

A Comparison of Drug Use Behavior by Selected U.S. and German School Youth

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Abstract

This study examined tobacco, alcohol, marijuana, and other drug use in a convenience sample of tenth-grade students (n=306) in Cologne, Germany. A translated version of the 1999 U.S. Centers for Disease Control and Prevention Youth Risk Behavior Survey (YRBS), modified for cultural relevance through pilot-testing, was used. Comparisons of lifetime and current use of these substances are made for U.S. and Cologne students. Although restricted by sampling limitations in the current study, the German-translated and pilot-tested version will permit future research to make cross-national comparisons using similarly worded items.

Introduction

Drug use by youth in the United States has been documented readily through such studies as the *Monitoring the Future Study* (Johnston, Bachman & O'Malley, 2000) and the *Youth Risk Behavior Surveillance System* (YRBSS) (Centers for Disease Control and Prevention, 1997). In Germany, the monitoring of psychoactive substance use has been somewhat less systematic. Moreover, differences in legal controls from those in the United States (e.g., the legality of alcohol drinking and purchasing at age 16), as well as assimilation of the former East Germany into the Federal Republic of Germany (i.e., the former West Germany) has challenged the attempt of authorities to track psychoactive substance use and abuse by German youth. The opportunity for use of illicit drugs by youth may be enhanced due to introduction of substances from Central Europe and the Middle East.

Purpose of the Study

The purpose of this study was to examine drug use among selected high school students in Cologne, Germany. The city of Cologne was chosen because of the accessibility to students. The results of the German survey are compared to those from a similar survey conducted in the United States. International comparisons of drug use among youth are rare because of different units of measure in each country. Translation and cultural tailoring of a survey employing similar items makes international comparisons of health risk behaviors easier.

Methods

Instrumentation

This survey employed a modified version of the *Youth Risk Behavior Survey* (YRBS) used biennially in the United States over the past decade. Specific items concerning alcohol, tobacco and other drug use were made suitable for German conditions. The YRBS is a nationwide survey in the U.S. conducted by the Centers for Disease Control and Prevention (CDC). The sample for the YRBS includes high school students in grades 9-12 and is representative for high school students throughout the country. Only the U.S. respondents in the tenth-grade are used for comparison to the Cologne sample selected for this study. The YRBS survey has been shown to

have adequate test-retest reliability (Brener, Collins, Kann, et al., 1995) and selected domains have been shown to have construct validity (Gast, Caravella, Sarvela & McDermott, 1995).

For the German version, items from the 1999 YRBS concerning alcohol, tobacco and other drug use were tested for its appropriateness, language and cultural sensitivity. The questions were translated into German and then back-translated into English to obtain a translation as precise as possible. Two experts reviewed the resulting set of items for comprehension, language appropriateness, and cultural relevance. One was a survey development person from Germany's Federal Center for Health Education; the other, a therapist involved in the treatment and rehabilitation of individuals diagnosed with problems of substance abuse. The original 1999 YRBS contains 12 questions about tobacco use, 7 items about alcohol use, 4 questions about marijuana use, and 9 items about other drug use.

A pilot test of the German-translated instrument was carried out and resulted in some of the original items being eliminated.

The pilot-test is one of the most important elements of the evaluation process. It is the point where evaluators can detect many of the flaws in the data collection instruments, curriculum materials, or data collection and analysis procedures before they introduce the study or program on a larger scale (Sarvela & McDermott, 1993, p.175).

The final instrument contained 8 questions related to tobacco use, 5 concerning use of alcohol, 4 pertaining to marijuana and 7 questions about other drug use. All items related to smokeless tobacco use (chewing tobacco or snuff) were removed since the pilot-test showed low lifetime-prevalence.

Sample

The questionnaire was administered to a convenience sample of 306 tenth-graders in three public schools (n=76+110+120) in the city of Cologne. The survey was approved by the principal of each school, and with the help of teachers, the survey was carried out. Anonymity of survey respondents and confidentiality of schools was

guaranteed. Oral instructions for the completion of the survey were provided. No students refused to participate.

Data Analysis

Data analysis was conducted using SPSS. Cross-tabulations were performed by gender. The results of each item were examined with comparable items on the 1997 YRBS.

Results

Among respondents, 51% were female and 49% were male. Respondent ages ranged from 15 to 18 years with a mean of 16 years. Moreover, 56% of the respondents were native ethnic-Germans, 17% were native Germans of other ethnic origins, and 27% were of foreign origin.

Tobacco Use

Cigarette smoking by tenth-graders in Cologne and the U.S. is reported in Table 1. Compared to U.S. results, cigarette use among tenth-grade students in Cologne is higher, especially with respect to current cigarette use, frequent cigarette use and current use on school property. The higher rate of cigarette use in the Cologne sample probably can be explained, in part, by the relatively easy access to

tobacco products in Germany. In Germany, cigarettes may be purchased legally at age 16 (unlike the U.S. where the legal age for purchase is 18). Moreover, it is possible for German students to buy cigarettes in convenience stores, supermarkets, tobacco stores, or at vending machines without being asked to show proof of age. Vending machines are present on street corners and in numerous other locations where cigarettes can be purchased for 5 DM (a little more than \$2 given the October 2000 currency exchange rate). Consequently, German students can buy cigarettes without any problems before the permitted age of 16. In the U.S., regulations concerning tobacco use are stricter, especially smoking in public buildings (Apel, Klein, McDermott & Westhoff, 1997). Stores in the U.S. that dispense tobacco products are more likely to ask for proof of age at the time youth purchase tobacco products. In general, smoking in Germany is socially more accepted than in the United States. Anti-smoking campaigns and laws to restrict smoking are much more common in the U.S. than smoking in Germany (Apel, et al., 1997).

Table 1. Cigarette use by 10th-grade students in Cologne and the U.S.

Variable	Girls in Cologne in %	Girls in the US in %	Boys in Cologne in %	Boys in the US in %
Lifetime cigarette use (ever tried cigarette smoking)	75.0%	68.9%	76.3%	70.8%
Smoked a whole cigarette before age 13	27.9%	23.8%	32.2%	30.5%
Current cigarette use (smoked on ≥ 1 of the 30 days preceding the survey)	52.5%	35.1%	39.0%	35.6%
Frequent cigarette use (smoked on ≥ 20 of the 30 days preceding the survey)	39.3%	14.1%	28.8%	1.7%
Cigarette use on school property (on ≥ 1 of the 30 days preceding the survey)	42.6%	13.2%	27.1%	15.5%

Furthermore, gender differences in tobacco use among students in Cologne become evident. Girls showed higher rates regarding current and frequent cigarette use and current use on school property. This result supports a belief that the rate of young female smokers in Germany may be increasing.

Alcohol Use

A comparison of alcohol use by Cologne and U.S. youth is made in Table 2. The age of the drinking onset is about the same in Cologne and the United States. Tenth-graders in Cologne report a higher lifetime rate of trying alcohol, current use, and frequent use than tenth graders in the U.S.

However, compared to students in Cologne, U.S. students report more riding in a car with a driver who has been drinking alcohol. To interpret the different risk behaviors concerning alcohol in Germany and the U.S., cultural differences in traditions must be taken into account. In Germany, it is socially acceptable for youth to drink alcoholic beverages at a meal with members of the family. German youth try their first drink of alcohol early in life, about 90% before the age of 13 (in Cologne). First use of alcohol usually takes place in the family. German youth may purchase alcohol (usually beer) legally at age 16.

Teenagers in the U.S. may try their first drink of alcohol within their peer group. As with access to cigarettes, access to alcohol before the allowed age of 21 is disallowed. Consequently, it is noteworthy that the age of the drinking onset in the U.S. is below 13 years of age for 27.5% of females and 35.7% of males. Also, 47.2% of U.S. tenth-graders (45.3% females and 48.7% males) report current alcohol use, although they are not permitted legal access to alcohol drink at age 16 or 17. These results suggest that laws and restrictions are neither observed nor effectively enforced, because the prohibition of alcohol does not prevent teens from drinking alcohol. The high rate of U.S. tenth-graders who rode in a car with a driver who had been drinking

alcohol, is explained, in part, by the absence of convenient, safe, and affordable public transportation system in many U.S. communities. In contrast, Germans enjoy widespread access to public transportation, thus reducing the exposure of drinkers and drivers in an important way. In Cologne, there is a noteworthy gender difference in binge-drinking. Overall, 40.7% of boys and 27.9% of girls indicated that they had consumed five or more drinks on at least one occasion during the 30 days preceding the study.

Table 2. Alcohol use by 10th-grade students in Cologne and the U.S.

<i>Variable</i>	<i>Girls in Cologne in %</i>	<i>Girls in the US in %</i>	<i>Boys in Cologne in %</i>	<i>Boys in the US in %</i>
Lifetime alcohol use (ever had at least one drink of alcohol)	88.5%	76.9%	93.2%	77.9%
Drank alcohol before age 13 (other than a few sips)	29.5%	27.5%	28.8%	35.7%
Current alcohol use (drank alcohol on ≥ 1 of the 30 days preceding the survey)	55.7%	45.3%	57.6%	48.7%
Episodic heavy drinking (5 or more drinks of alcohol on at least one occasion on ≥ 1 of the 30 days preceding the survey)	27.9%	26.3%	40.7%	32.7%
Rode with a driver who had been drinking alcohol (≥ 1 times during the 30 days preceding the study)	14.8%	28.2%	15.3%	35.6%

Marijuana Use

The data in Table 3 compare marijuana use by selected Cologne tenth-graders and their U.S. counterparts. One can identify differences between girls and boys in Cologne with respect to reported marijuana use. About 13% more boys than girls reported ever having used marijuana; the proportion of boys reporting recent (i.e., current) use is more than twice that of girls, and more boys than girls report marijuana use on school property. U.S. results reveal that males report higher rates of marijuana use than females (CDC, 1997). In comparing the results from Cologne and the U.S. one may notice that Cologne males report more current marijuana use than U.S. males (37.3% versus 28.5%). However, among female students, there was an opposite effect with respect to lifetime use, with U.S. females more likely to report current use (43.3% versus 32.8%). Students comprising the U.S. sample report first use of marijuana at an earlier age (before age 13) than in the Cologne sample: 8.3% of U.S. girls versus 1.6% of girls in

the Cologne sample; 12.2% of U.S. boys versus 5.1% of boys in the Cologne sample.

Other Drug Use

Use of other drugs is compared in Table 4. Among Cologne youth, boys are more likely than girls to use illegal drugs such as cocaine, amphetamines, steroids, ecstasy and heroin. Nearly twice the proportion of males (22.0%) compared to females (11.5%) reports that illegal drugs were offered, sold or given to them on school property in the past 12 months. Among U.S. youth, use of cocaine and illegal steroids is lower than in Cologne. However, the percentage of U.S. students, who

report having ever inhaled or sniffed intoxicants in their life, is higher (girls: 16.1%, boys: 16.9%) than in the Cologne sample (girls: 14.8%, boys: 8.5%). It should be noted that the proportion of U.S. youth reporting the offer, sale, or gift of illegal drugs on school property in the past 12 months is about twice that of Cologne youth reporting this phenomenon (among both boys and girls). Overall, it is accurate to say that reported use rates for the drugs shown in Table 4 suggest that both the U.S. and Cologne have important youth substance use issues to address.

Table 3. Marijuana use by 10th-grade students in Cologne and the U.S.

<i>Variable</i>	Girls in Cologne in %	Girls in the US in %	Boys in Cologne in %	Boys in the US in %
Lifetime marijuana use (ever used marijuana)	32.8%	43.3%	45.8%	48.1%
Tried marijuana before age 13	1.6%	8.3%	5.1%	12.2%
Current marijuana use (used marijuana ≥ 1 times during 30 days preceding the study)	18.0%	20.9%	37.3%	28.5%
Marijuana use on school property (used marijuana on ≥ 1 of the 30 days preceding the survey)	1.6%	4.2%	16.9%	8.2%

Table 4. Other drug use by 10th-grade students in Cologne and the U.S.

<i>Variable</i>	Girls in Cologne in %	Girls in the US in %	Boys in Cologne in %	Boys in the US in %
Lifetime use of:				
Cocaine	9.8%	6.3%	11.9%	8.7%
Illegal steroids	3.3%	1.7%	3.4%	4.1%
Sniffed or inhaled intoxicating substances	14.8%	16.1%	8.5%	16.9%
Amphetamines	6.6%	<i>Other illegal drugs</i> 15.1%	13.6%	<i>Other illegal drugs</i> 17.2%
Ecstasy	4.9%		10.0%	
Heroin	1.6%		3.4%	
Illegal drugs on school property*	11.5%	25.3%	22.0%	40.0%

*During the past 12 months, has anyone offered, sold, or given you an illegal drug on school property ?

Discussion

Regarding high rates of drug use among youth in the US and Germany, successful implementation of primary drug prevention programs will be necessary. The format of these programs is open to some debate. In the past 25 years, drug prevention programs have been carried out in communities and schools in the U.S. and have shown some favorable results in preventing or delaying drug use among youth (Bosworth, 1997; Dusenbury & Falco, 1997). Newly developed U.S. programs combine school-based prevention with parent skills training, media campaigns, community organization efforts, and health policy interventions (Kaltreider & Pierre, 1995). Not all programs have been effective or have been evaluated sufficiently.

Widespread implementation of drug use prevention programs has been rare in Germany. Only a few states in Germany implement such programs in schools and communities. U.S. programs are not totally transferable to Germany because of the different and diverse institutional conditions of the two countries. Just regarding the system and structure of schools in these two countries, differences become evident. Consequently, it is necessary to plan, implement and evaluate primary drug prevention programs that refer to the German system. However, effective programs from the U.S. may be used as a starting point, and modified for German conditions. It will be necessary in the future to adapt prevention programs from some foreign countries, and to make them suitable for German conditions. In addition, it also will be necessary for Germans to identify mechanisms for preventing drug problems among youth. The Federal Center for Health Education (1998a; 1998b) in Germany has addressed this issue to some extent, but more work needs to be done.

Before planning and implementing drug prevention programs in Germany, the target audience must be segmented. Perhaps more now than at any time in its past, Germany is a diverse population of more than 80 million inhabitants. Prevention programs and strategies should be sensitive to the ethnic and cultural backgrounds of the children and adolescents they target (Dusenbury & Falco, 1997). Regarding drugs, the extent of drug consumption and the motives for and relevant precursors of drug use should be determined. With this information one is able to decide which program would be effective and useful for the target group.

Results of this study have shown that drug use is different among males and females. The development of gender-specific programs to prevent drug use and abuse must, therefore, be explored.

With studies similar to this one, additional surveillance of substance use needs to be performed throughout Germany. The long-term goal is to learn as much as possible about drug consumption among adolescents in Germany. This knowledge will make it possible to compare drug consumption in Germany to other nations of the European Union, the U.S.,

and other countries, and ultimately, to implement responsive drug prevention and intervention programs in Germany.

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