

## EFFECTIVENESS OF THE PROGRAMS UNPLUGGED AND UNPLUGGED 2 ON ALCOHOL USE AND SMOKING AMONG SCHOOLCHILDREN

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### Abstract

**Objectives:** The aim of the study is to examine the long-term effectiveness of the school-based drug prevention programs Unplugged and Unplugged2 using a Solomon design and supplemented with n-Prevention booster sessions on the cumulative index (CI) of reported alcohol use (AU) and smoking.

**Methods:** In 2013/2014, Unplugged was implemented during 12 consecutive weeks in Slovak primary schools. A sample of 744(M=12.5; 58.72%girls) was collected before program implementation(T1) and 12months later(T3). In 2017/2018, Unplugged2 was implemented by each school over 6months. A sample of 408(M=14.48; 51.96%girls) was collected before program implementation (T1), immediately after implementation(T2) and 12months later(T3). Participation in Unplugged was divided into control and experimental groups and Unplugged2 into control, experimental and experimental groups with n-Prevention, a pre-test and post-test or with post-test only. CI in the past 30 days was dichotomized (0-not used,1-AU, smoking or both). Binary logistic regressions were used to analyze the data at every measurement point. The moderation effect of gender was examined. The CI at T1 in Unplugged and Unplugged2 with a pre-test and post-test, and CI at T2 in Unplugged2 with a post-test were used as the control variables.

**Results:** There was no significant effect of Unplugged and Unplugged2 with the pre-test and post-test. Unplugged2 with a post-test was significantly associated with CI at T3. The experimental group with n-Prevention was less likely to use alcohol and/or smoke. There was no significant effect or moderation effect of gender.

**Conclusions:** The results show the long-term effectiveness of a preventive program is more pronounced with booster sessions, specifically with the post-test design.

**Keywords:** *Alcohol use, smoking, drug prevention, schoolchildren.*

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### 1. Introduction

Early adolescence is a crucial period for using drugs that can continue into adulthood and dramatically increase lifelong substance use (Jordan & Andersen, 2017). Despite primary prevention generally being considered one of the most appropriate strategies, Faggiano et. al. (2007) have pointed out that empirical evidence has shown the insufficient effectiveness of school programs. In Slovakia, evaluating the effectiveness of drug substance prevention programs and data-based drug use prevention among schoolchildren is still infrequent (Gabrhelík et. al.,2014). Thus, the current study aims to the explore effectiveness of prevention programs over long-term periods.

### 2. Design

The universal substance prevention Unplugged program is part of the project EU-DAP “The European Drug Addiction Prevention Trial.” 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 (Kreeft et al., 2009). The second principle is the Knowledge-attitude-behaviour model 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 the Unplugged program is to reduce the number of schoolchildren who start using addictive substances and delay the first contact with drugs as well as to delaying the transition from experimentation to regular use (Charvát, Jurystová & Gabrhelík, 2012). In 2013/2014, Unplugged was implemented during 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, Unplugged 2 program was extended by the follow-up program “n-Prevention”. This 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, Orosová & Miovský, 2014). This study has an experimental design.

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

						Data collected
<i>Experimental group</i>	<b>Unplugged</b>	Pre-test	Unplugged	-	Post-test	before program implementation(T1), 12 months later(T3)
<i>Control group</i>		Pre-test	-	-	Post-test	before program implementation(T1), 12 months later(T3)
<i>Experimental group 2</i>	<b>Unplugged 2</b>	Pre-test	Unplugged 2	n-Prevention	Post-test	before program implementation(T1), 12 months later(T3)
<i>Experimental group 2</i>	<b>Unplugged 2</b>	Pre-test	Unplugged 2	-	Post-test	before program implementation(T1), 12 months later(T3)
<i>Control group 2</i>		Pre-test	-	-	Post-test	before program implementation(T1), 12 months later(T3)
<i>Experimental group 3</i>	<b>Unplugged 2</b>	-	Unplugged 2	n-Prevention	Post-test	immediately after program implementation(T2), 12 months later(T3)
<i>Experimental group 3</i>	<b>Unplugged 2</b>	-	Unplugged 2	-	Post-test	immediately after program implementation(T2), 12 months later(T3)
<i>Control group 3</i>		-	-	-	Post-test	immediately after program implementation(T2), 12 months later(T3)

### 3. Objectives

The objective of this study was to examine the long-term effects of the school-based drug prevention programs Unplugged and Unplugged 2, supplemented with n-Prevention booster sessions, on the cumulative index of reported alcohol use and reported smoking in the past 30 days among schoolchildren.

### 4. Methods

#### 4.1. Sample and procedure

In Unplugged, the sample consisted of 744 (M = 12.5 years; 58% girls) Slovak schoolchildren. In Unplugged 2 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 the 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. 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 regressions were used to analyze the data at every measurement point. The cumulative index of reported alcohol use and reported smoking in the past 30 days served as the dependent variable while participation in the program Unplugged or Unplugged 2 served as independent variable. The effect of gender was analyzed as an independent variable and the moderation effect of gender was also explored. The cumulative index of reported alcohol use and smoking at T1 in Unplugged and Unplugged2 with a pre-test and post-test, and cumulative index of reported alcohol use and smoking at T2 in Unplugged2 with a post-test were used as the control variables.

#### 4.4. Results

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

significant effect of Unplugged 2 with a pre-test and post-test or gender on the cumulative index of reported alcohol use and reported smoking at T3. There was no moderation effect of gender in any of the measurements. However, Unplugged 2 with a post-test was significantly associated with the cumulative index of reported alcohol use and reported smoking at T3 in the experimental group with n-Prevention. Schoolchildren in the experimental group with n-Prevention were less likely to report alcohol use and/or smoking. For more details see Table 2. This regression model explained 16.9% of the variance and correctly classified 75.0% of cases.

Table 2. Regression models for CI of alcohol use in and smoking among early adolescents.

T3 in Unplugged 2 with post-test								
	OR		95% C. I		OR		95% C. I	
Gender*	1.33	0.57	2.24	Gender*	0.85	0.54	1.35	
EG1**	0.72	0.33	1.58	EG1**	0.58	0.32	1.03	
EG2**	0.53	0.25	2.24	EG2**	<b>0.41***</b>	0.23	0.70	
CI T2	0.12***	0.07	0.21	CI T2	<b>0.13***</b>	0.08	0.21	
EG1*Gender	0.62	0.19	2.01	-				
EG2*Gender	0.57	0.19	1.68	-				

Note: \*boys as a reference group; \*\*control group as a reference group; EG1=experimental group; EG2=experimental group with n-Prevention; CI=cumulative index; p<0.001\*\*\*

## 5. Discussion and conclusion

The results show that the long-term effectiveness of the program Unplugged was not confirmed. Gabrhelik, et. al. (2014) found the same results regarding alcohol use among schoolchildren. The effect of Unplugged 2 with a pre-test and post-test was not confirmed although the results show the significant effect of Unplugged 2 with a post-test design in the experimental group with n-Prevention on the cumulative index of reported alcohol use and reported 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 further studies looking at the effectiveness of preventive programs, it would be desirable to include methods for detecting fidelity components.

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