



## Short Communication

## Protective factors of substance use in youth subcultures

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## ABSTRACT

Youth subcultures, characterized by a distinctive lifestyle, music preference, shared values and behaviors, are associated with substance use. The aim of this study was to explore whether protective factors such as parental monitoring, parental bonding and parental substance abstinence affect the association between subculture affiliation and adolescents' substance use. We used data from 15-year-old elementary school pupils ( $N = 1380$ ; mean age = 15.47; response 79.5%) who participated in the Health Behaviour in School Aged Children 2009/2010 study. The association between subculture affiliation and substance use (smoking, drinking alcohol, drunkenness, and cannabis use) was adjusted for parental monitoring, parental bonding and parental substance abstinence for boys and girls separately using logistic regression. Adolescents affiliated to one of the selected youth subcultures were significantly more likely to use substances than other 15-years-olds, except for cannabis use in girls. Adjustment for parental monitoring reduced the association between subculture affiliation and substance use by 31–64% in girls and by 10–23% in boys. Adjustment for parental bonding and parental substance abstinence led to no changes or minor changes. After adjustments for protective factors, subculture affiliation remained significantly associated with substance use. The role of protective factors in adolescents with a subculture affiliation regarding substance use is rather limited. Our findings imply that preventive strategies targeting youth subcultures should take protective factors into account and be gender-specific.

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## 1. Introduction

Youth subcultures, characterized by a distinctive lifestyle, music preference and shared values and behaviors (Nicholas, 2009), are strongly associated with substance use (Bobakova, Madarasova Geckova, Reijneveld, & van Dijk, 2012). Punk, Skinheads, Techno-scene, Metal and especially Hip-hop were found to be very popular among Slovak adolescents. Almost one-half of 15-year-olds are affiliated with one of these distinct youth subcultures, and such affiliation has been shown to be strongly associated with smoking, drinking, drunkenness and cannabis use (Bobakova et al., 2012).

Affiliation with these very popular youth subcultures has been shown to be a risk factor, but other factors may protect the youths concerned, making it very important that these factors be identified. Family factors were found to be strong mediators of adolescents' substance use (Raboteg-Šarić, Rijavec, & Brajša-Žganec, 2001; Wang, Dishion, Stormshak, & Willett, 2011; Wills & Yaeger, 2003). One factor is parents' awareness of an adolescent's activities and whereabouts,

i.e. parental monitoring (Smetana & Daddis, 2002). This has been shown to be highly protective against adolescents' substance use in many previous studies (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006; Raboteg-Šarić et al., 2001; Wang et al., 2011; Wills & Yaeger, 2003). Second, bonding between adolescents and their parents has also been shown to be related to lower substance use among adolescents (Wang et al., 2011; Wills & Yaeger, 2003). Third, parents' substance abstinence provides social modeling that may be protective regarding substance use. Evidence shows that adolescents whose parents do not use substances are indeed less likely to use substances themselves (Grayson, 2011; Walden, Iacono, & McGue, 2007).

The aim of this study was to explore whether protective factors such as parental monitoring, parental bonding and parental substance abstinence affect the association between subculture affiliation and adolescents' substance use.

## 2. Material and methods

## 2.1. Sample and procedure

We used data from the Health Behaviour in School-aged Children (HBSC) study conducted in 2010 in Slovakia. In order to create a representative sample, 134 larger and smaller schools located in rural as

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well as in urban areas from all regions of Slovakia. School response rate was 98.1%.

We obtained data from 8491 adolescents from the 5th to 9th grade of elementary schools in Slovakia (response: 79.5%). Final sample comprised 1605 adolescents (mean age = 15.47, 49.7% boys) in the target age group of elementary schools in Slovakia.

The study was approved by the Ethics Committee of the Medical Faculty at the P J Safarik University in Kosice. Parents were informed about the study via the school administration and could opt out if they disagreed with it. Participation in the study was fully voluntary and anonymous with no explicit incentives provided for participation.

More detailed information on study design can be found here (Bobakova et al., 2012).

## 2.2. Measures

### 2.2.1. Subculture affiliation

Respondents were asked whether they would classify themselves as affiliated with one of the listed subcultures. They were asked to choose only one alternative, the one which best described their affiliation. Possible responses were Hip-hop/Punk/Skinheads/Techno scene/Metal/Church community/Other/I would not classify myself as affiliated with any subculture. Those who classified themselves as affiliated with deviance-prone subculture (Hip-hop, Punk, Skinheads, Techno scene, Metal) were categorized as “adolescents with a subculture affiliation”. The rest of the sample (Church community, Other and No affiliation) was categorized as “adolescents without a subculture affiliation”. Youth subcultures as presented are mostly created around the specific genre of music (Gospel, Hip-hop/Rap, Punk, Oi-Punk, Techno/House/Rave, Metal/Heavy-Metal/Rock etc.), but understood as a wider lifestyle construct.

In order to assess substance use, adolescents were asked about smoking cigarettes (at least weekly), drinking alcohol (at least weekly), drunkenness (at least once in past 30 days), and cannabis use (at least once in past 30 days). These were validated measures used worldwide within the HBSC study (Currie et al., 2008). All variables were dichotomized (Bobakova et al., 2012; Currie et al., 2008).

### 2.2.2. Parental monitoring

Respondents were asked about their perception of what their mother and father knew about their activities and whereabouts (Brown & Mounts, 1993; Currie et al., 2008). Using factor analysis, two factors were extracted—5 items concerning mother and 5 concerning father were loaded into two factors separately with factor loadings varying from 0.72 to 0.785 for the first factor (mother's monitoring) and from 0.854 to 0.876 for the second one (father's monitoring). The higher adolescents scored in parental monitoring, the higher were their levels of perceived parental monitoring.

### 2.2.3. Parental bonding

Respondents were asked about emotional support from their mother and father separately (Currie et al., 2008; Parker, Tupling, & Brown, 1979). Factor analysis was used and two factors were then extracted—6 items concerning mother and 6 concerning father were loaded into two factors separately with factor loadings varying from 0.647 to 0.784 for the first factor (mother bonding) and from 0.833 to 0.897 for the second one (father bonding). The higher adolescents scored in parental bonding, the higher were their levels of perceived parental bonding.

### 2.2.4. Parental substance abstinence

Respondents were asked whether their parents smoke daily, drink alcohol at least once a week, get drunk at least once a month or use any drugs (yes/no).

## 2.3. Statistical analyses

After the description of the sample, multivariate logistic regression models were run for smoking cigarettes, drinking alcohol, drunkenness and cannabis use, controlled for each of the protective factors separately for boys and girls. Model 1 tested the crude association of subculture affiliation with substance use. Model 2 was adjusted separately for parental monitoring, parental bonding and parental substance abstinence. The degree of reduction of the odds ratios (ORs) was computed using the formula:  $(OR[crude] - OR[adjusted]) / (OR[crude] - 1) \times 100\%$ . All data were analyzed using SPSS 16.0 for Windows.

## 3. Results

Statistically significant differences between adolescents with a subculture affiliation and other adolescents were found regarding gender, mother's and father's smoking, father's drunkenness, mother's and father's drug use, mother's and father's monitoring, and mother's bonding (Table 1).

Adolescents affiliated with a subculture were significantly more likely than other adolescents to use all substances except for cannabis use in girls (Table 2). For the other substances, ORs ranged from 1.80 for drunkenness to 3.14 for smoking.

Adjustment for parental monitoring reduced the association between subculture affiliation and substance use by 31–63% in girls and by 10–23% in boys. Adjustment for parental bonding and parental substance abstinence caused no or minor changes in ORs (no more than 12%).

## 4. Discussion

Parental monitoring was the protective factor that most affected the association and did so noticeably more in girls than in boys. We also found gender differences regarding parental bonding and parental substance abstinence which seemed to be protective too, but not as much as parental monitoring. After adjustments for each protective factor, subculture affiliation remained strongly and significantly associated with substance use.

Adolescents with a subculture affiliation seem to be monitored less frequently in particular by their mothers than other adolescents, a fact which explains part of the difference in substance use between them. The association of parental monitoring with less substance use has been shown previously (Barnes et al., 2006; Raboteg-Šarić et al., 2001; Wills & Yaeger, 2003). Adjustment for parental monitoring decreased the association between subculture affiliation and adolescents' substance use more distinctly in girls than in boys. This difference cannot be attributed to the traditionally higher levels of parental monitoring regarding girls than regarding boys (Barnes et al., 2006; Grayson, 2011), as such a difference was not found in our sample. Instead, parental monitoring seems to have a stronger mediating effect in girls than in boys with regard to substance use in youth subcultures.

Parental bonding hardly affected the association between subculture affiliation and substance use, although it is considered to be a protective factor that reduces substance use in adolescents (Wang et al., 2011; Wills & Yaeger, 2003). Adolescents who perceive a supportive relationship with their parents (e.g. parental bonding) could be more willing to accept rules or behavioral regulation and disclose relevant information (Keijsers, Frijns, Branje, & Meeus, 2009; Tomcikova, 2011). This may in turn decrease the likelihood of substance use. But our findings suggest that the mediating protective effect of parental bonding with regard to substance use in youth subcultures seems to be rather limited.

Substance abstinence of either parent hardly affected the association between subculture affiliation and substance use. We found only

**Table 1**  
Descriptive statistics by subculture affiliation.

	Adolescents with subculture affiliation		Adolescents without subculture affiliation		Total N = 1380	p-value*
	N = 650	(%)	N = 730	(%)		
Gender						
Boys	387	59.5	267	36.6	654	<0.001
Girls	263	40.5	463	63.5	726	
Substance use						
Smoking	173	26.7	77	10.6	250	<0.001
Drinking	183	28.7	102	14.3	285	<0.001
Drunkenness	172	26.7	112	15.4	284	<0.001
Cannabis use	54	8.4	24	3.3	78	<0.001
Substance abstinence	N = 650	(%)	N = 730	(%)	N = 1380	
Not smoking						
Mother	464	75.0	579	80.5	1043	<0.05
Father	375	61.9	510	72.3	885	<0.001
Not drinking						
Mother	518	81.1	582	83.1	1100	ns
Father	312	51.1	374	53.0	686	ns
Not getting drunk						
Mother	585	94.7	695	96.7	1280	ns
Father	443	73.8	563	79.7	1006	<0.05
No drug use						
Mother	615	99.0	717	100.0	1332	<0.01
Father	598	98.7	703	99.7	1301	<0.05
Parenting	Mean score (SD)		Mean score (SD)		N	
Monitoring						
Mother	17.47 (2.69)		18.32 (2.08)		1343	<0.001
Father	15.61 (4.00)		16.06 (3.76)		1343	<0.05
Bonding						
Mother	21.24 (2.86)		21.57 (2.37)		1337	<0.05
Father	19.53 (4.68)		19.82 (4.21)		1329	ns

\* based on chi-square test.

Note: Percentages do not always add up to 100, due to rounding.

a slight effect of parental abstinence on drunkenness in boys and smoking in girls in youth subcultures. According to Grayson (2011), adolescents perceiving a supportive relationship with their parents (e.g. parental bonding) could be more likely to model their health behavior. In the case of youth subcultures, simply having a parent who provides a model of substance abstinence and with whom the adolescent has a close bond may not protect him/her from substance use (Grayson, 2011).

Our results suggest that part of the additional risk of substance use in youth subcultures is due to a lack of protective factors, particularly parental monitoring. It could be a consequence of parents' difficulties with monitoring or supervising more problematic adolescents effectively, or that parents who are unable to effectively monitor their children may have other related problems or characteristics (genetic, environmental, or both) as well (Jacobson & Crockett, 2000). The latter might include parental substance use. Furthermore, the lack of protective factors might be an expression of rebellion against parents and against conforming with the society, which is typical for adolescence (Nurmi, 2004) and is embodied in youth subcultures and also manifests itself as substance use (McCulloch, Stewart, & Lovegreen, 2006). Another explanation could be that the lack of protective factors leads to substance use, and these shared substance use patterns gather adolescents in youth subcultures via peer selection. Whether strengthening parental skills would reduce substance use in youth subcultures deserves further study. Due to the cross-sectional design of our study we cannot further explore these relationships and their nature and direction of the pathway.

#### 4.1. Strengths and limitations

The strength of our study is that it comprises relevant data from a representative sample of adolescents. A limitation might be that we were missing data on subculture affiliation from 225 respondents. However, no differences or merely trivial differences regarding the use of

various substances were found between those 225 adolescents and the remainder of the sample. As more boys than girls did not answer this question, a medium difference was found regarding gender (Cohen's  $w = 0.37$ ). This difference could have caused a very slight underestimate of the proportion of adolescents having a subculture affiliation, as boys were affiliated more frequently. However, the small size of this group makes it unlikely that this had any effect on further findings. Findings regarding cannabis users should be interpreted with caution due to small number of cannabis users in our sample.

#### 4.2. Implications

Our findings imply that youth subculture affiliation is associated with a lack of protective factors, and that the role of these common protective factors regarding substance use seems to be rather limited in youth subcultures. Parental monitoring seems to be the protective factor which most effectively decreases substance use in youth subcultures. Preventive strategies could be targeted toward adolescents with a subculture affiliation and their parents, and aimed at strengthening an adolescent's resiliency in a high-risk environment and at improving parenting skills, particularly regarding parental monitoring. Policy makers and education/health/welfare practitioners should be more concerned about these patterns of substance use in young people.

The factors that protect adolescents against the use of substances despite their subculture affiliation highly deserve further study. This also concerns the causal pathway in which they act regarding substance use in youth subcultures, a topic that could best be studied using a longitudinal design.

#### 5. Conclusion

The role of protective factors in youth subcultures regarding substance use seems to be rather limited. Our findings imply that preventive

**Table 2**  
Substance use (smoking, drinking, drunkenness and cannabis use) in youth subcultures by gender, crude and with adjustment for potentially protective factors: odds ratios (OR) and 95% confidence intervals (CI).

	Smoking OR (95% CI)	Drinking OR (95% CI)	Drunkenness OR (95% CI)	Cannabis use OR (95% CI)
<b>Boys</b>				
Parental monitoring Model 1—Crude	N = 617	N = 606	N = 616	N = 613
Subculture affiliation	2.97 (1.88–4.68)***	2.19 (1.49–3.22)***	1.80 (1.21–2.68)**	2.67 (1.38–5.19)**
Model 2				
Subculture affiliation	2.77 (1.74–4.42)***	1.99 (1.34–2.96)**	1.63 (1.09–2.45)*	2.29 (1.17–4.51)*
Monitoring—mother	0.68 (0.57–0.82)***	0.62 (0.51–0.74)***	0.65 (0.54–0.78)***	0.60 (0.47–0.75)***
Monitoring—father	0.75 (0.62–0.92)**	0.85 (0.70–1.03)	0.85 (0.70–1.04)	0.85 (0.64–1.13)
Parental bonding Model 1—Crude	N = 610	N = 600	N = 610	N = 608
Subculture affiliation	3.14 (1.99–4.95)***	2.18 (1.48–3.21)***	1.98 (1.32–2.96)***	2.43 (1.27–4.63)**
Model 2				
Subculture affiliation	3.09 (1.95–4.90)***	2.14 (1.45–3.16)***	1.91 (1.27–2.87)**	2.29 (1.19–4.38)*
Bonding—mother	0.84 (0.70–1.01)	0.89 (0.75–1.05)	0.95 (0.88–1.02)	0.75 (0.60–0.93)**
Bonding—father	0.75 (0.63–0.90)**	0.91 (0.76–1.08)	0.76 (0.64–0.90)**	0.89 (0.69–1.15)
Parental substance use Model 1—Crude	N = 612	N = 604	N = 609	N = 608
Subculture affiliation	2.99 (1.89–4.72)***	2.20 (1.50–3.23)***	1.86 (1.26–2.76)**	2.38 (1.25–4.55)**
Model 2				
Subculture affiliation	2.86 (1.79–4.57)***	2.19 (1.49–3.21)***	1.75 (1.17–2.61)**	2.29 (1.19–4.40)*
Substance abstinence—mother	0.47 (0.29–0.74)**	1.19 (0.70–2.03)	0.27 (0.12–0.62)**	2.72 (0.10–70.86)
Substance abstinence—father	0.50 (0.33–0.77)**	0.89 (0.60–1.33)	0.57 (0.37–0.89)	0.10 (0.01–1.41)
<b>GIRLS</b>				
Parental monitoring Model 1—Crude	N = 707	N = 696	N = 707	N = 704
Subculture affiliation	2.88 (1.91–4.34)***	2.17 (1.43–3.29)***	1.96 (1.33–2.89)***	1.83 (0.78–4.28)
Model 2				
Subculture affiliation	2.30 (1.49–3.54)***	1.75 (1.14–2.71)*	1.62 (1.08–2.43)*	1.31 (0.54–3.17)
Monitoring—mother	0.67 (0.47–0.69)***	0.59 (0.49–0.72)***	0.63 (0.52–0.76)***	0.63 (0.46–0.87)**
Monitoring—father	0.61 (0.50–0.75)***	0.81 (0.66–0.99)*	0.82 (0.67–0.99)*	0.54 (0.38–0.78)***
Parental bonding Model 1—Crude	N = 690	N = 681	N = 690	N = 679
Subculture affiliation	2.62 (1.73–3.96)***	2.18 (1.43–3.32)***	1.97 (1.33–2.91)***	1.65 (0.69–3.93)
Model 2				
Subculture affiliation	2.45 (1.61–3.74)***	2.06 (1.35–3.15)***	1.87 (1.26–2.78)**	1.57 (0.65–3.78)
Bonding—mother	0.75 (0.62–0.91)**	0.80 (0.66–0.97)*	0.77 (0.64–0.93)**	0.99 (0.65–1.51)
Bonding—father	0.72 (0.60–0.87)***	0.82 (0.68–1.00)*	0.86 (0.71–1.04)	0.73 (0.51–1.02)
Parental substance use Model 1—Crude	N = 690	N = 682	N = 690	N = 688
Subculture affiliation	2.70 (1.78–4.11)***	2.04 (1.34–3.11)***	1.92 (1.29–2.85)**	1.86 (0.76–4.52)
Model 2				
Subculture affiliation	2.44 (1.59–3.74)***	2.09 (1.36–3.19)***	1.85 (1.23–2.77)**	1.87 (0.77–4.56)
Substance abstinence—mother	0.37 (0.24–0.59)***	0.67 (0.40–1.14)	0.33 (0.14–0.76)**	–
Substance abstinence—father	0.70 (0.45–1.09)	0.61 (0.38–0.98)*	0.49 (0.32–0.76)**	–

\* p<0.05.

\*\* p<0.01.

\*\*\* p<0.001.

strategies targeting youth subcultures should take protective factors into account and should be gender-specific.

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#### Contributors

All authors contributed to the design of the study as well as to the protocol. Data collection was supervised by Daniela Bobakova and Andrea Madarasova Geckova. All authors participated on statistical analyses and drafting of the manuscript. All authors have substantially contributed to the manuscript as submitted. Each of them has read and agreed to the submitted final version of the manuscript.

#### Conflict of interest

The authors have no conflict of interest in connection with the manuscript. The materials presented are original and unpublished and are not under consideration for publication elsewhere.

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