

Musical preference and drug use among youth: an empirical study

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Abstract

Drug use is a popular behavior among youth. Music and lyrics are recognized as a contributing factor to the liberalization of views on legal and illegal drugs, and thus to use these substances. This study aims to identify the relationship between musical preference and views on and the use of drugs among youth. Over 2,500 students from 27 high schools in the Subcarpathian Voivodeship of Poland were surveyed. Respondents were chosen via stratified random sampling, and data was collected using a questionnaire. The results of the analysis empirical data suggest that the opinions of youths about drugs may be related to their musical preferences. The results of this study may be applied to prevention activities. They may also be a starting point for further research on the relationships between music and risky behavior.

KEY WORDS: music, adolescent, illegal drugs, alcohol, cannabis, peer influence.

Introduction

Over the last two decades, observers and researchers (mainly in European countries), have reported a high indication in the use of illegal drugs, especially marijuana, whose recreational use is most often observed among youth (1-6). Music, and especially its lyrics, seems to be playing a meaningful role

in this phenomenon. In 2005, researchers from the University of Pittsburgh School of Medicine analyzed nearly 300 of the most popular songs (according to Billboard) for the frequency of alcohol and drug references by genre. Such references were observed in 9% of pop songs, 14% of rock songs, 20% of hip-hop and R&B songs, and as much as 77% of rap songs. The Authors indicated that music might be an essential determinant of views on drugs. However, they analyzed only lyrical content and did not collect data on the behavior of youth (7).

However, relationships between some music genres (rap, reggae, techno, R&B, punk, heavy metal, house, trance) and alcohol use are thoroughly documented in published empirical research results (8-12). There is also a plethora of data confirming relationships between some music genres (referred to above but also electronic and psychedelic music as well as hip-hop and gangsta rap, with the illegal drug use - marijuana, amphetamine, ecstasy, LSD, hallucinogenic mushrooms, heroin and GHB (8, 9, 11-19). A review of information on albums has shown that drugs are a fairly common theme, whether on album covers, in album titles, or cited as an inspiration by the artists (20-22). Several studies have revealed that the frequency of drug references in the lyrics of popular songs has increased manifold in recent decades, and that drug use is most often associated with splendor, wealth, improved mood, sexual activity, celebration, and social life (23-25).

In the second half of the 1990s, it was observed that the musical preferences of adolescents might correlate positively with risky behavior, including the use of drugs (26). Similar observations were made in 2009 by the Council on Communications and Media (27).

Research aim

This research aimed to determine the scale of drug use and its socio-cultural determinants among youth. The study was part of the Author's doctoral dissertation. Data was collected from high school students in the Subcarpathian Voivodeship of Poland during the 2015-2016 school year using surveys. In order to determine the scale and causes for drug use by youths, the following research problems have been formulated setting out research directions:

- What environmental determinants are conducive for more liberal youth attitudes towards drugs?

- What type of family-related determinants impact drug use decisions?
- What demographic factors impact youth drug use decisions?
- What cultural factors impact youth drug use decisions?
- What is the role of pop culture in creating a positive image for drugs?

In order to find an answer, detailed questions were phrased, research hypotheses were formulated, variables and indicators were identified.

This article presents the relationships identified between the musical preferences of young people and their views on and use of legal and illegal drugs. Analysis of empirical data attempted to answer the following questions:

- (1) Is there a relationship between musical preference and the perception of drugs as safe?
- (2) Is there a relationship between musical preference and views on the legalization of marijuana?
- (3) Is there a relationship between musical preference and the use of legal and illegal drugs?

The participation in the study was voluntary. The research was carried out with the approval of University (University of Rzeszów, DSH-5200/57S-N/2015) and the Subcarpathian Superintendent of Education (Consent of the Provincial Superintendent of Education for the implementation of surveys among high school students, No. ORE.031.161.2015 of 10/09/2015).

Materials and methods

Stratified random sampling was used to acquire representative data. The sample was divided into three categories: schools from Rzeszów (the voivodeship's capital); schools from towns with over 20,000 residents; and schools from towns and villages with under 20,000 residents. In the first category, only schools were selected. In the second and third categories, the towns and villages were selected first, and then the schools. Twenty-seven schools were chosen in total (9 from each category). Students from one department of each year at each school were surveyed. Classes were selected for the survey on the basis of school organization.

Data was collected from nearly 2500 students. The research sample comprised 46% of boys and 54% of girls. The respondents were between 16 and 19 years old. Age in the research sample was distributed as follows: 16 years old: 32%, 17 years old: 28%, 18 years old: 30%, 19 years old: 10%. Most of the research participants (64%) inhabit rural areas, the remaining 36% are from towns and cities in the Podkarpackie province.

An original, self-administered survey questionnaire was used to collect data. The questionnaire comprised 31 questions on 4 pages (nineteen closed-ended questions and twelve semi-open-ended questions were phrased in order to obtain answers to the research problems. Some of the questions aimed to de-

termine the family situation, assess students' school achievements and their educational aspirations, determine out-of-school activities, ways of spending free time, hobbies and attitudes to certain values (love, freedom, family, faith, health, friendship, work, study). Questions on using illegal and legal drugs (cigarettes, alcohol, marijuana and other drugs) and associated frequencies were also included. Two questions were posed aiming to determine youths' attitudes towards illegal drugs: (Do you think illegal drugs are safe? What is your opinion on legalizing marijuana?). Demographic questions were also asked (about sex, age, residential address). Instructions with information on how to answer were printed next to the questions. Data collected from respondents were correlated to determine relationships between variables. A pilot was carried out to verify the research tool prior to carrying out research proper.

As already mentioned, this article presents the relationships identified between the musical preferences indicated by youth and their attitudes towards psychoactive substances, as well as their use. In all 103 randomly selected forms the research was carried out solely by a researcher, without a teacher in attendance, which required consents to be obtained from headmasters of these schools. Through these respondents were to feel more secure. At the outset, students were made aware that the research is anonymous and that participation is voluntary. No one refused to take part. After a short introduction, the researcher would hand out questionnaires which would then be collected once completed. In most cases research in two forms could be completed during a single lesson. Respondents were eager to take part and did not report any difficulties associated with completing the form. Following a review of the collected empirical data, 2273 correctly completed questionnaires were qualified for statistical analyses. All incomplete were rejected.

Data were coded and analyzed using IBM SPSS Statistic 20, the statistical significance of relationships between variables was determined using the chi-square test, and the strength of the relationships identified was determined using Cramer's V and the Gamma coefficient. p -values ≤ 0.001 were assumed to be statistically significant. A pilot study was conducted before the full-scale research to verify the research tool.

Subcarpathian Voivodeship is in the south-eastern part of Poland. Some researchers consider this part of Poland as a region with a high rate of religiosity when compared to other Polish provinces and as a region with preserved traditional customs, per which interpersonal ties are of great prominence (28).

Results

The empirical data confirms that among the youth surveyed, the use of drugs is not a marginal phenomenon. Use of marijuana was indicated by 675 respondents (30%), use of other illegal drugs by 202

(9%), use of tobacco by 511 (23%), and use of alcohol by 1,468 (65%). In total, 712 persons (31% - nearly a third) indicated the use of illegal drugs at some point in their lives. In this work, marijuana and other illegal drugs are treated separately due to a clear distinction by students themselves (this was revealed in the pilot study). "Other illegal drugs" indicated by students are mostly amphetamine, ecstasy, mephedrone and other NPS. They also confirm the use of cocaine, heroin, LSD and other hallucinogenic substances. In the question about the frequency of using these illegal drugs, only 2% of high school students indicated regular use.

Boys (70%) were more likely to indicate alcohol consumption than girls (60%), similar to marijuana use (boys: 37%, girls: 24%) as well as other illegal drugs (boys: 11%, girls: 7%). The likelihood of legal and illegal drug use would increase together with the respondents' age; most students confirmed smoking tobacco, consuming alcohol and using marijuana as well as other illegal drugs in the oldest age group. Students residing in towns and villages centage returned similar results within the scope of alcohol consumption (town: 67%, village: 63%). Use of illegal drugs was more widespread amongst those residing in towns (38%) than villages (28%).

In order to obtain answers to the research questions, within the scope of the questionnaire, the respondents were asked to provide their favorite music genres. As this was an open-ended question and the subjects were not limited by multiple-choice answers, a few dozen or so (more than 60) music genres were obtained. Some wrote down one favorite style, however, most provided between a few and even up to a dozen or so genres. In conjunction with the difficulty of carrying out such an extensive and meaningful statistical analyses, the provided genres were grouped.

Available scientific publications, cited in this paper, which sought to identify relationships between a given music style and drug use (8-19, 29) were considered whilst grouping music genres. With reference to

the aforementioned articles, two music categories were established: "neutral music" (no identified relationships with drug use) and "drug music" (identified relationships with drug use). The music genres indicated by youths were grouped thus. A third category was also established to cater to those who listened to music from both above groups ("both").

It must be noted that these categorizations have been construed solely for this analysis. To formulate such categories, research reports and review articles that identified or indicated a relationship between musical preference and the use of legal and illegal were considered. Table 1 shows the categorization of students' preferred musical genres.

Responses ordered in this manner show that 42% of respondents listed to "neutral music", 43% returned answers classified as "neutral music" and "drug music" whereas 15% confirm listening to solely "drug music" genres.

Next, the relationship between these categories and views on illegal drugs was determined using two variables: perception of the safety of drug use; and opinions on the legalization of marijuana. 21% of respondents indicated that illegal drugs are safe. This was most often concerning marijuana, but also amphetamines, LSD, mushrooms, hallucinogens, ecstasy and NPS (Novel Psychoactive Substances) in "small," "good," or "reasonable" quantities. 41% of respondents supported the legalization of marijuana. The data is sorted according to the categorization of musical preferences in Table 2.

Only 13% of respondents with preferences for "neutral" genres of music described illegal drugs as safe. This was true of 23% with preferences for "both" (nearly one-fourth), and 37% with preferences for "drug music" genres (Chi-Square = 88.816; $p \leq 0.001$; Cramer's $V = 0.203$). Similar correlations were found between views on the legalization of marijuana and the musical preferences of young people. Among fans of "neutral" genres, 28% of respondents supported the legalization of marijuana; among fans of "both," this figure was nearly half higher (47%);

Table 1. The categorization of preferred musical genres.

Neutral Music	Drug Music
blues, swing, Korean pop, highlander music, rock, folk, religious, disco polo, patriotic, orchestra, jazz, soul, classical, party music, disco, soundtracks, relaxing, sung poetry, pop, Latino, twist, instrumental, rock 'n' roll, country, Celtic, ethnic, Serbian pop, retro, candy music	underground, psycho rap, ska, reggae, trance, grunge, hands up, hip-hop, dubstep, bass, house, rave, punk, industrial rock, electro, techno, metal, Eurobeat, drop, dancehall, new age, Frenchcore, raga, R&B, funky, gangsta rap, energy, drum 'n' bass, progressive house, psycho-trans, future house, hard rock, deep house, alternative, chillout, rapcore, gothic

Table 2. Category of music/views on illegal drugs.

Category of Music	Neutral Music	Both	Drug Music
View on illegal drugs			
	They are safe	13%	23%
	For legalization of marijuana	28%	47%

among fans of “drug music” genres, it was nearly two-thirds (63%) (Chi-Square = 142.112; $p \leq 0.001$; Cramer’s $V = 0.257$).

The relationship between adolescents’ musical preferences and their use of drugs was also analyzed. The data are presented in Table 3.

Analysis of the empirical data indicated that there are statistically significant relationships between preferences for certain musical genres and drug use: Chi-Square = 177.182; $p \leq 0.001$; Cramer’s $V = 0.286$. The lowest indication use of illegal drugs was found among respondents whose musical preferences were “neutral” (18%); a higher percentage was found among fans of “both” categories of music (37%); and the highest among fans of “drug music” (55%).

Furthermore, the respondents’ indications of individual drug use (cigarettes, alcohol, marijuana, and other illegal drugs) were analyzed according to the categories. As can be seen in Table 4, indications of the use of individual legal and illegal drugs are markedly higher among fans of “drug music”, where the highest rates are among fans of exclusively those type of music (mostly: hip-hop, reggae, trance, metal, punk, rap, industrial, rave, and house).

Analysis of the empirical data revealed statistically significant relationships between variables. Because the respondents had the opportunity to indicate their frequency of use of alcohol, marijuana, and other illegal drugs, the Gamma coefficient was used to measure the strength of relationships between variables (on ordinal scales). The values obtained for this coefficient show that the associations are moderate, especially between musical preference and use of marijuana (Gamma=0.481) and other illegal drugs (Gamma=0.429).

Taking into account the conclusions of other re-

searchers who emphasize the link between environment and initiation of drug use among youth (30), the relationship between these two factors were also analyzed. One question asked respondents to indicate whether others in their peer group use drugs. 60% answered affirmatively. The data is sorted according to the categorization of musical preferences in Table 5.

Statistical analysis revealed that students with preferences for “drug music” significantly more often indicated direct relations with users of illegal drugs: Chi-Square = 50.900; $p \leq 0.001$; Cramer’s $V = 0.153$. The relationship is weak, but the data are statistically significant, so we can assume that fans of “drug music” often observe the use of the illegal drug among their peers. Statistical analysis revealed that students who confirm drug use among their peers indicated the use themselves significantly more often (44%) than those who did not report drug use among their peers (13%).

Comparing the music type which a given respondent listened to with the frequency of their interactions with parents proved interesting. The survey questionnaire handed out to students included the following question: Do you talk about your things to your parents? 13% of respondents marked “always”, 48% - “yes, but not about everything”, 26% - “only when they ask” and 13% - “we do not talk”. Table 6 depicts the data juxtaposed with music genre categories.

Statistical research analysis results have shown that there are statistically significant relationships between the decreasing frequency of conversations with parents and the preferred type of music. Most respondents who indicate daily conversations with parents listen to “neutral music”. Together with decreasing conversations with parents, the percentage

Table 3. Category of music/illegal drug use.

Category of Music	Neutral Music			
	Both	Drug Music	Both	Drug Music
Illegal drug use	Yes	18%	37%	55%
	No	82%	63%	45%

Table 4. Category of music/use of drugs.

Category of music		Neutral Music	Both	Drug Music
Use of Drugs	Cigarettes	14%	20%	36%
	Alcohol	55%	71%	75%
	Marijuana	16%	35%	53%
	Other illegal drug	4%	11%	16%

Table 5. Category of music/illegal drug use among peers.

Category of music	Neutral Music			
	Both	Drug Music	Both	Drug Music
Illegal drug use among peers	Yes	52%	63%	74%
	No	48%	37%	26%

Table 6. Frequency of conversations with parents/category of music.

Frequency of Conversations		Always	Yes, but not about everything	Only when they ask	We do not talk
Category of music	Neutral music	49%	43%	38%	34%
	Both	39%	44%	43%	45%
	Drug music	12%	13%	19%	21%
	Total	100%	100%	100%	100%

of individuals indicating listening to music from this group also decreases. At the same time, respondents who indicated that they do not talk to parents were most likely to listen to “drug music”.

The measure of association is weak; however, data is statistically significant ($p \leq 0.001$). Therefore, it would be worthwhile to take a closer look at the dependencies which occur here. This has been done in the section discussing the results.

Discussion

Based on the data presented, we can assume that the views of youth on legal and illegal drugs are correlated with their musical preferences. Fans of “drug music” view drugs as safe significantly more often than those of “neutral music”. They also more often support the legalization of marijuana, and significantly more often confirm the use of both legal and illegal drugs.

Many Authors have identified relationships between musical preference and drug use. Research conducted among Canadians at a rave party and clubgoers in Philadelphia, Helsinki, and the Indian beaches of Goa revealed that drug use is widespread in such environments (8, 14, 18, 31). Some researchers have discovered correlations between preferences for reggae (13), as well as other genres of music (especially hip-hop, metal, and rap), and negative patterns of adolescent behavior (32, 33).

A study conducted among students in California found that musical preferences, especially for punk, heavy metal, reggae, and rap, correlate with higher instances of use of alcohol, marijuana, and other illegal drugs. Clear relationships were also found between the use of drugs and preferences for club music such as R&B and techno, which have no lyrics (9). In research carried out in Flanders (Belgium) by Tina Van Havere et al. (34) amongst trance music club goers (19 in-depth interviews), respondents admitted that use of illegal drugs (cocaine, marijuana, mescaline, ayahuasca, LSD, heroin and others) at such venues is commonplace. Researchers also identified noteworthy strategies for reducing possible harm used by these partygoers. The first was solidarity - event participants, especially those consuming large amounts of alcohol and illegal drugs, would look after each other. The second strategy entailed

controlled use of psychoactive substances: individuals with significant experience in using and combining them would be in charge. Research Authors stated that the use of illegal drugs during raves and in the public. Quantitative research carried out by the same Author et al. (35) amongst those attending the most popular clubs dance events and rock festivals in Belgium determined that those who prefer dance clubs were more likely to use of alcohol as well as illegal drugs than those who prefer rock music and attend rock festivals. The Authors pointed out the need to appropriately address prevention efforts to individuals who prefer night clubs and who are twice as likely to use drugs than the other respondents.

The use of legal and illegal drugs and rave-goers mixing various substances does not necessarily have to be a permanent, pathological behavior which would exclude from social life. In research carried out in San Francisco amongst electronic music events participants, it was found that many uses these substances at the end of the week for recreational purposes during dance events. Apart from having fun use of various drugs and mixing thereof was motivated by the desire to extend the recreational effects of these substances, the need to bolster psychoactive effects or the need to quench these experiences before returning to their everyday lives (36). Mixing two illegal drugs was also observed amongst participants of large music events in Australia (37).

A quarter-century earlier, Clyde W. Dent and associates (38) noted that musical preference is a weak diagnostic indicator of pro-narcotic activity and recommended using more reliable methods for identifying the determinants of drug use. Nearly three decades later, it is worth exploring whether their postulates are still valid.

In the case of this study, contact with drug users varied according to respondents’ musical preference. These data also allow for the possibility that musical choice may not be the cause or the sole cause of positive views on psychoactive substances. The results of this study correspond with those of similar studies conducted among youth. Studies on adolescents in the Netherlands (39) found that, aside from musical preference, relations with peers play an essential role in determining individual drug use. Music may promote the use of drugs, but equally important in deciding personal use is whether the fans of given

genres associate with a peer group whose patterns of consumption of drugs increase their inclinations for use. Indeed, drug use may be implied by the “party culture” of specific musical genres.

Marcin Szulc (40) holds a similar position, namely that drug use among adolescents may be more related to the lifestyle that characterizes the environment they identify with, rather than just musical preference. For adolescents, music is a form of identification that ensures cohesion within a group or group culture. It is a collection of shared beliefs and states of mind that guarantees identification with others - especially peers (30) - whose opinions often count more than those of parents or caretakers, at this status of social development.

Conclusions of research carried out amongst 1,772 participants of a music festival in Roskilde, Denmark seems to confirm the above assumptions. More than 9% of sample subjects confirmed marijuana initiation whereas 30% of those who do not use that drug admitted to using it again. The first use of illegal drugs (amphetamine, ketamine, cocaine, and MDMA) was reported by less than 0.5%, however, 10% of those who refrain from using those substances reported returning to the use thereof. Individuals trying marijuana for the first time were much younger than those who do not smoke. According to research Authors, large music festivals may be an important drug initiation stage for youths (41).

During the last decade of the 20th-century medical personnel and doctors were already reporting individuals with ethanol and illegal drugs poisoning turning up at stadium first aid points during rock stadium rock concerts (42). In research carried out amongst participants of the Peninsula Music Festival in Romania (n=256), 17% of respondents admitted to using marijuana, 20% - NPS, 5% - amphetamine, 5% - ecstasy. These figures were many times higher than drug use figures for 15-34-year old in the general population of that country: marijuana - 0.6%, NPS - 2%, amphetamine - 0, ecstasy - 0.4% (43).

A cross-sectional analysis of teenage participants at a music festival in Australia (n=1365) showed that more than half of the respondents used illegal drugs at least once in their lives and 25% did so during the last month (44). Niamh Day et al. (45) carried out similar research in 2016 also amongst Australian music festival goers (n=642). According to researchers, as many as 73% of this group confirmed using illegal drugs. These results are three times as high as those for young adult residents of Australia (between 20 and 29 years old), where 28% indicated using drugs.

Relationships between participation in large music events and the use of illegal drugs may be found in the presented research. Individuals using these substances constitute a large part of the populations attending events of this type.

Authors of research conducted amongst youths identify a number of variables which affect attitudes towards psychoactive substances and their use, how-

ever almost all point to the key role played by the family in which a child grows up and the relations between its members. A report published in 2003 by the National Institute on Drug Abuse (46), indicates the following risk factors which might lead in the initiation and the persistence of drug use: low economic status, problematic relations with parents, peer pressure and genetic risk addiction. Shanta Dube et al. (47) have determined that adverse childhood experiences (ACEs), and in particular violence, neglect, growing up in a dysfunctional family (addictions, crime, psychological diseases, conflicts between parents) are also significant predictors of drug initiations. These researchers also determined that as ACEs increase, so does the probability of reaching for drugs before the age of 14.

Authors of many scientific publications emphasize the role of the family and the relations between its members as drug initiation risk or protective factors. Closer bonds between parents and child, lack of family dysfunctions and correctly exercised control over a child's behaviors reduce the probability of inappropriate activities, which include drug initiations. Whereas lack of bonds, too excessive or insufficient parental control, conflicts amongst and inappropriate behaviors by family members are variables which might be conducive to such behaviors (48-50). Researchers also emphasize the significance of the peer environment when it comes to copying behaviors observed in a peer group (51-53).

Research carried out amongst Polish adolescents showed that their behaviors are to a large extent dependent on the frequency and quality of relations with parents; how much attention they pay to the child, parental support, acceptance as well as supervision over out-of-school activities and those engaged in outside of the home. The interest shown by parents in a child's contacts with other adolescents, knowledge about their peer group as well as strengthening and in particular observing the rules applicable to using legal and illegal drugs also turned out to be important (54).

Thus, it is possible that family determinants (depending on quality) constitute the main factors which may be facilitative or protective against risky behaviors. For subjects of research described in this article, one may also presume that music plays an indirect role in shaping attitudes towards drugs and their use, whereas the primary factor may be the relations between parents and child. Not all respondents who indicate listening to “drug music” used illegal drugs, whilst at the same time, some people who indicated using these substances were in the “neutral music” group. Data presented in Table 6 suggests the significant importance of regular conversations between parents and children which help parents to gain a more in-depth understanding of how a child functions and of the child's problems, strengthen family bonds and primarily strengthen the child's sense of parental interest in and control over its matters.

Conclusions

The title of this work is more intended to incite further exploration of the relationship between music, drug use, and the environment of adolescents than stigmatize certain musical genres as “unsafe”. It should be emphasized that not all respondents with preferences for “drug music” indicated drug use and that not all respondents with preferences for “neutral music” denied drug use. However, the results obtained suggest that these relationships should be taken seriously.

Conclusions analogous to conclusions of research performed elsewhere in the world indicate the need to adopt an adequate drugs policy, where correctly planned preventative actions implemented by qualified staff may play a significant role. The obtained data point to similar causes for the use of psychoactive substances by youths around the world:

- Youths who prefer “drug music” are more likely to consider illegal drugs to be safe and are more likely to be in favor of legalizing marijuana.
- Youths who prefer “drug music” are more likely to state that individuals who use illegal drugs are part of their peer group.
- Youths who report infrequent or no such conversations with parents are more likely to listen to “drug music”.
- There are relationships between listening to “drug music” and the use of legal and illegal drugs.

The postulated solutions protecting a child against drug initiation entails introducing into the scope of social policies actions addressed to parents during which they should be presented with factors favoring use of illegal drugs - both within and outside of the family, the need to talk to a child on a daily basis should be pointed out as an important protective factor as well as exercising unobtrusive parental control over a child, which will at the same time acts as a sign that parents are interested and care. It also seems important to introduce actions which strengthen a child’s resources and its self-esteem. It is also important to prepare a child to critically look at pop culture content which presents a liberal attitude to illegal drugs or even encourages enjoying the properties of these substances. According to the Authors, the results of the presented research may be used to build a prevention strategy both in Poland as well as other regions of the world.

Contribution of Authors

Marek Motyka: Conceptualization, methodology, and formal analysis;

Ahmed Al-Imam: writing, reviewing, editing, and correspondence with the journal.

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Conflicts of interest

The Authors declare no conflict of interest.

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