

## Chapter #18

### **EFFECTIVENESS OF THE UNIVERSAL DRUG PREVENTION PROGRAM: TEACHERS' ENGAGEMENT, LIFETIME ALCOHOL USE, NORMATIVE BELIEFS AND SELF-CONTROL AMONG EARLY SLOVAK ADOLESCENTS**

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#### **ABSTRACT**

This study addressed the effectiveness of the Unplugged prevention program which was tested in Slovakia at 60 primary schools. The aim was to explore the differences in psychological factors as well as in alcohol use measured at different time points; before T1, n=1295, 52.3% girls, age=11.52, SD=0.61 and 12 months after the implementation of the program T2, n=872. The data were analysed by using mixed ANOVAs with 3 groups differing in the level of teachers' engagement (control group CG, an experimental group EGLE with low teacher engagement and an experimental group with high engagement EGHE – teachers provided more than 6 feedback reports after all 12 sessions) and the dependent variables (alcohol use, normative beliefs, self-control) measured before and after program implementation (T1 & T2). It has shown an increase in alcohol use and normative beliefs regarding the drinking of friends over time regardless of the level of teachers' engagement. A long-term effect of teachers' engagement was found in relation to self-control. The level of self-control in the group with highly engaged teachers did not significantly change over time while it was found to decrease in the other groups.

*Keywords:* lifetime alcohol use, normative beliefs of friends, self-control, universal drug prevention program.

#### **1. INTRODUCTION**

Alcohol is usually the first legal drug with which many pupils tend to experiment. Surveys conducted among schoolchildren have generally reported that alcohol use increases among 11-14 year olds and the initiation age for using legal drugs during the last 20 years has remained constant at about 10 - 11 years old. The attempts to push it to an older age have not been successful. This is significant because it is well-known that early experimentation with alcohol is related to a more frequent abuse of alcohol later in life (Jordan & Andersen, 2017).

Intrapersonal factors such as normative beliefs and self-control are considered to be related to alcohol use and often constitute an integral part of preventive programs. These factors are often addressed in prevention programs in the form of correcting normative beliefs and strengthening self-control.

In the period of adolescence, one of the most significant factors affecting behaviour is the influence of friends. Alcohol use is often initiated and the consumption increased as the result of inflated descriptive normative beliefs – the perception of the prevalence of alcohol

use among friends (French & Cooke, 2012, Stone, Becker, Hubert, & Catalano, 2012). There is substantial evidence for the positive relationship between normative beliefs and alcohol use (Jones & Robinson, 2017). A higher level of normative beliefs has been shown to be associated with an earlier initiation of alcohol use and a higher frequency of alcohol use (McAlaney & McMahon, 2007, Brutovská, Berinšterová, Orosová, & Jurystová, 2014). Normative beliefs regarding the behaviour of friends may have a direct as well as an indirect (mediator, moderator) influence on the behaviour of an individual. It has been found that normative beliefs regarding the number of friends who drink was significantly and directly associated with alcohol use (Brutovská, Orosova, Kalina, & Šebeňa, 2015).

Furthermore, self-control defined as an ability, cognitive process, will-power or a trait which helps to inhibit inappropriate behavioural tendencies by hindering their execution, is also considered as a traditional internal protective factor in relation to alcohol use (Bačíková-Šlešková, Janovská, & Orosová, 2017). A relationship between alcohol use and lower self-control in early adolescence has been found in many studies (Franken et al., 2016, Stautz, Zupan, Fied, & Marteau, 2018). The strengthening and support of self-control during early adolescence is crucial according to numerous authors (Stautz et al., 2018, Guillén, Roth, Alfaro & Fernández, 2015). Despite the fact that self-control decreases with age and becomes more complex, it is one of the main protective factors of alcohol use during adolescence. For example, an enduring positive effect of self-control during the period of seven years in relation to alcohol use from early to late adolescence was found by Griffin, Scheier, Acevedo, Grenard, & Botvin (2012).

Therefore, it is important to monitor the trends in alcohol use in the population of early adolescents as well as identifying the factors related to alcohol use or those which postpone the initiation of drinking. The role of the preventive programs is to reduce alcohol use or to postpone the initiation of substance use (Sanchez et al., 2018).

In Slovakia, one of the few existing and systematically implemented prevention programs with well-documented effectiveness is the prevention program Unplugged. Unplugged is a universal school-based prevention program for young adolescents aged 12-14 years old. This program has been developed within the European project EU-DAP (European Drug Use Prevention) which connects several European countries with the common goal of creating a prevention program which meets the criteria of prevention implementation standards and at the same time corresponds with the European cultural environment (Gabrhelík et al., 2012). Unplugged (Berinšterová, Orosová, & Miovský, 2015) is based on a social influence approach which an educational component which is based on the model KAB (knowledge, attitude, behaviour).

## **2. DESIGN**

A longitudinal study.

## **3. OBJECTIVES**

This study explored the differences in selected intrapersonal factors of pupils (normative beliefs regarding the drinking of friends, self-control) and their risk behaviour (lifetime alcohol use) over time, starting immediately before the preventive program implementation (T1) and 12 months after the completion of the program (T2) in groups of pupils divided according to the level of teachers' engagement.

## 4. METHODS

### 4.1. Participants and recruitment

The data were collected as part of an evaluation study of the school-based prevention program Unplugged. In this program, 60 primary schools from Slovakia (30 assigned to the experimental and 30 to the control group) participated, one 6th grade class from each school. The data collection in the experimental and control groups were carried out immediately before the implementation of the Unplugged program and the post-test measurements were carried out 3 months, 12 months and 18 months after the program implementation. This study presents the findings regarding the effectiveness 12 months after the program implementation. The program Unplugged itself consists of 12 sessions comprising three components (information and attitudes, interpersonal skills, intrapersonal skills <http://www.eudap.net/>). Prior to the implementation of the project, a three-day training of teachers who were to implement the program took place. The amount of feedback after completing the prevention was used as an indicator of teachers' engagement which represented program fidelity, quality of the program implementation (Hansen, 2014, Jurystová, Orosová, & Gabrhelík, 2017). The connection between teachers' engagement and the effectiveness of prevention programs has previously been reported (Gabrhelík et al., 2012).

### 4.2. Sample

In total, 1295 pupils participated at the baseline (prior to program implementation) of the Unplugged program (APVV-0253-11, APVV-15-0662, KEGA 016, UPJŠ-4/2017) and 872 pupils participated at T2, 12 months after the implementation of the program. A representative sample of sixth grade classes from 60 primary schools was selected using a stratified random selection procedure. The participation of pupils was granted by parental consent. The study was approved by the Ethics committee of Pavol Jozef Šafárik University in Košice. Participation in the study was anonymous and an identification code was used to pair respondents within the separate waves. Due to some errors in the identification codes (and thus inability to make pairs) as well as the absence due to sickness of some respondents during the follow up, the total research sample for the present study comprised of 872 adolescents (baseline mean age 11.52, SD 0.61, 52.3% girls).

### 4.3. Methods

Lifetime drinking was measured by the question: How many times (if at all) have you drunk an alcoholic beverage in your life? Respondents had the following answer options: 1: 0x, 2: 1-2x, 3: 3-5x, 4: 6-9x, 5: 10-19x, 6: 20-39x, 7: 40x or more (ESPAD 2012).

Normative beliefs regarding the drinking of friends was measured by the question: How many of your friends, based on your estimation, drink alcoholic beverages (beer, wine, hard alcohol)? The answer options were: 1- no one, 2- a few, 3 - many, 4- most, 5- all (ESPAD 2012).

Self-control was measured by an 11-item Self-control scale (Finkenauer, Engels, & Baumeister, 2005) with the possible answers 1- not like me at all to 5 – very much like me. A higher score means higher self-control. Cronbach's alpha of the scale at T1 was 0.733 and at T2 0.815.

#### 4.4. Statistical analyses

The pupils were divided according to the experimental design: 1. CG-control group, 2. EGLE - experimental group of pupils of those teachers who provided fewer than 6 feedbacks, 3. EGHE - group consisted of pupils whose teachers provided feedback of more than 6 reports after the 12 sessions of the program.

We used 3 mixed between - within subject ANOVAs with one factor - 3 groups and repeated measure of dependent variables at T1 and T2 (alcohol use, normative beliefs, self-control).

### 5. RESULTS

The number of pupils in the control group was 50.7%. The number of pupils in classes with low teacher engagement was 12.4% and high teacher engagement was 36.9%. The means of the measured variables at T1 and at T2 are shown in Table 1.

*Table 1.*  
*Descriptive statistics of the measured variables at T1 and at T2 in groups according to teachers' engagement.*

	CG			EGLE			EGHE		
	N	M	SD	N	M	SD	N	M	SD
Drinking T1	437	1.62	1.20	119	1.83	1.51	301	1.8	1.31
Drinking T2	437	2.23	1.68	119	2.31	1.72	301	2.40	1.68
Norms T1	431	1.38	0.68	116	1.35	0.74	297	1.46	0.73
Norms T2	431	1.80	0.99	116	1.58	0.75	297	1.69	0.86
Self-control T1	278	38.53	5.96	86	39.48	6.21	181	37.46	6.25
Self-control T2	278	37.17	6.01	86	36.40	6.45	181	37.15	6.31

*Note: CG - Control group, EGLE - experimental group with lower engagement, EGHE - experimental group with high engagement, T1 - before the implementation, T2 - 12 months after the implementation*

The first mixed between-within subject analysis of variance was conducted to assess the impact of teachers' engagement on participants' scores in alcohol consumption across the two time periods (T1 - before the implementation and T2 - 12 months after the implementation). There was no significant interaction between group and time, Wilks Lambda=.99,  $F=0.286$ ,  $p=.75$ , partial eta squared=.001. There was a main effect for time, Wilks Lambda=.92,  $F=76.04$ ,  $p=.0005$ , with a moderate effect size (partial eta squared=.082). All groups showed a significant increase in alcohol use across the time periods T1, T2 (CG:  $p<.0005$ ; EGLE:  $p<.0005$ , EGHE:  $p<.0005$ ). The main effect comparing groups was not significant  $F= 2.084$ ,  $p=.13$ , partial eta squared=.005.

The second mixed between-within subject analysis of variance assessed the impact of teachers' engagement on participants' scores on the normative beliefs regarding the drinking of friends across the two time periods T1 and T2. There was a significant interaction between group and time, Wilks Lambda=.990,  $F=4.167$ ,  $p=.016$ , partial eta

squared=.010. There was a main effect for time, Wilks Lambda= 937,  $F=56.885$ ,  $p<.0005$  with a moderate effect size (partial eta squared=.063). All groups significantly differed in normative beliefs across the time periods T1, T2, CG:  $p<.0005$ ; EGLE:  $p=.001$ , EGHE:  $p<.0005$ ). The main effect comparing groups was not significant  $F=1.745$ ,  $p=.175$ , partial eta squared=.004.

The third mixed between-within subject analysis of variance assessed the impact of teachers' engagement on participants' scores in self-control across two time periods T1 and T2. There was a significant interaction between group and time, Wilks Lambda=.986,  $F=3.98$ ,  $p=.019$ , with a small effect size (partial eta squared=.014). There was a main effect for time, Wilks Lambda=.966,  $F=19.180$ ,  $p<.0005$ , partial eta squared=.034. According to the analysis of simple effects conducted to compare the groups individually, significant differences in self-control at T1 and T2 in CG:  $p=.001$  and in EGLE:  $p=.001$  were found but not in EGHE:  $p=.612$ . The main effect comparing groups was not significant  $F=76.849$ ,  $p=.455$ , partial eta squared=.003. However, significant differences were found in the self-control at T1 between CG and EGLE as well as at T1 between CG and EGHE.

It is possible to confirm the main effect in alcohol use as well as the normative beliefs regarding alcohol use of friends in T1 a T2 regardless of the level of teachers' engagement. In the case of self-control, the protective effect of teachers' engagement has been shown. In the group of teachers with the highest level of engagement, there was no significant decrease across the time periods in self-control, while in the control group and in the group with low engagement teachers a significant decrease was found.

## 6. DISCUSSION AND CONCLUSION

There are two representative surveys among schoolchildren which are regularly carried out in Slovakia, the TAD (Tobacco-Alcohol-Drugs) since 1994 and the European School Survey Project on Alcohol and Other Drugs (ESPAD) since 1995 every four years. Based on these surveys, young adolescents in Slovakia start drinking alcohol at the age of 10 and the efforts to move it to an older age have not been successful. The research shows that early primary prevention is necessary at the age 8-10 years when approximately half of pupils do not have experience with alcohol. While the use of other illegal drugs and smoking has been in decline as well as the initiation age, with regard to alcohol Slovakia belongs to one of the countries with high risky behaviour (Nociar, 2014, 2015). In the Unplugged program, alcohol use was reported by 38.8% of pupils at T1, the mean age at T1 was 11.52 years. At T2, a year later, the percentage of pupils who had tried alcohol increased to 53.6%. The use of alcohol in our research increased regardless of the level of teachers' engagement. This finding is in line with the trend of increasing alcohol use during adolescence (Nociar, 2015, ESPAD, 2016, 2017).

A positive relationship between normative beliefs and alcohol use has been confirmed by several studies (Brutovská et al., 2014, Jones & Robinson, 2017). Normative beliefs regarding the drinking of friends may have a direct influence on the behaviour of pupils. Therefore, the correction of normative beliefs regarding the behaviour of friends is an integral part of preventive programs. This study has confirmed a statistically significant increase in normative beliefs regarding alcohol use by friends. All groups significantly differed in normative beliefs across time periods. This finding is in line with the existing findings on normative beliefs (Guillén et al., 2015).

Despite the fact that self-control tends to decrease with age, an enduring positive effect of self-control in relation to risk behaviour of adolescents and particularly their alcohol use has been found in a number of studies (Stautz et al., 2018, Griffin et al., 2012, Bačíková-Šlešková et al., 2017). In this study, a significant decrease in self-control was found between T1 and T2 in the control group and in the group with low teacher engagement. However, in the group with highly engaged teachers a decrease in self-control was not observed.

Overall, this study has confirmed the trends in risk behaviour among young adolescents. In particular, it has shown increasing levels of alcohol use and normative beliefs regarding the drinking of friends and a decrease self-control was observed at T1 when compared with T2. This is in line with other research studies (Stautz et al., 2018; Guillén et al., 2015). The long-term effect of teachers' engagement as one of the indicators of fidelity, quality of implementation of preventive programs was found in relation to the intrapersonal factor of self-control.

Furthermore, the significance of monitoring teachers' engagement of preventive programs was shown to have a protective effect, especially in the case of self-control. The development of preventive programs should not only be based on the monitoring of the effectiveness of these programs but also on monitoring the quality of the implementation by addressing teachers' engagement.

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