Risk and Protective Factors of Substance Abuse

Indiana Prevention Resource Center
This presentation is about the annual survey of Alcohol, Tobacco, and Other Drug Use conducted by the Indiana Prevention Resource Center.
All public and private schools in Indiana that serve grades 6th through 12th are invited to participate in the survey each year. The participants for the ATOD survey have been more than 150,000 students during the past four years. For the 2010 survey, the participation rates by students were 31.6%, by schools were 27.1%, and by school corporations were 61%.
The IPRC provides a statewide report as well as local reports to all participating school corporations. The report provides information on statewide prevalence of use by race/ethnicity, gender, region, and DSA. Also, it provides data on national outcome measures which consist of thirty-day prevalence of use, perceived risk of harm, age of first use, and perception of peer disapproval.
This year, the IPRC added 12 items in the national Youth Behavior Risk Survey which was conducted by the CDC. The items were prescription drug use without doctor’s prescription, over-the-counter drug use, type of alcohol and where alcohol was typically consumed, providing proof of age when purchasing alcohol and cigarettes, and frequency of accident or health problem due to drug use.

In addition, the IPRC introduced the Communities That Care survey items in the 2010 survey for the first time.
The CTC survey consists of two main factors which are risk factors and protective factors of substance abuse.
Each factor has four domains: community, family, school, and peer-individual.
The community domain of the protective factors has two subscales: community opportunities for prosocial involvement and community recognition for prosocial involvement.

The family domain of the protective factors has three subscales: family attachment, family opportunities for prosocial involvement, and family recognition for prosocial involvement.
The school domain of the protective factors has two subscales: school opportunities for prosocial involvement and school recognition for prosocial involvement.

The peer-individual domain of the protective factors has five subscales: social skills, belief in the moral order, interaction with prosocial peers, prosocial involvement, and rewards for prosocial involvement.

However, none of the CTC protective factors were included in the ATOD survey this year.
The IPRC added mainly the CTC risk factors in 2010 ATOD survey by the recommendation of the Social Development Research Group at the University of Washington. The sub-scales that were included in the ATOD survey are in red color.

The community domain of risk factors consist of six subscales: low neighborhood attachment, community disorganization, transitions and mobility, laws and norms favorable to drug use, perceived availability of drugs, and perceived availability of handguns.
The family domain of risk factors consist of five subscales: poor family management, family conflict, family history of antisocial behavior, parental attitudes favoring drug use, and parental attitudes favoring antisocial behavior.

The school domain of risk factors consist of two subscales: academic failure and low commitment to school.
The peer-individual domain of risk factors consist of ten subscales: rebelliousness, early problem behavior, early initiation of drug use, attitudes favoring antisocial behavior, attitudes favoring drug use, low perceived risk of drug use, friends’ antisocial behaviors, friends’ use of drugs, sensation seeking, and rewards for antisocial involvement.

The IPRC plans to include more CTC items for the next year’s survey.
The CTC risk factor scores were developed by the Social Development Research Group at the University of Washington. The score was derived from a national survey of 280,000 youth. It is based on median score of the national sample plus and minus .15 of each sub-scales’ standard deviation.

Students who are at or below the cut-off points are considered to have low risk of using substances whereas students who are above the cut-points are considered to have high risk of using substance.

Even though there are some modifications to the median score, roughly 50% of high risk for a certain domain is considered to be a problem area.
Let’s take a look at some of the sub-scales from each domain of the risk factors.

For Law and Norms Favorable to Drug Use in the Community domain, all grades had less than 50% of high risk percentages.
For Family Conflict in the Family domain, more than 50% of 8th graders were at high risk for family conflict factor.
For Academic Failure in the School domain, all grades had less than 50% of high risk percentages.
For Antisocial Peers in the Peer-Individual domain, more than 50% of 8th, 10th, and 12th graders were at high risk for family conflict factor. So, this domain could be identified as a problem area which needs a special attention.
This year, for the first time, the ATOD survey report presented prevalence data broken out at the level of defined service areas (DSAs). The DSAs are predefined geographic areas with a minimum of approximately 10,000 targeted youth, consisting of one or more counties in Indiana, and served by a single “Local Prevention Services Coalition”. There are total of 14 DSAs. In 2010, DMHA initiated the expansion of the Strategic Prevention Framework and Communities That Care at the DSA level. The DSA-level data provide more targeted information for CTC focused analysis.
For instance, in DSA 2 which is in dark blue color area, 6th – 11th graders were more likely to reports past-month use of alcohol and binge drinking.

In DSA 9 which is Marion County, 6th – 12th graders were more likely to reports past-month and lifetime use of marijuana.
All participating school corporations received their own ATOD survey reports. The local level reports include information on response rates, CTC summary tables, lifetime and monthly prevalence rates, trend and graphs of prevalence rates, age of first time use, and frequency tables of all items by grade and gender.
We provided a table on number of participating students. Take a look at the second page of your report. The table is titled “Actual Selection Criteria.”

If all students in your school participated in the survey, then it is a kind of census. So, you don’t need to worry about the response rate since response rate is 100%. In that case, you will get a pretty accurate picture of survey results of your school.

However, it does not happen in most cases. Let’s calculate your school’s response rate.

Plug in the Total number which is 500 highlighted in red to the Number of Respondents in the formula.

The total number of students of your school can be determined by each school. You can use your school’s enrollment data on the date the survey was administered.

If the total number of students in your school is 600, then response rate is 500 divided by 600 multiply by 100. It will be 83%.

If the rate is close to 90%, we can say that the sample is pretty much representative. However, students who have drug problems are more likely to be kids were not present on the survey date, then you will get an under-representative sample.
There is a protocol for checking errors to eliminate unreliable responses.

A survey with any one of the following was not included in the data analysis:

- Gender information missing
- Grade information missing
- Information missing for majority of the items (more than 95% of the survey items were not marked)
- Inconsistent responses on substance use across time measures (monthly vs. lifetime) for more than one-third of the substances asked
- Patterns of responses were pharmacologically implausible. For instance, a combination of drugs and frequencies of use whose cumulative effect would be lethal.
- Combination of age and grade was implausible. For instance, an eleven-year-old in the 12th grade.
- In the last item of the survey (Item #40), respondent indicated that he or she did not respond truthfully at all.
Let’s take a look at the table. As I mentioned earlier, we took three steps to get rid of invalid responses. The usable survey rates of less than 90% can not be a true representation of your school’s student population. In that case, when you interpret your school’s data, contextual information pertaining to your school should be taken into account.
If your school has a response rate and usable survey rate of 90% or more, then the next step is to search for some key data. We recommend you to take a look at the whole report, but this data will help to serve as a guideline for your school’s information. The first is drugs of first use, which are also called gateway drugs. Second is comparisons to the state/national prevalence rates. Third is the trend of prevalence rates. The fourth is age of first time use. And last, is grades where increases/decreases occur.
The gateway drug theory is the hypothesis that the use of less harmful drugs may lead to a future risk of using more dangerous, hard drugs. The gateway drug theory is often attributed to the use of the following drugs: Tobacco, alcohol, and marijuana.
Here are the results from the 2010 IPRC’s ATOD survey. The national data is from the Monitoring the Future study conducted by the University of Michigan in 2009. The national data is available for only 8th, 10th, and 12th grades. Indiana had slightly higher rates than the rest of the nation except for 12th graders’ monthly use of alcohol and marijuana.
In each school corporation’s report, there is a table titled “Significant Differences between Local and State Drug Use Rates.” In this table, positive numbers indicate that your school’s rates are statistically higher than the state rates. On the contrary, negative numbers indicate that your school’s rates are statistically lower than the state rates. Dash marks indicate that there are no statistical differences between your school and the state rates.

So, in a nutshell, negative numbers are a good sign for the school corporation. However, bear in mind that Indiana’s prevalence rates for cigarettes and some other drugs are higher than the national rates.
If a school corporation participated in the ATOD survey for more than two years, the IPRC also provided historical data from the school corporation. Three or more data points can establish a trend.
It has been noted that marijuana use among students has had an upper trend since 2008.
Research has shown that the younger a person is when she or he begins using substances, the more likely the person is to experience substance dependence and abuse. The average age of first use of drugs has ranged consistently from 13 to 14. Reported initiation of the gateway drugs exhibits a nearly consistent pattern: cigarettes first, then alcohol, followed by marijuana. Also, the mean age of first time use of inhalants are low because it is more popular among younger students than older students due to the ease of access. It is very critical to provide prevention interventions before students reach these mean age of first time use.
When planning an intervention program, it is important to note where increases or decreases occur. This is a graph depicting monthly use of marijuana. You can see large increases between 7th and 8th grades, 8th and 9th grades, and 9th and 10th grades. You may provide interventions for 7th, 8th, and 9th graders before these increases occur.
Remember, statistics do not make much sense until you have and can interpret your own data. Here is an example of an exercise you will be required to do after the webinar which demonstrates one way to use your school survey data.
Thank you for participating in this portion of the webinar. For more information, please visit our website. If you have any questions or concerns regarding the IPRC’s ATOD survey, please contact us by email or phone.