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Subculture Affiliation Is Associated with Substance Use of Adolescents

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Adolescents · Subcultures · Substance use · Family affluence · Peer influence · Slovakia

Abstract
Youth subcultures (hip-hop, punk, skinhead, techno scene, metal) are known for specific lifestyles, music preferences, shared values and behaviours of their members. The aim of this study was to assess the association between subculture affiliation and substance use (tobacco, alcohol and cannabis), and whether gender, family affluence and substance use by peers explain this association. Subculture affiliation was significantly associated with substance use (OR/95% CI: smoking 3.13/2.30–4.24; drinking 2.58/1.95–3.41; drunkenness 2.02/1.54–2.66; cannabis use 2.42/1.46–4.00). Only a part of this risk runs via gender, family affluence and peer substance use. Health promotion should be targeted in particular at adolescents with a subculture affiliation as they are at higher risk of substance use.

Introduction

Lifestyle, music preference, shared values and behaviours of young people can be understood as components of youth subcultures [1]. Adolescents feel the need to be accepted and respected by a group of their closest friends. While longing for acceptance among this group, they assume norms and behaviour patterns which are often manifested as risky [2, 3], including substance use [4].

Music preference seems to be the core component of youth subcultures, causing such subcultures to be denoted frequently on that basis [5]. Music plays an important role in peer-group formation [6, 7], adolescents' identity-finding, self-perception, shared values, conflicts and other social and developmental issues [8, 9]. A number of previous studies [10–12] have shown an association between music preference and substance use in young people. In these studies adolescents with preferences for loud energising types of music were more likely to report substance use.

Previous studies have explored the associations between social and cultural identifications, such as those associated with subculture affiliation and substance use [13–17], but none of them have examined adolescents in Eastern Europe, where the situation might differ due to a delayed yet recently accelerated emergence of youth sub-

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cultures following the Velvet revolution in 1989. Moreover, only a few studies have examined this issue focusing on the crucial age for identity finding and the development of substance use patterns.

Therefore, the aim of this study was to assess the association between subculture affiliation and substance use (tobacco, alcohol and cannabis), and whether gender, family affluence and substance use by peers explain this association.

Methods

Sample and Procedure

We used data from the Health Behaviour in School-aged Children (HBSC) study conducted in May and June 2010 in Slovakia. From a list of schools based on information from the Slovak Institute of Information and Prognosis for Education, 134 larger and smaller schools located in rural as well as urban areas from all regions of Slovakia were randomly chosen to create a representative sample. We contacted 108 schools of which 106 took part in our survey, representing a 98.1% response rate. According to the protocol of the HBSC study, classes from the 5th to 9th grades were selected randomly, one from each grade per school. We obtained data from 8,491 adolescents from the 5th to 9th grade of elementary schools in Slovakia (response: 79.5%). Non-response was primarily due to illness (10.3%) and parental disapproval of the participation of their children (7.4%). Only 15-year-old adolescents from the 8th and 9th grades were asked questions about subcultures and cannabis use. This represents the final sample of 1,605 adolescents (mean age = 15.47, 49.7% boys) in the target age group of elementary schools in Slovakia. Due to a missing response on the question about youth subcultures, 225 respondents were excluded. Analyses were performed on a total sample of 1,380 adolescents.

The study was approved by the Ethics Committee of the Faculty of Medicine at the P.J. Safarik University in Kosice. Parents were informed about the study via the school administration and could withdraw their children if they disagreed with it. Participation in the study was fully voluntary and anonymous with no explicit incentives provided for participation. Questionnaires were administrated by trained research assistants in the absence of a teacher during regular class time.

Measures

Family Affluence. This was measured by the Family Affluence Scale II (FAS II) [18, 19], which consists of four questions: how many computers does your family own (none/one/two/more than two)? Does your family own a car, van or truck (no/yes, one/yes, two or more)? Do you have your own bedroom (no/yes)? During the past 12 months, how many times did you travel away on holiday with your family (not at all/once/twice/more than twice)? The sum score was computed and a three-point ordinal scale was used in the analysis: low affluence (score = 0–3), middle affluence (score = 4–6) and high affluence (score = 7–9).

Subculture Affiliation. Respondents were asked whether they would classify themselves as affiliated with one of a range of lifestyles (subcultures). They were asked to choose only one alternative – the one which best describes them. Possible responses were: hip-hop/punk/skinhead/techno scene/metal/church community/other/I would not classify myself as affiliated with any subculture. The categories of youth subcultures were chosen according to their anticipated prevalence [20]. Those who classified themselves as affiliated with one of the selected subcultures (hip-hop, punk, skinhead, techno scene, metal) were categorised as 'adolescents with a subculture affiliation'. The rest of the sample was categorised as 'adolescents without a subculture affiliation'.

Table 1. Prevalence of subculture affiliations with particular youth subcultures

Subculture affiliation	Boys		Girls		Total	
	n	%	n	%	n	%
Hip-hop	209	32.0	150	20.7	359	26.0
Punk	23	3.5	28	3.9	51	3.7
Skinhead	11	1.7	0	0	11	0.8
Techno scene	77	11.8	60	8.3	137	9.9
Metal	67	10.2	25	3.4	92	6.7
Adolescents with a subculture affiliation	387	59.2	263	36.3	649	47.1
Adolescents without a subculture affiliation	267	40.8	463	63.8	729	52.8

Smoking Cigarettes. Respondents were asked how often they smoke cigarettes at present: I do not smoke/less than once a week/at least once a week, but not every day/every day. Those who reported smoking at least once a week were categorised as 'smokers'.

Drinking Alcohol. Respondents were asked how often they drank five different types of alcoholic drinks (beer, wine, spirits, alcopops, and other), with possible responses never/rarely/every month/every week/every day. Those who reported drinking at least one type of alcoholic drink every week were categorised as 'alcohol consumers'.

Drunkenness. Respondents were asked on how many occasions they had been drunk in the previous 30 days (0/1–2/3–5/6–9/10–19/20–39/40 and more). Those who reported being drunk at least once were categorised as 'drunk'.

Cannabis Use. Respondents were asked on how many occasions they had used cannabis in the previous 30 days (0/1–2/3–5/6–9/10–19/20–39/40 and more). Those who reported using cannabis at least once were categorised as 'cannabis users'.

Peers. Respondents were asked how many (none/several/most/all) of their friends with whom they spent most of their free time would they estimate: (1) smoke cigarettes; (2) drink alcohol; (3) get drunk, and (4) use cannabis. Those who reported that at least most of their friends smoke, drink, get drunk or use cannabis were considered to be 'exposed to peer influence'.

Statistical Analyses

We first computed the prevalence rates of adolescents' subculture affiliations for the various youth subcultures. Next, multivariable logistic regression models were run separately for smoking cigarettes, drinking alcohol, drunkenness and cannabis use. Model 1 tested the crude association of subculture affiliation with

Table 2. Background characteristics of adolescents with a subculture affiliation (n = 650) and other adolescents (n = 730)

	Adolescents with a subculture affiliation		Other adolescents		Total (n = 1,380)		p (χ^2 test)
	n	%	n	%	n	%	
Gender							<0.001
Boys	387	59.5	267	36.6	654	47.4	
Girls	263	40.5	463	63.5	726	52.7	
Family affluence							n.s.
Low	163	26.7	192	27.4	355	27.0	
Medium	332	54.4	357	50.9	689	52.5	
High	116	19.0	153	21.8	269	20.5	
Substance use							
Smoking	173	26.7	77	10.6	250	18.1	<0.001
Drinking	183	28.7	102	14.3	285	21.1	<0.001
Drunkenness	172	26.7	112	15.4	284	20.7	<0.001
Cannabis use	54	8.4	24	3.3	78	5.7	<0.001
Peers'substance use							
Peer smoking	199	31.3	140	19.5	339	25.0	<0.001
Peer drinking	237	37.5	205	28.6	442	32.8	<0.001
Peer drunkenness	179	28.4	126	17.6	305	22.6	<0.001
Peer cannabis use	37	5.9	22	3.1	59	4.4	<0.05

Percentages do not always add up to 100 due to rounding. Number of missing cases per variable: family affluence – 67; smoking – 2; drinking – 27; drunkenness – 6; cannabis use – 14; peer smoking – 25; peer drinking – 32; peer drunkenness – 32; peer cannabis use – 31.

substance use. Model 2 was adjusted for gender and family affluence (FAS). Model 3 was additionally adjusted for peers' smoking, drinking, drunkenness and cannabis use, in order to explore whether these explain the associations with the subculture affiliation. We also assessed the interactions between subculture affiliation and peers' risky behaviour separately for peer smoking, drinking, drunkenness and cannabis use. All data were analysed using SPSS 16.0 for Windows.

Results

An overview of the affiliations with particular youth subcultures can be found in table 1. In our sample 47.1% of adolescents reported having a subculture affiliation with one of the selected subcultures, while the remaining 52.8% were without a subculture affiliation. Boys (59.2%) reported affiliation with one of the selected subcultures significantly more often than girls (36.3%; $p < 0.001$).

Of the adolescents, 18.1% reported smoking, 21.1% reported drinking, 20.7% reported drunkenness and 5.7% reported cannabis use. Substance use was reported significantly more often by adolescents with a subculture affiliation compared with the others, as well as substance use among their closest friends (table 2).

Subculture affiliation was significantly associated with a higher probability of use of all substances (table 3, model 1). Adding gender and family affluence into the model partially affected these associations. It decreased the association of subculture affiliation with drinking alcohol by 18.4% and with cannabis use by 30.3% (table 3, model 2). Regarding other substance use there were minor changes. Adding peer behaviours regarding use of the substance concerned decreased all associations substantially, by 18.8% regarding adolescents' smoking, 31.7% regarding adolescents' drinking, 36.3% regarding adolescents' drunkenness and 40.1% regarding adolescents' cannabis use (table 3, model 3). Interactions between subculture affiliation and peers' risky behaviour were not significant (not shown).

Discussion

This study assessed the association between subculture affiliation and substance use (tobacco, alcohol and cannabis), and whether gender, family affluence and substance use by peers explained this association. Subculture affiliation was strongly and significantly associated with

Table 3. Associations of subculture affiliation with substance use

		Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
Smoking cigarettes (n = 1,301)				
Subculture affiliation	no	1 (reference)	1 (reference)	1 (reference)
	yes	3.13 (2.30–4.24)***	3.10 (2.27–4.24)***	2.73 (1.93–3.87)***
Gender	girls		1 (reference)	1 (reference)
	boys		1.02 (0.76–1.38)	1.09 (0.78–1.54)
Family affluence	high		1 (reference)	1 (reference)
	middle		1.06 (0.73–1.55)	1.07 (0.69–1.66)
	low		0.87 (0.56–1.35)	0.81 (0.49–1.33)
Peer smoking	no			1 (reference)
	yes			11.88 (8.51–16.59)***
Drinking alcohol (n = 1,275)				
Subculture affiliation	no	1 (reference)	1 (reference)	1 (reference)
	yes	2.58 (1.95–3.41)***	2.29 (1.72–3.05)***	2.08 (1.54-2.82)***
Gender	girls		1 (reference)	1 (reference)
	boys		1.79 (1.34–2.37)***	1.94 (1.43-2.63)***
Family affluence	high		1 (reference)	1 (reference)
	middle		0.99 (0.69–1.41)	1.03 (0.71-1.51)
	low		0.88 (0.58–1.32)	0.96 (0.62-1.49)
Peer drinking	no			1 (reference)
	yes			5.29 (3.94-7.11)***
Drunkenness (n =1,295)				
Subculture affiliation	no	1 (reference)	1 (reference)	1 (reference)
	yes	2.02 (1.54–2.66)***	1.93 (1.46–2.56)***	1.65 (1.22–2.22)***
Gender	girls		1 (reference)	1 (reference)
	boys		1.20 (0.91–1.59)	1.21 (0.90–1.63)
Family affluence	high		1 (reference)	1 (reference)
	middle		1.22 (0.85–1.76)	1.31 (0.89–1.94)
	low		1.14 (0.76–1.72)	1.29 (0.83–1.99)
Peer drunkenness	no			1 (reference)
	yes			5.39 (4.00–7.26)***
Cannabis use (n= 1,289)				
Subculture affiliation	no	1 (reference)	1 (reference)	1 (reference)
	yes	2.42 (1.46–4.00)***	1.99 (1.19–3.33)**	1.85 (1.07–3.18)*
Gender	girls		1 (reference)	1 (reference)
	boys		2.62 (1.54–4.47)***	2.19 (1.25–3.83)**
Family affluence	high		1 (reference)	1 (reference)
	middle		0.90 (0.48–1.69)	0.91 (0.46–1.78)
	low		1.23 (0.62–2.44)	1.31 (0.63–2.72)
Peer cannabis use	no			1 (reference)
	yes			15.70 (8.43–29.26)***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

substance use, and adjustment for gender and family affluence decreased the strength of this association. Adjustment for substance use by peers substantially reduced the associations of subculture affiliation with substance use, but this association remained rather strong and statistically significant.

Studies focused on the same age group as in our study mostly examined the role of music, but not the role of a self-selected subculture. Listening to specific musical genres is closely connected to youth subcultures and is found to be a risk factor of substance use [8, 10–12], which is in line with our results. Other previous studies explored the associations between most of the mentioned risky subcultures (hip-hop, punk, skinhead, techno scene) and substance use (alcohol, drugs) [13–15]. Our results are in line with these previous studies, but their respondents were on average older, whereas for establishing health-risk behaviour the age of young adolescents seems to be crucial [19].

Countries differ regarding the types of youth subcultures that occur and that their population share. This apparently leads to different associations with substance use. Our findings are in line with a few other studies focused on subcultures in a similar age group, but those used different typologies for groups, making their results regarding groups with a higher risk difficult to compare. Studies on Danish and Dutch youths found that adolescents with a subculture affiliation are more likely to report smoking, drinking and soft drug use [16, 17].

We did not find any differences in family affluence between adolescents with a subculture affiliation and other adolescents. This is in line with Shildrick's and MacDonald's [21] statement that youths from different social backgrounds can hold similar values shared in a particular subculture. However, there may be other constructs such as work/education-related identities, street-corner socialising, social segregation, leisure activities in neighbourhood-based peer groups, ethnic identities and/or articulation of racism in and between subcultures that have to be taken into account [21]. Also intrapersonal or family factors may play a role in adolescents' substance use [22, 23]. Future research should take these possible pathways leading to subculture affiliation and consequently to substance use into account.

Our findings showed adolescents' substance use to be strongly associated with peers' substance use, which is in line with other studies [24, 25]. This may be due to the fact that the peers who are involved in substance use also share the same subculture affiliation. A similar explanation has been provided by Mulder et al. [26] regarding music. Music preference can model substance use and fans of different types of music may select friends with certain use patterns that reinforce their own inclination to substance use [26]. We can assume that the association of youth subcultures with adolescents' substance use operates via their peers being involved in the same youth subcultures [10]. At the same time, existing substance use patterns could possibly determine adolescents' subculture affiliation via peer selection [27]. One way or another, having a subculture affiliation itself increases the risk of being involved in substance use, independent of the influence of peers.

Strengths and Limitations

An important strength of our study is that we were able to collect relevant data from a representative sample of adolescents from an age group relevant for identity-finding and stereotyping health-related behaviour. A limitation of our study could be that we used self-reports regarding substances that are socially and sometimes legally inadmissible in this age group. However, self-reporting such behaviour has been previously shown to offer satisfying reliability [28]. Moreover, our findings regarding substance use are comparable to a previous HBSC study [19], so we do not expect this to be a source of bias. Another limitation of this study could be that we were missing data on subculture affiliation from 225 respondents. Compared to the remainder of the sample, we found no or only trivial differences regarding the use of various substances. We found a medium difference regarding gender (Cohen's $w = 0.37$), as more boys than girls did not answer this question. This difference could lead to a very slight underestimation of the proportion of adolescents having a subculture affiliation, as boys were affiliated more frequently. The small size of this group makes it unlikely that this had any effect on further findings.

Implications

Our study shows that subculture affiliation is strongly associated with adolescents' substance use. Whether substance use as presented in our study will develop into a more harmful and problematic substance use pattern in later adolescence requires additional longitudinal research. On the other hand, the majority of adolescents with a subculture affiliation do not behave riskily. The factors that protect them, e.g. parental control or substance abstinence of parents, may be of interest for future research. Moreover, interventions targeting adolescent substance use could be framed in these subcultures as well, to reach adolescents with a subculture affiliation more effectively.

Conclusion

Youth subcultures remain very popular among adolescents, with almost half of all adolescents having a subculture affiliation. Subculture affiliation appears to be an important risk factor with regard to adolescents' substance use. Only a part of this risk runs via gender, family affluence and peer substance use. Adolescents with a subculture affiliation use substances more frequently. Prevention programmes should target youth subcultures by highlighting and promoting healthy lifestyle and socially accepted leisure time activities popular for adolescents within a particular subculture.

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References

1 Nicholas S: Subcultures and Countercultures – Research Starters Sociology. Toledo, Great Neck, 2009, pp 1–6.
2 Tarrant M, MacKenzie L, Hewitt LA: Friendship group identification, multidimensional self-concept, and experience of developmental tasks in adolescence. J Adolesc 2006;29:627–640.
3 Nurmi J: Socialization and self-development: channeling, selection, adjustment, and reflection; in Lerner RM, Steinberg LD (eds): Handbook of Adolescent Psychology. Hoboken, Wiley & Sons, 2004, p 85.
4 Simons-Morton B, Chen RS: Over time relationships between early adolescent and peer substance use. Addict Behav 2006;31:1211–1223.
5 Hodkinson P, Deicke W: Youth Cultures: Scenes, Subcultures and Tribes. New York, Routledge, 2007.
6 Bakagiannis S, Tarrant M: Can music bring people together? Effects of shared musical preference on intergroup bias in adolescence. Scand J Psychol 2006;47:129–136.
7 Selfhout MHW, Branje SJT, ter Bogt TFM, Meeus WHJ: The role of music preferences in early adolescents' friendship formation and stability. J Adolesc 2009;32:95–107.
8 Baker F, Bor W: Can music preference indicate mental health status in young people? Australas Psychiatry 2008;16:284–288.
9 Schwartz K: Music preferences, personality style, and developmental issues of adolescents. J Youth Ministry 2004;3:47–64.
10 Mulder J, Ter Bogt TFM, Raaijmakers QAW, et al: The soundtrack of substance use: music preference and adolescent smoking and drinking. Subst Use Misuse 2009;44:514–531.
11 Pedersen W: Cannabis use: subculture opposition or social marginality?: a population-based longitudinal study. Acta Sociol 2009;52:135–148.
12 Forsyth AJM, Barnard M, Mckeganey NP: Musical preference as an indicator of adolescent drug use. Addiction 1997;92:1317–1325.
13 Allaste A, Lagerspetz M: Recreational drug use in Estonia: the context of club culture. Contemp Drug Probl 2002;29:183.
14 Anderson TL, Kavanaugh PR, Rapp L, Daly K: Variations in clubbers' substance use by individual and scene-level factors. Adicciones 2009;21:289–308.
15 Rácz JG: Drug use by the members of youth subcultures in Hungary. Int J Addict 1992;27:289–300.
16 Verkooijen KT, de Vries NK, Nielsen GA: Youth crowds and substance use: the impact of perceived group norm and multiple group identification. Psychol Addict Behav 2007;21:55–61.
17 Van der Rijt GAJ, d'Haenens LSJ, Van Straten P: Smoking and other substance use as distinct features of teenage subcultures. J Adolesc Health 2002;31:433–435.
18 Currie C, Molcho M, Boyce W, et al: Researching health inequalities in adolescents: the development of the health behaviour in school-aged children (HBSC) family affluence scale. Soc Sci Med 2008;66:1429–1436.
19 Currie C, Gabhainn SN, Godeau E, et al: Inequalities in young people's health. HBSC international report from the 2005/2006 survey. Health Policy for Children and Adolescents, 2008, report 5.
20 Bobakova D: Relation between youth subcultures and drugs; thesis, Prešov, 2009.
21 Shildrick T, MacDonald R: In defence of subculture: young people, leisure and social divisions. J Youth Stud 2006;9:125–140.
22 Veselska Z, Madarasova Geckova A, Reijneveld SA, van Dijk JP: Self-efficacy, affectivity and smoking behavior in adolescence. Eur Addict Res 2011;17:172–177.
23 Tomcikova Z, Madarasova Geckova A, Reijneveld SA, van Dijk JP: Parental divorce, adolescents' feelings toward parents and drunkenness in adolescents. Eur Addict Res 2011;17:113–118.
24 Mayberry ML, Espelage DL, Koenig B: Multilevel modeling of direct effects and interactions of peers, parents, school, and community influences on adolescent substance use. J Youth Adolesc 2009;38:1038–1049.
25 Glaser B, Shelton KH, Van den Bree MBM: The moderating role of close friends in the relationship between conduct problems and adolescent substance use. J Adolesc Health 2010;47:35–42.
26 Mulder J, Ter Bogt TFM, Raaijmakers QAW, et al: Is it the music? Peer substance use as a mediator of the link between music preferences and adolescent substance use. J Adolesc 2010;33:387–394.
27 Madarasova Geckova A, Stewart R, Van Dijk JP, Orosova O, Groothoff JW, Post D: Influence of socio-economic status, parents and peers on smoking behaviour of adolescents. Eur Addict Res 2005;11:204–209.
28 Del Boca FK, Noll JA: Truth or consequences: the validity of self-report data in health services research on addictions. Addiction 2000;95:S347–S360.