobacco abuse. Protective factors are related to decreased likelihood of abuse or nonuse. Risk factors are “those characteristics, variables, or hazards that, if present for a given individual, make it more likely that this individual, rather than someone selected at random from the general population, will develop a disorder” (Mrazek, et al 1994:12; see also Clayton 1992, Hawkins, et al 1992, Rutter and Garmezy 1983). Protective factors are those that reduce the likelihood of problem behavior either directly or by mediating or moderating the effect of exposure to risk factors (Masten and Coatsworth 1998, Fraser 1997).

This study measures risk factors for substance, alcohol, and tobacco abuse among Iranian high school students of ages 15 to 18. Using a random sample drawn from the population, it provides estimates for the prevalence, incidence, and demographic and geographic distribution of substance, alcohol, and tobacco abuse. The survey covers female and male as well as rural and urban populations using questionnaire modules designed exclusively for adolescents to examine risk factors. The instrument can be used to assess the epidemiology of risk and protection in the youth population and to prioritize specific risk and protective factors in specific populations as targets for preventive intervention.

## Methodology

The survey instrument was compiled of more than 200 items obtained from an intensive literature review concerning risk factors in the development of adolescent antisocial behavior (including Arthur, et al 2000, Hawkins, et al 1998, 1995, 1992, 1985). The instrument was designed to (a) be appropriate for

high school students ranging in age from 15 to 18 (to include 3<sup>rd</sup> graders in junior high and 1<sup>st</sup> to 3<sup>rd</sup> graders in high schools); (b) be administered within a school setting during one class period of around 50 minutes; and (c) assess a broad set of risk and protective factors in the community, school, family, individual/peer groups, and the general domain. Community factors include availability and marketing of illicit drugs. Family factors include parental disciplinary approach, family conflict, parental attitudes about substance abuse, and parental communication about drugs, alcohol and cigarettes. Peer/individual factors include perception of risk of drug abuse, delinquent behaviors, and friend's substance abuse and attitudes toward substance abuse. School factors include drug availability in school, grades achieved, and formal anti-drug education programs. The general domain factors consist of social support, participation in activities, exposure to anti-drug media messages, and intensity of religious beliefs and observance.

The questionnaire was administered in May and June 2003 to a representative nationwide probability sample of 7,786 (3,034 female and 4,752 male) high school students aged 15 to 18 years at their classrooms in urban and rural areas. The target population included 3<sup>rd</sup> graders in junior high and 1<sup>st</sup> to 3<sup>rd</sup> graders in selected high schools throughout the country. The sample excludes private, adult, and vocational training schools. It takes approximately one hour to complete the questionnaire and procedures were designed to maximize truthful responses to potentially sensitive questions about problem behaviors. Data were collected on how recent and frequent the use of various illicit drugs were, opinion about substances, problems associated with substance abuse, perceived availability of drugs in the neighborhood and school, family conflicts, peer groups, etc. In addition to detailed information about substance abuse, alcohol drinking and cigarette smoking, the questionnaire also collected basic demographic information on age, education, income, marital status, and health status of the respondents and their parents.

## Results

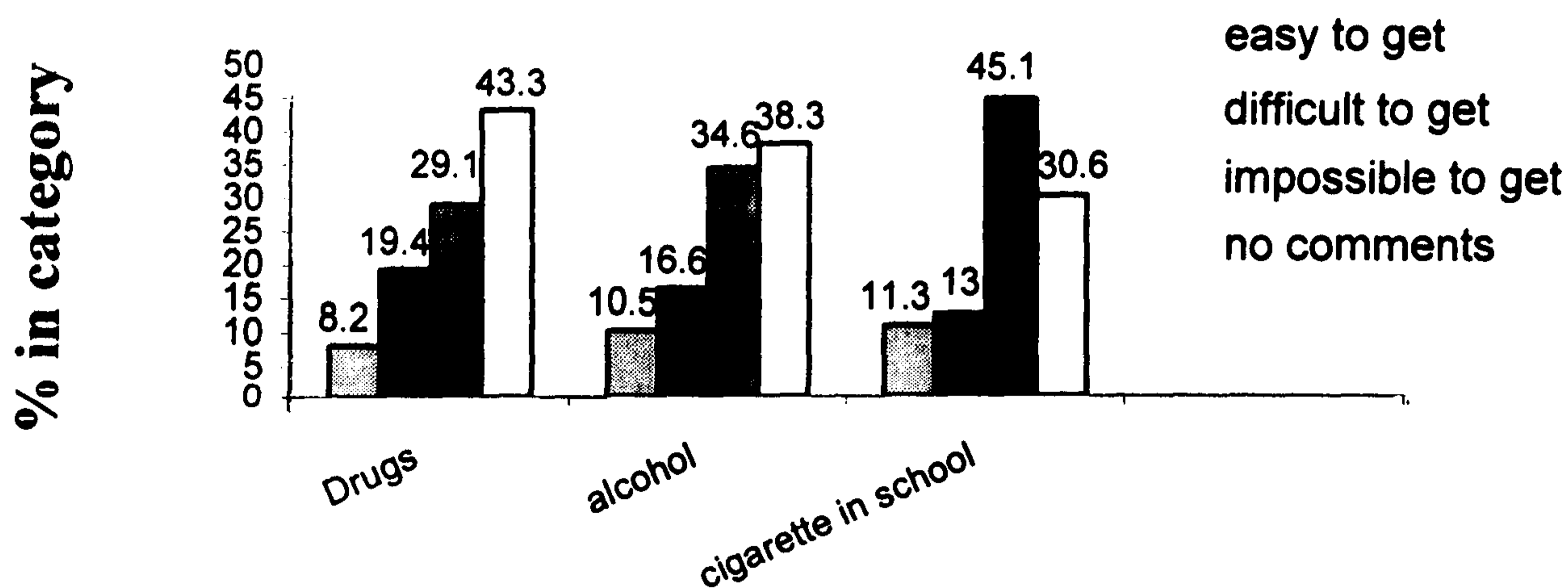
Table 1 reports gender, family status, average family size, and parental education and income of the survey respondents. The following subsections summarize the prevalence rates of risk and protective factors in various domain classifications.

**Table 1: Gender and family demographic characteristics of respondents (Percent)**

Female	48.3
Male	51.7
Average family size	>6
Family size of 6	66.0
Family size of 9	17.3
7 <sup>th</sup> child in the family	10.5
Father of 50 years of age and above	40.0
Mother of 45 years of age and above	30.5
Father illiterate	13.0
Mother illiterate	22.0
Father below 9 grade of school	65.5
Mother below 9 grade of school	88.0
Family below poverty line (less than 1,600,000 rials monthly income)	69.4
Family of lower socioeconomic status (SES)	63.0

Community risk and protective factors measured in this survey include availability, marketing, and use of illicit drugs, alcohol, and cigarettes in the

neighborhood. Drug and alcohol availability was found to be a primary community level risk factor. Respondents were asked whether it was difficult or easy to obtain drugs or alcohol in the neighborhood or cigarettes in the school. The results are reported in Figure 1 and Table 2. Data were also collected on whether neighbors use alcohol and illicit drugs (and cigarettes) and if anyone had ever offered or attempted to sell drugs, alcohol, or cigarettes to the respondents. Of those surveyed, 54.3 percent reported cigarette use, 35.3 percent reported drug use, and 20.5 percent reported alcohol use among their neighbors. Also, 20.1 percent of the respondents reported someone offering to give or sell them alcohol while 9.9 percent of the respondents reported illicit drugs being offered to them either to try or to buy. Further, more than 25 percent of the surveyed respondents reported being a participant of a family or non-family gathering in which alcohol or drugs were used. Overall the results indicate significant levels of availability and use of alcohol, drugs and cigarettes around the respondents.



**Figure 1: Percentage of Respondents Who Thought Illicit Drugs or Alcohol Were Easy or Difficult to Obtain**

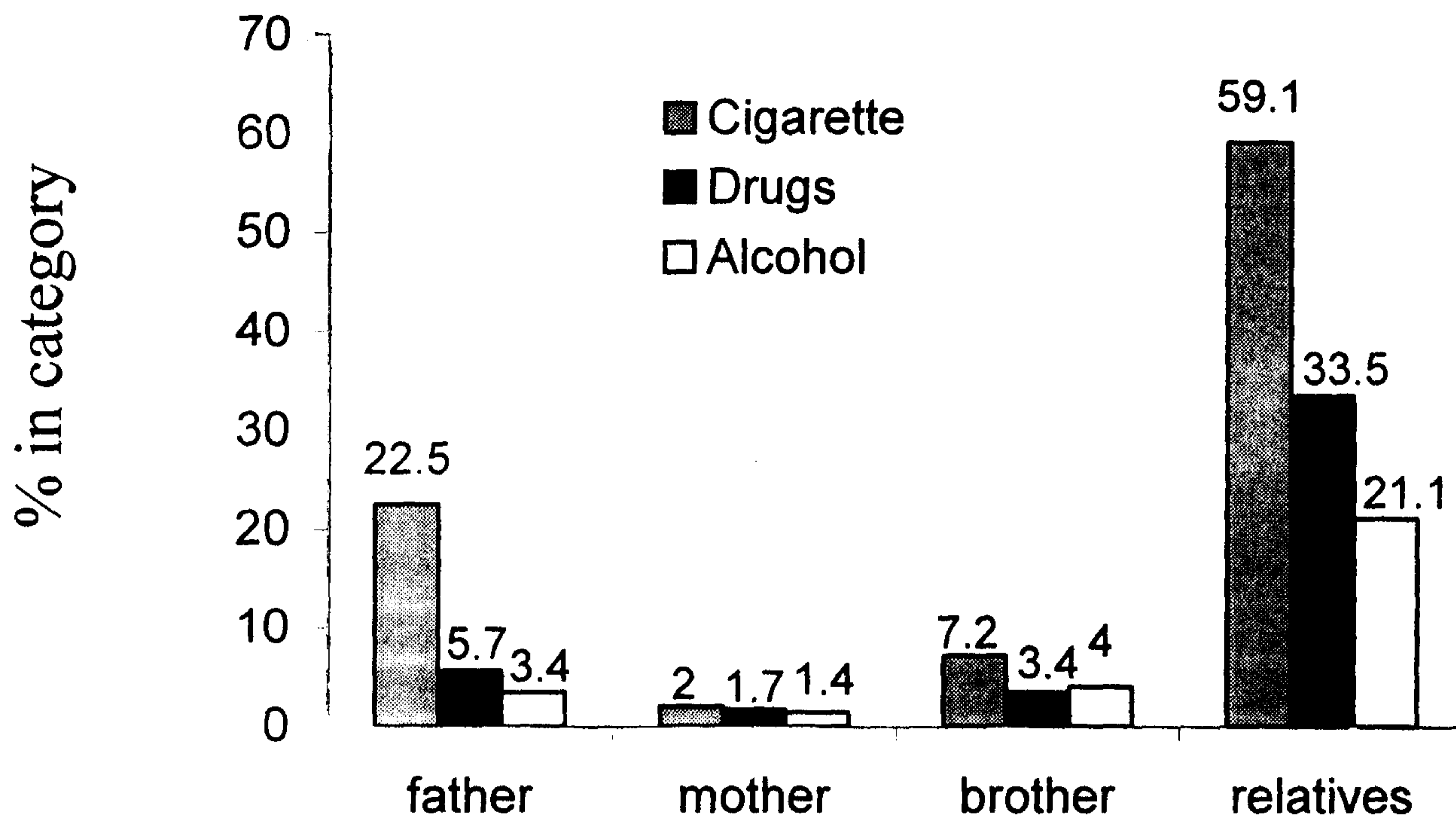
**Table 2: Percentage of Respondents Reporting Various Risk Factors**

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Easy to get drugs	19.4
Easy to get alcohol	16.6
Neighbors using drugs	35.3
Neighbors using alcohol	20.5
Neighbors smoking cigarette	54.3
Someone offered give or sell them drugs	9.9
Someone offered to give or sell them alcohol	20.1
Alcohol use in gatherings	25.2
Drug use in gatherings	26.0

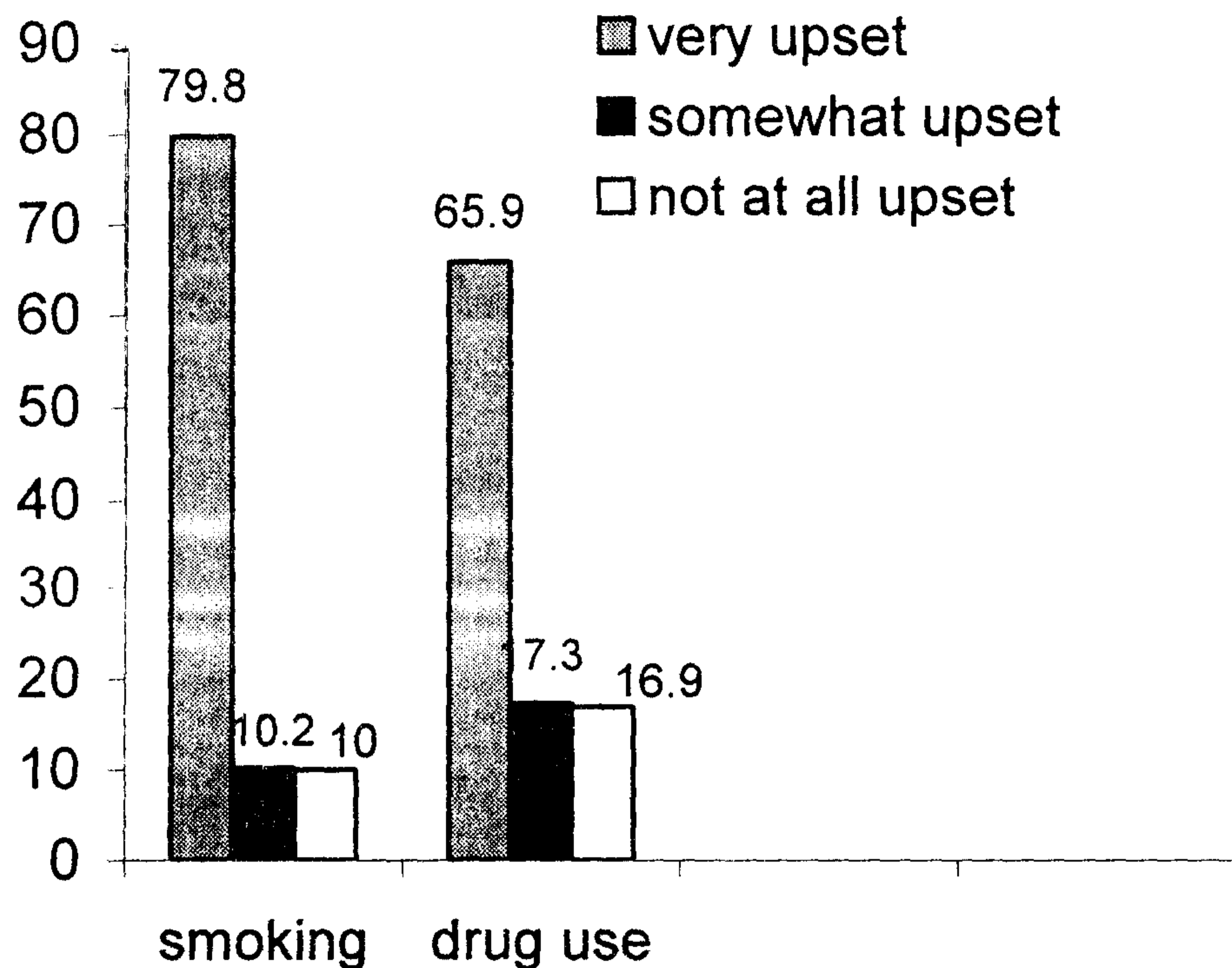
*Family Domain*

Family risk and protective factors measured in this study include parents and other family members using drugs and alcohol and smoking cigarettes, family conflict, parental attitudes toward substance use and cigarettes, and parental control and family management. Figure 2 summarizes the prevalence rates of risk and protective factors covered in this study.



**Figure 2:** Percentage of Respondents Reporting Parents' Cigarette, Alcohol, and Substance Use

Family management was measured by the following items: how strict respondents said their parents were about the way the youths dressed, how late they stayed out at night (curfew), and how much time they spent on their homework. Family conflict was measured as the frequency of arguing with parents in the past 12 months. Figure 3 summarizes the responses on youth perceptions of parental attitudes about substance use and cigarette smoking.



**Figure 3:** Percentage of Respondents Who Thought Their Parents Would Be Upset About Respondent's Smoking and Substance Abuse

Parental attitudes toward cigarette and substance use by children were reported to be highly negative. Respondents were most likely to say that their parents were more lenient about the way they dressed than on curfew and homework. Of those surveyed, 43.7 percent indicated that their parents were not strict about the way they dressed. The corresponding figures were 9.1 on homework and 20.5 for curfew. Further, 31 percent of the respondents occasionally argued with their parents and 13.1 percent reported conflicts in the family.

#### *Peer/Individual Domain*

Peer/individual risk and protective factors measured by this study include friends' delinquent behaviors; substance, cigarette, and alcohol use; and attitudes toward substance use. Of those surveyed, 16.6 percent thought their friends smoked cigarettes, 7.1 percent thought their friends used drugs, and 11.1



percent thought their friends drank alcohol. Table 3 summarizes data on peer/individual risk and protective factors.

**Table 3: Responses on Peer/individual Risk Factors**

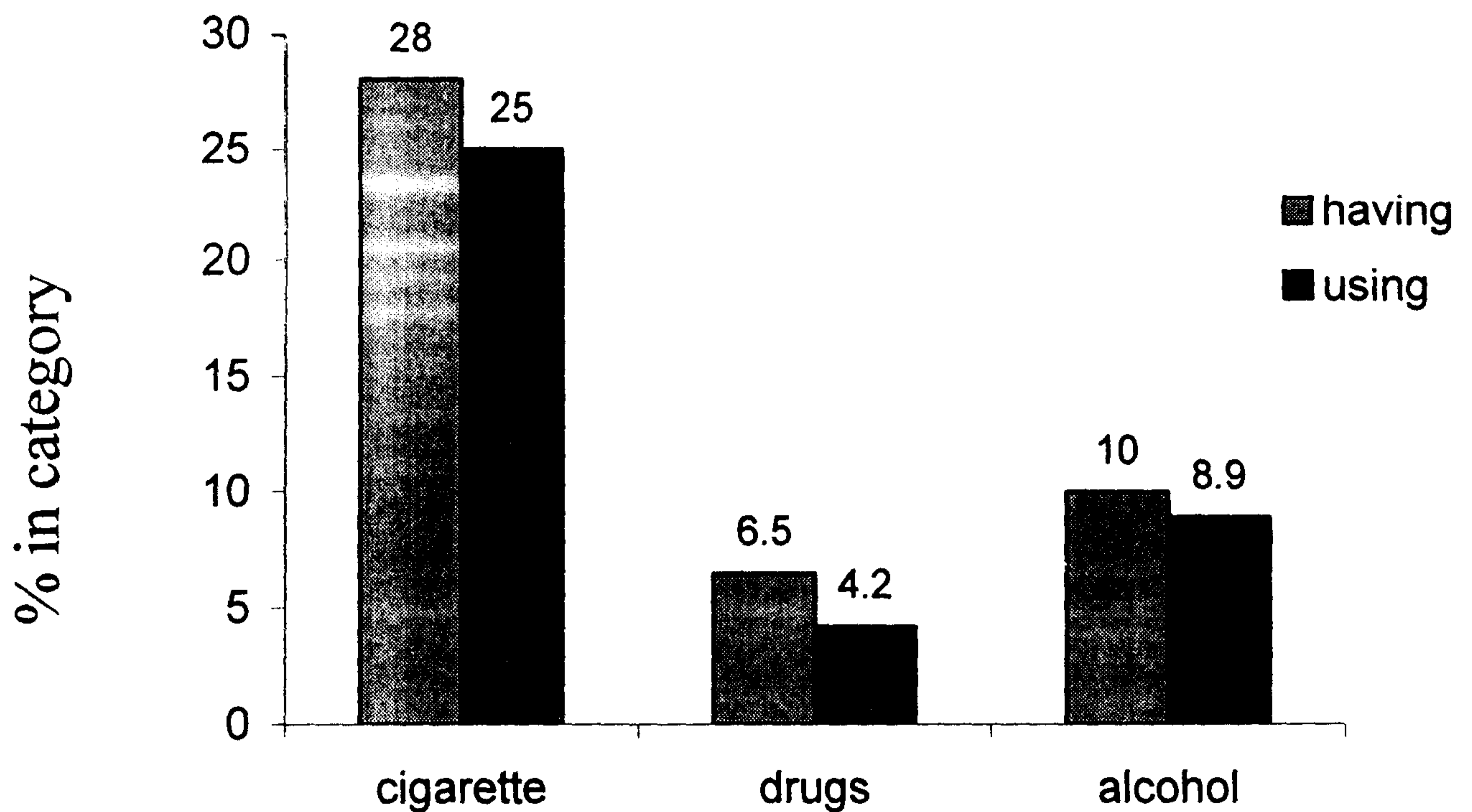
Friends would be upset if the respondent used substance and smoked cigarettes	31.2
Having friends with low academic performance	13.2
Having delinquent friends	21.0
Having friends who get involved in fights all the time	14.2
Having friends who use drugs	7.1
Having friends who smoke cigarettes	16.6
Having friends who drink alcohol	11.1
Respondents' positive attitudes toward substance use:	
a – To forget life difficulties	16.6
b– As pain reliever	12.7
c – To fight depression	14.9
d – As a show of power	14.9
e – No fear in getting intimate with substance users	6.6

Respondents were more likely to think that their parents rather than their friends would get upset at their substance use and cigarette smoking. More than one out of five respondents indicated having delinquent friends and more than one out of ten of them reported having cigarette-smoking friends. Further, the percentage of those 15-18 years old respondents who thought substance abuse may have a positive functions was found not to be small.

### *School Domain*

School risk and protective factors measured by this study include: students having, trading, and using cigarette, alcohol, and drugs in school; how strict or

lenient is the school about student behaviors; growth of alcohol and substance abuse in school in recent years; and attitudes toward substance use by the school administrators and teachers. Figure 4 summarizes survey findings on school risk factors.



**Figure 4:** Percentage of Respondents Reporting Observed Cases of Having or Using Drugs, Alcohol and Cigarettes

A number of students reported having been offered to buy drugs in school (8.5%) or to join those who trade drugs in school (5.9%). More than 25 percent of respondents indicated that their schools were no longer in control of students. A majority of respondents (62.7) thought that alcohol and substance abuse in schools has increased in recent years. Further, a number of respondents reported substance abuse (9.9%), alcohol use (6.7%), or cigarette smoking (30.1%) by their school administrators.

*General Domain*

The general domain of risk and protective factors includes social support, participation in activities, exposure to anti-drug media messages, intensity of religious beliefs and observance, and exposure to prevention messages. Respondents were asked with whom they would talk about a serious problem. This was to assess the extent to which youths had access to socio-emotional support and where that support would be sought. Possibilities included mother, father, siblings, other relatives, and friends. Having good access to parental support is a major protective factor for substance use. Respondents were also asked whether they participated in various activities. Students with significant involvement in activities are associated with lower levels of substance use. The survey also asked about frequency of religious service attendance and perceptions of importance of religious beliefs. Low religious commitment has been associated with higher levels of substance use in other studies.

Respondents spoke with their mothers (41.5 percent), their fathers (21.9 percent), and their friends (14.5 percent) about a serious problem. Only an average of 26.7 percent of the surveyed respondents had participated in an extracurricular activity in the past year. Of those surveyed, 38.5 percent indicated attending religious service on a regular basis in the previous year. Yet, an overwhelming majority seem to have strong religious beliefs (97.7). A large percentage of respondents (88.2%) reported they had heard or read messages on the harmfulness of substance abuse.

**Discussion**

This section explores the relationship between reported levels of risk and protective factors and substance, alcohol, and cigarette use among the studied students. The prevalence of risk and protective factors and the relationship of those factors to cigarette, alcohol and substance use were explored earlier using simple cross-tabulations. In this section, the strength of the relationship between risk and protective factors and substance use will be analyzed using multivariate methods. Table 3 provides the distribution of students at risk of cigarette, alcohol, or substance abuse.

**Table 3: Distribution of Students at Risk of Cigarette, Alcohol, and Drug**

Risk	Cigarette		Drugs		Alcohol	
	No.	%	No.	%	No.	%
No risk	4623	76.7	5217	86.7	5077	84.2
Some risk	1129	18.7	700	11.6	735	12.2
High risk	277	4.6	102	1.7	215	3.6
Total	6029	100	6019	100	6027	100

Significant relationships were found to exist between being at risk of smoking cigarettes, drinking alcohol, and using drugs and the following variables among the respondents ( $p=0.0001$  and Sommer's and Kendal tau were used).

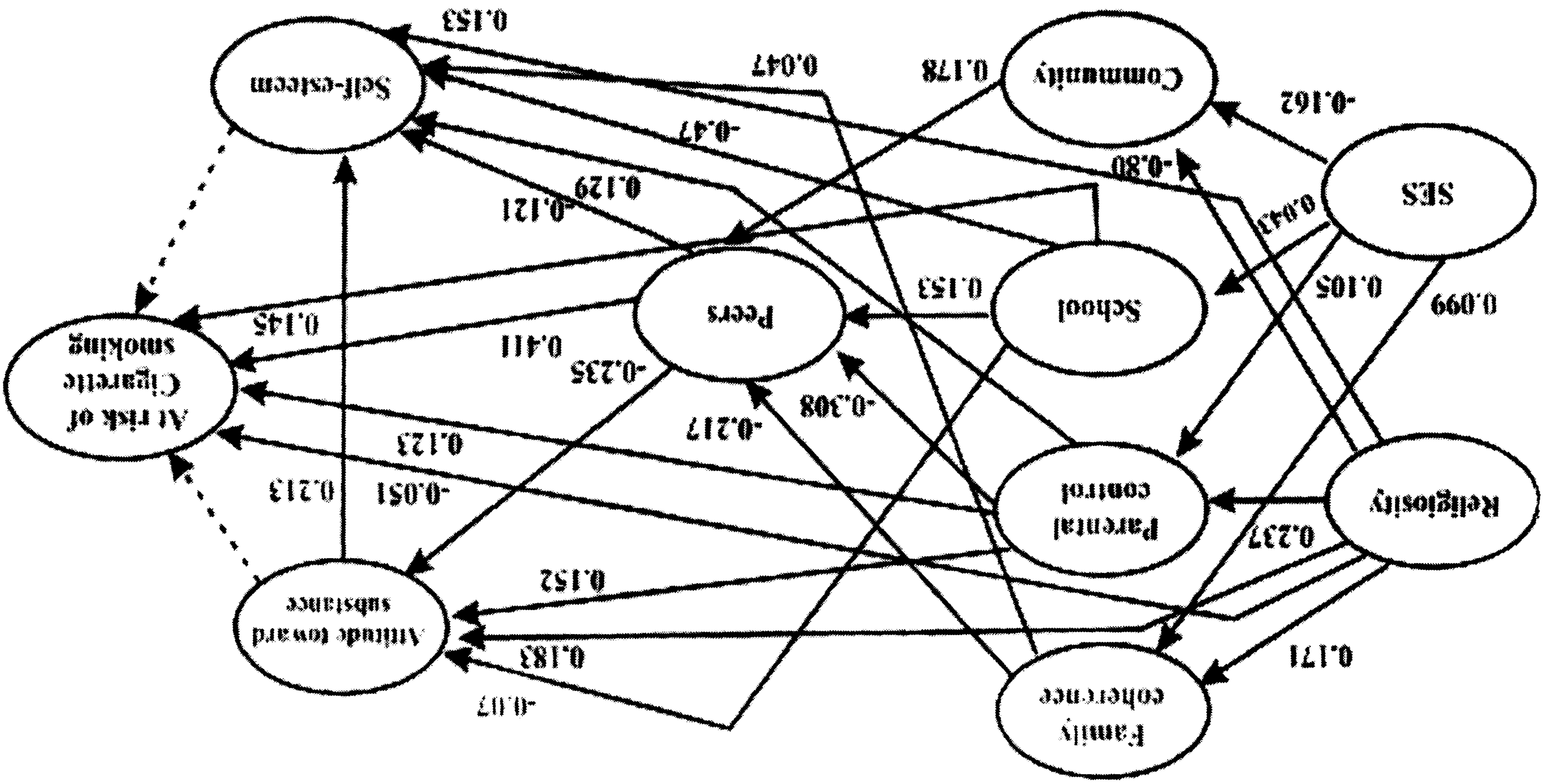
1. Grade point average (GPA): The higher the respondent's GPA, the lower is his or her chance of being at risk of cigarette smoking.
2. School year: Risks are lower for younger students.
3. Major: Students majoring in technical training and math/physics are facing more risks, followed those enrolled in humanities and natural sciences.
4. Sex: Boys are almost 7 times more likely to be at risk than girls.
5. Ethnicity: Risk factors are different across various ethnic groups considered.
6. Socioeconomic status (SES): The lower the SES, the greater the risks.
7. Religiosity: The more religious the respondents are, the lower the risks.
8. Family: Those with less coherent families are facing greater risks.
9. Parental control. The stricter the parents are about the student's behavior, the less is the chance of being at risk.
10. Delinquent peers: Risks are greater for those students who have more delinquent friends.
11. School: Availability of substance in school increases the risk of cigarette smoking among the students.
12. Community risk factors: The more the community risk factors the greater are the risk factors for the students.

13. Self-esteem: Negative relationship exists between student self-esteem and his or her being at risk.

14. Attitudes toward substance use: Student's friendlier attitude toward substance abuse and abusers are significantly and negatively related to greater risks.

Table 4: Path analysis of factors related to being at risk

Cigarette				Drugs				Alcohol			
Factors	Beta	T	Sig. Level	Factors	Beta	T	Sig. Level	Factors	Beta	T	Sig. Level
Peers	0.411	229.991	0.000	Peers	0.392	20.479	0.000	Peers	0.438	24.518	0.000
Parental control	-0.227	-13.264	0.000	Parental control	-0.175	-9.873	0.000	School	0.160	10.245	0.000
School	0.145	9.122	0.000	School	0.151	9.240	0.000	Parental control	-0.155	-9.181	0.000
Religiosity	-0.051	-3.275	0.001	Community	0.068	4.136	0.000	SES	0.068	4.537	0.000
Adj.R <sup>2</sup> =0.361 R <sup>2</sup> =0.362				adj.R <sup>2</sup> =0.356 R <sup>2</sup> =0.357				adj.R <sup>2</sup> =0.378 R <sup>2</sup> =0.379			



### **Concluding Remarks**

Data from a representative nationwide sample of 7,786 students in grades 8, 9, 10, and 11 suggest that the instrument measures reliably a broad range of risk and protective factors in multiple ecological domains. The factor structures of the scales are coherent. Reliability values for almost all of the scales are fine across all scales. The risk and protective factors are correlated with the problem behaviors as expected, providing evidence of the construct validity of the scales as measures of the specified risk and protective factors. Risk factors expected to increase with age during adolescent development include perceived availability of drugs in the neighborhood, favorable attitudes toward substance use, and peer substance use. These factors were positively correlated with grade level and SES, providing additional evidence for the validity of these scales.

Peers, parental control, school, self-esteem, and family coherence are found to be respectively the most important risk and protective factors affecting adolescents in this nationwide sample. Data indicates that 23.3 percent of studied students are at risk of cigarette smoking, 13.3 at risk of drug use, and 15.8 percent at risk of alcohol use. Further, 5.3 percent of the students are cigarette smokers and 2.6 percent of them are substance abusers.

Estimates for relative contributions of various domains are based on the limited set of risk and protective questions included in the instrument of this study. The true relative importance of the various domains may be different if the full set of factors is included in each domain. Longitudinal studies are further needed to establish conclusively the predictive validity of the risk and protective factor scales in this study.

The instrument has important applications in prevention needs assessment and strategic prevention planning. When administered to representative samples of students, the instrument can indicate the level and prevalence of student exposure to risk and protective factors in a school or in a community served by the school. It can identify subpopulations reporting high levels of risk and or low levels of protection. It can also identify specific risks that are elevated and specific protective factors that are depressed in a target group.

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