

Chapter #12

THE EFFECTIVENESS OF DRUG USE PREVENTION PROGRAMS ON SUBSTANCE USE AMONG SLOVAK SCHOOLCHILDREN

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ABSTRACT

The objective of the study is to examine the long-term effectiveness of the school-based drug prevention programs Unplugged and Unplugged2 supplemented with n-Prevention booster sessions on reported alcohol use(AU), smoking and the cumulative index(CI) of AU and smoking. In Unplugged, a sample of 744(M=12.5;58.72% girls) was collected before program implementation(T1) and 12months later(T3). In Unplugged2, a sample of 408(M=14.48;51.96% girls) was collected before program implementation(T1), immediately after implementation(T2) and 12months later(T3). In Unplugged, the sample was divided into control and experimental groups while Unplugged2 was split into control, experimental and experimental groups with n-Prevention, a pre-test or without a pre-test. Binary logistic regressions were used to analyze the data at every measurement point. There was no significant effect of Unplugged and Unplugged2 with a pre-test. However, gender was significantly associated with smoking and girls were more likely to report smoking than boys. Unplugged2 without a pre-test was significantly associated with AU and CI at T3. The experimental and experimental groups with n-Prevention were less likely to report AU. The experimental group with n-Prevention was less likely to report AU and/or smoke. There was no significant moderation effect. The results show the effectiveness of Unplugged2 without a pre-test design, especially with booster sessions.

Keywords: alcohol use, smoking, drug prevention, schoolchildren.

1. INTRODUCTION

Early adolescence is a crucial period for using drugs which can continue into adulthood and dramatically increase lifelong substance use (Jordan & Andersen, 2017). Alcohol is the most commonly used substance among adolescents. It is often referred to as problem drinking in the research and includes the frequent consumption of alcohol as well as episodic, higher quantity consumption. This can cause adolescents difficulties such as hangovers, missing school, causing damage or being arrested for anti-social behaviour. Alcohol use during adolescence is associated with the increased likelihood of engaging in other risky behaviours including the use of other illicit drugs and risky sexual behaviour (Hutchinson, Teague, Champion, Essau, & Newton, 2020). Across Europe, the majority of students report having consumed alcohol at least once in their lifetime. In Slovakia, 54% of students reported consuming alcohol during the past 30 days.

In addition, 46,6 % of the Slovak students who reported drinking in the past 30 days had engaged in heavy episodic drinking while 14% of students reported having been intoxicated in the past 30 days. (ESPAD, 2019). Moreover, schoolchildren who start drinking before the age of 14 are four times more likely to become alcohol dependent at some point in their life compared to those who first consume alcohol at the age of 20 or older (Agabio et. al., 2015). According Gabrhelík et. al. (2012a) smoking often starts in adolescence and negatively influences lung function including respiration, decreases physical fitness and increases the risk of developing cardiovascular diseases later in life. In Slovakia, 58% had ever smoked cigarettes at least once in their lives and 29% reported having smoked in the past 30 days. (ESPAD, 2019).

Despite primary prevention generally being considered one of the most appropriate strategies, Faggiano, Richardson, Bohrn, Galanti, and EU-Dap Study Group (2007) have pointed out that empirical evidence has shown the insufficient effectiveness of school programs. Schools are the ideal location for promoting health services among young people. School-based preventive programs comprise educational programs, psychosocial programs, or a combination of both, with the objective of reducing drug consumption. Psychosocial interventions are aimed at developing the skills to reduce this risk whereas educational interventions aim increase awareness of the potential dangers of using drugs. Furthermore, Unplugged program appears to be the prevention project with the best evidence of effectiveness in European studies (Agabio et. al., 2015). In Slovakia, evaluating the effectiveness of drug substance prevention programs and data-based drug use prevention among schoolchildren is still lacking (Gabrhelík et al., 2014). However, the implementation of the program Unplugged amongst Slovak schoolchildren is the beginning of this (Orosová, Gajdošová, Bačíková-Šléšková, Benka, & Bavoľár, 2020).

Gender differences have been found to be important factors in the effectiveness of school-based drug use prevention programs. This is a factor that could cast light on the psychological mechanism of the program effect (Vigna-Taglianti et al., 2009). Alcohol use among boys is generally higher than that among girls. However, gender differences in alcohol use rates appear to be diminishing, particularly in relation to weekly drinking and intoxication on more than one occasion (WHO/HBSC, 2016). According ESPAD (2019) the average prevalence of smoking is also higher among boys than girls.

Thus, the current study aims to explore the effectiveness of prevention programs over long-term periods.

2. OBJECTIVES

The objective of the study is to examine the long-term effectiveness of the school-based drug prevention programs Unplugged and Unplugged2 supplemented with n-Prevention booster sessions on reported alcohol use, reported smoking and the cumulative index(CI) of reported alcohol use and reported smoking in the past 30 days among Slovak schoolchildren.

3. DESIGN

The universal substance prevention program Unplugged is part of the EU-DAP “The European Drug Addiction Prevention Trial” project. Unplugged is designed for schoolchildren aged 12 to 14 and consists of 12 lessons. The program is based on two principles. The first principle is the Comprehensive social influence model where the purpose is to build specific skills to manage social impact and deconstruct normative beliefs

(Kreft et al., 2009). The second principle is the Knowledge-attitude-behaviour model which is focused on providing information about drugs and their consequences. A combination of these two principles has an impact on the use of alcohol, tobacco and illicit drugs (Širůčková et al., 2012). The goal of Unplugged is to reduce the number of schoolchildren who start using addictive substances and delay the first contact with drugs as well as delaying the transition from experimentation to regular use (Charvát, Jurystová, & Gabrhelík, 2012). In 2013/2014, Unplugged was implemented over 12 consecutive weeks in Slovak primary schools. The program was carried out by teachers, special educators and psychologists who had undergone a training course. In 2017/2018, Unplugged 2 (a follow-up to Unplugged) with a Solomon design was implemented by each school over 6 months. In addition, Unplugged2 was extended by the follow-up program “n-Prevention”. This is a series of so-called “booster sessions”, which aim to contribute to the effectiveness of the program. They consist of a series of 4 lectures focused on social norms and normative beliefs, refusal skills, differences between genders and the current neurological knowledge that provides information on the influence of drug use on brain functioning (Gabrhelík et. al., 2014). This study has an experimental design.

Table 1.
Group design of Unplugged and Solomon four design Unplugged 2with n-Prevention.

					Data collected:
Experimental group (EG) in Unplugged	Pre-test	Unplugged	-	Post-test	before program implementation(T1), 12months later(T3)
Control group (CG) in Unplugged	Pre-test	-	-	Post-test	before program implementation(T1), 12months later(T3)
Experimental group 2 (EG2) in Unplugged 2	Pre-test	Unplugged2	-	Post-test	before program implementation(T1), 12months later(T3)
Experimental group (EG*2) in Unplugged 2	Pre-test	Unplugged2	n-Prevention	Post-test	before program implementation(T1), 12months later(T3)
Control group (CG2) in Unplugged 2	Pre-test	-	-	Post-test	before program implementation(T1), 12months later(T3)
Experimental group (EG3) in Unplugged 2	-	Unplugged2	-	Post-test	immediately after program implementation(T2), 12months later(T3)
Experimental group (EG*3) in Unplugged 2	-	Unplugged2	n-Prevention	Post-test	immediately after program implementation(T2), 12months later(T3)
Control group (CG3) in Unplugged 2	-	-	-	Post-test	immediately after program implementation(T2), 2months later(T3)

4. METHODS

4.1. Sample and procedure

In Unplugged, the sample consisted of 744 (M = 12.5 years; 58% girls) Slovak schoolchildren. In Unplugged2 the sample consisted of 408 (M = 14.48 years; 51,96% girls) Slovak schoolchildren. For more details about the data collected see Table 1.

4.2. Measures

The schoolchildren were asked to fill in a paper version of an anonymous questionnaire administrated in class. Reported alcohol use and reported smoking in the past 30 days were explored by the questions: “On how many occasions (if any) have you had an alcoholic beverage to drink during the last 30 days?”, and “On how many occasions (if any) have you smoked a cigarette during the last 30 days?” The possible answers were: 0, 1-2, 3-5, 6-9, 10-19, 20-39, 40 or more. In Unplugged 2, alcohol and smoking were also explored by the questions: “On how many occasions (if any) have you had an alcoholic beverage to drink during the last 30 days?” and “On how many occasions (if any) have you smoked a cigarette during the last 30 days?” The possible answers were: 0, 1, 2-4, 5 or more. Reported alcohol use, reported smoking and the cumulative index of reported alcohol use and smoking was dichotomized: 0-not used, 1- alcohol use, smoking or both.

4.3. Statistical analyses

Binary logistic regression was used to analyze the data at every measurement point. Reported alcohol use, reported smoking and the cumulative index of reported alcohol use and reported smoking in the past 30 days served as the dependent variable while participation in Unplugged or Unplugged2 served as the independent variable. The effect of gender was analyzed as an independent variable and the moderation effect of gender was also explored. Reported alcohol use, reported smoking and the cumulative index of reported alcohol use and reported smoking at T1 in Unplugged and Unplugged 2 with a pre-test, and reported alcohol use, reported smoking and the cumulative index of reported alcohol use and smoking at T2 in Unplugged 2 without a pre-test were used as the control variables. A Chi-square test was carried out to assess the gender and group differences in all variables. Data was analyzed with SPSS version 23.

5. RESULTS

The descriptive analyses for the experimental (EG) and the control group (CG) at T1 and at T3 and gender differences at T3 in Unplugged are presented in Tables 2 and 3. Generally, the number of alcohol users was higher in comparison to smokers in the experimental (EG) as well as in the control groups (CG). There were no significant differences between boys and girls in reported alcohol use, smoking and the cumulative index of reported alcohol use and smoking.

The Effectiveness of Drug Use Prevention Programs on Substance Use among Slovak Schoolchildren

Table 2.
Differences between the control group and the experimental group in alcohol use, smoking and the cumulative index of alcohol use and smoking during the last 30 days at T1 and at T3 in Unplugged.

		CG		EG		χ^2
		N	%	N	%	
AU at T1	Not used	554	90.7	512	85.8	6.549
	Used	57	9.3	85	14.2	
Smoking at T1	Not used	590	97.0	567	98.3	1.438
	Used	18	3.0	10	1.7	
CI at T1	Not used	534	90.4	485	86.6	3.618
	Used	57	9.6	75	13.4	
AU at T3	Not used	363	84.2	342	82.0	0.588
	Used	68	15.8	75	18.0	
Smoking at T3	Not used	388	90.7	381	91.1	0.017
	Used	40	9.3	37	8.9	
CI at T3	Not used	337	80.2	321	78.3	0.478
	Used	83	19.8	89	21.7	

Note: EG= experimental group; CG= control group; AU= alcohol use, CI = cumulative index of alcohol use and smoking

Table 3.
Differences between boys and the girls in alcohol use, smoking and the cumulative index of alcohol use and smoking during the last 30 days at T3 in Unplugged.

		CG				χ^2	EG				χ^2
		Boys		Girls			Boys		Girls		
		N	%	N	%		N	%	N	%	
AU	Not used	139	79.0	198	81.1	0.182	149	82.3	19	81.8	0.00
	Used	37	21.0	46	18.9		32	17.7	43	18.2	
Smoking	Not used	167	91.3	221	90.2	0.041	160	89.4	22	92.5	0.85
	Used	16	8.7	24	9.8		19	10.6	18	7.5	
CI	Not used	373	77.6	385	80.5	0.927	134	76.1	18	79.9	0.63
	Used	79	22.4	83	19.5		42	23.9	47	20.1	

Note: CG= control group; EG= experimental group; AU= alcohol use, CI = cumulative index of alcohol use and smoking

In Unplugged2, the number of alcohol users was also higher in comparison to smokers in the control group (CG2), the experimental group (EG2), the experimental group with n-Prevention (EG*2) at T1 and at T3 in Unplugged 2 with a pre-test, as well as in the control group (CG3), the experimental group (EG3) and in the experimental group with n-Prevention (EG*3) at T2 and T3 in Unplugged without a pre-test. For more details see Tables 4 and 5. As shown in Table 5, a chi-square test for independence indicated a significant association between the control (CG3), experimental (EG3) and experimental group with n-Prevention (EG*3) in Unplugged 2 without a pre-test and alcohol use, $\chi^2 (2, n = 506) = 7.87, p = .02, \text{Cramer's } V = .02$. The schoolchildren in the experimental (30.5%) and experimental group with n-Prevention (22%) were less likely to report alcohol use in comparison to the control group (35.2%).

Table 4.

Differences between the control group, the experimental group and the experimental group with n-Prevention in alcohol use, smoking and the cumulative index of alcohol use and smoking during the last 30 days at T1 and at T3 in Unplugged 2 with a pre-test.

		CG2		EG2		EG*2		χ^2
		N	%	N	%	N	%	
AU at T1	Not used	210	83.0	128	80.0	115	74.2	4.629
	Used	43	17.0	32	20.0	40	25.8	
Smoking at T1	Not used	248	96.9	151	93.8	145	92.9	3.726
	Used	8	3.1	10	6.2	11	7.1	
CI at T1	Not used	204	81.0	124	77.5	112	72.3	4.175
	Used	48	19.0	36	22.5	43	27.7	
AU at T3	Not used	169	69.8	100	68.5	115	72.8	0.721
	Used	73	30.2	46	31.5	43	27.2	
Smoking at T3	Not used	198	81.5	124	84.9	126	78.8	1.947
	Used	45	18.5	22	15.1	34	21.3	
CI at T3	Not used	156	64.5	93	63.7	105	66.5	0.279
	Used	86	35.5	53	21.7	53	33.5	

Note: EG2= experimental group; EG*2= experimental group with n-Prevention; CG2= control group; AU= alcohol use, CI= cumulative index of alcohol use and smoking

Table 5.
Differences between the control group, the experimental group and the experimental group with n-Prevention in alcohol use, smoking and the cumulative index of alcohol use and smoking during the last 30 days at T2 and at T3 in Unplugged 2 without a pre-test.

		CG3		EG3		EG*3		χ^2
		N	%	N	%	N	%	
AU at T2	Not used	178	79.5	112	77.2	128	72.3	2.866
	Used	46	20.5	33	22.8	49	27.7	
Smoking at T2	Not used	203	89.8	131	89.7	157	88.2	0.316
	Used	23	10.2	15	10.3	21	11.8	
CI at T2	Not used	174	77.7	103	71.0	123	69.9	3.628
	Used	50	22.3	42	29.0	53	30.1	
AU at T3	Not used	136	64.8	89	69.5	131	78.0	7.870*
	Used	74	35.2	39	30.5	37	22.0	
Smoking at T3	Not used	179	84.8	102	79.1	145	86.3	3.079
	Used	32	15.2	27	20.9	23	13.7	
CI at T3	Not used	130	61.9	80	62.5	122	73.1	5.935
	Used	80	38.1	48	37.5	45	26.9	

Note: EG3= experimental group; EG*3= experimental group with n-Prevention; CG3= control group; AU= alcohol use, CI= cumulative index of alcohol use and smoking, *= p<0.05

There were no significant differences found between the boys and girls in reported alcohol use, smoking and the cumulative index of reported alcohol use and smoking in Unplugged 2 with a pre-test. However, a chi-square test for independence (with Yates Continuity Correction) indicated a significant association in Unplugged 2 without a pre-test between gender and smoking in the control group (CG3), $\chi^2 (1, n= 210) = 4.97, p = .03, \phi = .17$. Girls were more likely to report smoking (21.4%) compared to boys (9.3%). This can be seen in Table 7.

Table 6.
Differences between the boys and the girls in alcohol use, smoking and the cumulative index of alcohol use and smoking during the last 30 days at T3 in Unplugged 2 with a pre-test.

		CG2				χ^2
		Boys		Girls		
		N	%	N	%	
AU	Not used	88	68.8	79	70.5	0.025
	Used	40	31.3	33	29.5	
Smoking	Not used	107	82.9	89	79.5	0.277
	Used	22	17.1	23	20.5	
CI	Not used	81	63.3	73	65.2	0.029
	Used	47	36.7	39	34.8	
		EG2				χ^2
		Boys		Girls		
		N	%	N	%	
AU	Not used	47	61.0	52	76.5	3.290
	Used	30	39.0	16	23.5	
Smoking	Not used	65	84.4	58	85.3	0.000
	Used	12	15.6	10	14.7	
CI	Not used	45	58.4	47	69.1	1.344
	Used	32	41.6	21	30.9	
		EG*2				χ^2
		Boys		Girls		
		N	%	N	%	
AU	Not used	58	84.4	57	70.4	0.436
	Used	18	15.6	24	20.6	
Smoking	Not used	65	91.3	61	74.4	1.855
	Used	12	8.7	21	25.6	
CI	Not used	56	73.7	49	60.5	2.513
	Used	20	26.3	32	39.5	

Note: CG2= control group; EG2= experimental group; EG*2= experimental group with n-Prevention; AU= alcohol use, CI = cumulative index of alcohol use and smoking

Table 7.
Differences between the boys and the girls in alcohol use, smoking and the cumulative index of alcohol use and smoking during the last 30 days at T3 in Unplugged 2 without a pre-test.

		CG3				χ^2
		Boys		Girls		
		N	%	N	%	
AU	Not used	67	62.6	68	66.7	0.218
	Used	40	37.4	34	33.3	
Smoking	Not used	97	90.7	81	78.6	4.971*
	Used	10	9.3	22	21.4	
CI	Not used	65	60.7	64	62.7	0.024
	Used	42	39.3	38	37.3	
		EG3				χ^2
		Boys		Girls		
		N	%	N	%	
AU	Not used	38	66.7	51	72.9	0.317
	Used	19	33.3	19	27.1	
Smoking	Not used	50	87.7	51	72.9	3.398
	Used	7	12.3	19	27.1	
CI	Not used	36	63.2	44	62.9	0.000
	Used	21	36.8	26	37.1	
		EG*3				χ^2
		Boys		Girls		
		N	%	N	%	
AU	Not used	64	80.0	65	76.5	0.130
	Used	16	20.0	20	23.5	
Smoking	Not used	70	86.4	72	85.7	0.000
	Used	11	13.6	12	14.3	
CI	Not used	61	76.3	59	70.2	0.479
	Used	19	23.7	25	29.8	

Note: CG3= control group; EG3= experimental group; EG*3= experimental group with n-Prevention; AU= alcohol use, CI = cumulative index of alcohol use and smoking, *= p<0.05

The binary logistic regression revealed that there was no significant effect of either Unplugged or gender on reported alcohol use, reported smoking and the cumulative index of reported alcohol use and reported smoking at T3. There was no significant moderation effect of gender in any of the measurements.

There was also no significant effect of Unplugged 2 with a pre-test, nor moderation effect of gender. However, there was a significant effect of gender on reported smoking at T3. Girls were more likely to report smoking compared to boys. This regression model explained 5.5% of the variance and correctly classified 83.3% of cases.

Unplugged 2 without a pre-test was significantly associated with alcohol use at T3 in both experimental groups (EG3, EG*3). Schoolchildren in the experimental group (EG3) and in the experimental group with n-Prevention (EG*3) were less likely to report alcohol use compared to the control group (CG3). This regression model explained 16.9% of the variance and correctly classified 77.1% of the cases. Unplugged 2 without a pre-test was also significantly associated with the cumulative index of reported alcohol use and reported smoking at T3 in the experimental group with n-Prevention (EG*3). Schoolchildren in the experimental group with n-Prevention (EG*3) were less likely to report alcohol use and/or smoking. This regression model explained 16.9% of the variance and correctly classified 75% of cases. There was no significant effect of gender and no moderation effect of gender.

All significant findings are presented in Table 8.

Table 8.
Regression models for smoking, alcohol use and the cumulative index of alcohol use and smoking among schoolchildren in Unplugged 2.

T3 in Unplugged 2 with a pre-test			
	Smoking		
	OR	95% C. I	
Gender´	0.55*	0.33	0.93
EG2´´	0.67	0.35	1.28
EG*2´´	1.06	0.59	1.91
Smoking T1	0.13**	0.05	0.33
T3 in Unplugged 2 without a pre-test			
	Alcohol use		
	OR	95% C. I	
Gender´	0.97	0.60	1.56
EG3´´´	0.42*	0.23	0.79
EG*3´´´	0.35**	0.20	0.62
AU T2	0.12**	0.07	0.21
	Cumulative index of alcohol use and smoking		
	OR	95% C. I	
Gender´	0.85	0.54	1.35
EG3´´´	0.58	0.32	1.03
EG*3´´´	0.41**	0.23	0.70
CI T2	0.13**	0.08	0.21

Note: ´=girls as a reference group; ´´=control group 2 in Unplugged 2 with a pre-test as a reference group; ´´´= control group 3 in Unplugged 2 without a pre-test as a reference group; EG2= experimental group in Unplugged 2 with a pre-test; EG*2= experimental group with n-Prevention in Unplugged 2 with a pre-test; EG3=experimental group in Unplugged 2 without a pre-test; EG*3=experimental group with n-Prevention in Unplugged 2 without a pre-test;**=p<0.001; *p<0.05

6. CONCLUSION/DISCUSSION

The results have shown that the long-term effectiveness of the Unplugged program cannot be confirmed. This is the same as Orosová et. al. (2020) found regarding alcohol consumption among schoolchildren. Gabrhelík, et. al. (2012b) also found the same results regarding alcohol use and tobacco use among schoolchildren. Giannotta, Vigna-Taglianti, Galanti, Scatigna, and Faggiano (2014) have also stated that the effect of taking part in Unplugged is generally weak.

The effect of Unplugged 2 with a pre-test was also not confirmed. However, the results have shown a significant effect of gender on reported smoking. Girls are more likely to report smoking in comparison to boys. ESPAD (2019) found that the largest gender differences where girls reported higher rates of smoking than boys were in Slovakia and Bulgaria. Rodríguez-Planas and Sanz-de-Galdeano (2019) have stated that the female-to-male smoking prevalence ratio varies widely across countries. In particular, women smoke as much as men in high-income countries. Likewise, gender-equal societies increases girls' smoking habits.

The results have shown the long-term effectiveness of Unplugged2 without a pre-test on reported alcohol use. The children in the experimental group and the experimental group with n-Prevention were less likely to report alcohol use. This has also been found by Štefaňáková, Kulanová-Dobrowolska, Orosová, and Abrinková (2019). According to Caria, Faggiano, Bellocco, Galanti, and EU-Dap Study Group (2011) adolescents who took part in this program, compared to adolescents in the control group, were far less likely to report alcohol use problems.

The results have shown the significant effect of Unplugged 2 without a pre-test in the experimental group with n-Prevention on the cumulative index of reported alcohol use and reported smoking. The children in the experimental group with n-Prevention were less likely to report alcohol use and/or smoking. These findings highlight the importance of booster sessions in enhancing the effectiveness of school-based preventive programs (Botvin & Griffin, 2003; Skara & Sussman, 2003).

In conclusion, the results show the long-term effectiveness of Unplugged 2 without a pre-test design on reported alcohol use in the experimental group and experimental group with n-Prevention, as well as on the cumulative index of reported alcohol use and reported smoking in the experimental group with n-Prevention. On the other hand, the effectiveness of the programs Unplugged and Unplugged 2, both with a pre-test design, has not been confirmed.

From the social-developmental perspective, experimentation with substance use such as alcohol use and smoking can be considered normative behavior due to it being a period of exploration, identity seeking as well as a part of the transition to adulthood which can help to achieve valued social goals. However, recognizing the developmental nature of substance use during adolescence may be key to distinguishing factors that predict socially driven as well as relatively transient use during adolescence from factors that predict long-term problems with substance abuse that extend well into adulthood (Allen, Loeb, Narr, & Costello, 2020). According to Mastern (2007) this view is especially held in societies where alcohol consumption is widely accepted in adulthood and therefore developing an appropriate relationship with alcohol is perceived as a developmental task of transitioning to adulthood. However, the earlier the onset of substance use, the higher the probability of future short-term consequences such as mental and behavior problems. This can lead to a snowball effect where the substance use affects one aspect of development leading to other problems in development trajectory. There are many factors which contribute to the use of alcohol among adolescents. Socioeconomic status is one which

plays a particularly important part. Previous findings have suggested that pupils with low educational aspirations should be the target population for interventions aimed at reducing alcohol use among adolescents and that more actions regarding the reduction of and abstinence from alcohol should be encouraged in educational institutions (Liu et al., 2016).

In the current study, a Solomon four group design was used. When the results were processed there was a problem of statistical data processing due to the fact that the number of substance users is much lower among schoolchildren in comparison with the number of non-users. As Botvin and Griffin (2006) have mentioned, it is difficult to assess the impact of an intervention on behavioural outcomes among schoolchildren, because the use is very low, especially smoking. Another limitation of the research also lies in the fact that the data were obtained directly from schoolchildren through questionnaires. It is only their statements about alcohol use and smoking which can be relied on so there is a certain likelihood of giving socially acceptable answers. In conclusion, further studies looking at the effectiveness of preventive programs should include methods for detecting fidelity components.

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The Effectiveness of Drug Use Prevention Programs on Substance Use among Slovak Schoolchildren

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