sciendo 10.2478/sjph-2023-0018 Zdr Varst. 2023;62(3):129-136

Gabrovec B, Crnkovič N, Vrdelja M, Cesar K, Selak Š. Is trust in information sources associated with drug use? A population-based study.
Zdr Varst. 2023;62(3):129-136. doi: 10.2478/Sjph-2023-0018.

IS TRUST IN INFORMATION SOURCES ASSOCIATED WITH DRUG USE? A POPULATION-BASED STUDY

ALI JE ZAUPANJE V VIRE INFORMACIJ POVEZANO Z UPORABO DROG? POPULACIJSKA ŠTUDIJA

Branko GABROVEC [1*], Nuša CRNKOVIČ [1], Mitja VRDELJA [1], Katarina CESAR [1], Špela SELAK [1]

[1] National Institute of Public Health, Trubarjeva cesta 2, 1000 Ljubljana, Slovenia

Received: Jan 9, 2023
Accepted: Apr 19, 2023

Original scientific article

ABSTRACT

Aim: Communication and information sources can play an important role when addressing drug use. The aim of this study is to assess the association of different levels of trust in information sources regarding drug use within different population groups.

Methods: Data was gathered using a mixed methods approach, with an online survey and interviews. A structured questionnaire was designed for data collection using the methodology of the European Monitoring Centre for Drugs and Drug Addiction, with additional items measuring trust in the information sources.

Results: In total 9,161 inhabitants of Slovenia aged 15-64 years and living in the private households completed the survey as part of this non-experimental quantitative study (response rate: 57%). A total of 20.7% of the participants reported having used cannabis or hashish at least once in their lives, 2.5% cocaine/crack cocaine and 0.4% heroin. Mean age of the first cannabis/hashish use was 19.59 years, cocaine/crack cocaine 22.73 years and heroin 20.63 years. The participants most value and trust the information sources regarding tobacco, alcohol and illicit drugs if it comes from healthcare workers or immediate family and other relatives, and put the least trust in the internet and television.

Conclusions: The data show that drug users have less trust in the given information sources compared to the whole sample. The present research serves as evidence for development and implementation of targeted interventions, including communication activities and tools.

Keywords:
Trust
Information sources
Drug use
Online surveys
Interviews

IZVLEČEK

Namen: *Komunikacija in viri informacij lahko igrajo pomembno vlogo pri naslavljanju uporabe drog med prebivalci. Namen te študije je bil oceniti povezanost različnih stopenj zaupanja z viri informacij, navezujoč se na uporabo drog med različnimi populacijskimi skupinami.*

Metode: *Podatki so bili zbrani na podlagi uporabe različnih metod: spletne raziskave in intervjujev. Za zbiranje podatkov po metodologiji Evropskega centra za spremljanje drog in zasvojenosti z drogami je bil oblikovan strukturiran anketni vprašalnik z dodatnimi postavkami, ki merijo zaupanje v vire informacij.*

Rezultati: *Anketo je izpolnilo 9.161 v zasebnem gospodinjstvu živečih prebivalcev Slovenije, starih med 15 in 64 let. Šlo je za neeksperimentalno kvantitativno raziskavo (stopnja odziva: 57 %). 20,7 % sodelujočih v raziskavi je vsaj enkrat v življenju konzumiralo konopljo/hašiš, 2,5 % kokain/crack kokain in 0,4 % heroin. Povprečna starost ob prvem konzumiranju konoplje/hašiša je bila 19,59 let, kokaina/crack kokaina 22,73 let in heroina 20,63 let. Sodelujoči najbolj cenijo in zaupajo virom informacij glede tobaka, alkohola in prepovedanih drog, kadar te pridobijo od zdravstvenih delavcev, družine ali sorodnikov, najmanj pa zaupajo virom, pridobljenim na internetu ali televiziji.*

Zaključki: *Podatki kažejo, da uporabniki drog manj zaupajo virom informacij v primerjavi s celotnim vzorcem. Pričujoča raziskava služi kot dokaz za razvoj in izvajanje ciljno usmerjenih intervencij, vključno s komunikacijskimi aktivnostmi in orodji.*

Ključne besede:
zaupanje
viri informacij
uporaba drog
spletne raziskave
intervjuji

***Correspondence:** branko.gabrovec@nijz.si

1 INTRODUCTION

According to the World Drug Report by the United Nations Office on Drugs and Crime, there are approximately 269 million people using drugs globally, representing a 30% increase since 2009 (1). A similar prevalence of illicit drug use was also observed in the European Union (EU), where approximately 96 million or 29% of adults (aged 15-64) are estimated to have used illicit drugs at least once in their lifetime (2). In 2018, the most used such substance in both the EU and worldwide was cannabis (54.6 million males and 35.7 million females in the EU, and 192 million people worldwide) (1, 2). Similarly, cannabis was found to be the most commonly used drug in Slovenia as well, with 20,7% of Slovenians reporting using it at least once, while a lower prevalence of using at least once was reported for ecstasy (2.9%), cocaine (2.6%), amphetamines (2.3%) and LSD (2.2%) (3).

In an attempt to design as effective prevention programs as possible, researchers have focused on establishing the risk and protective factors for substance use among young adults, with up to 72% of 27-year-olds reporting having used a drug at least once, and that higher levels of regular illicit drug use are found among males compared to females (21% compared to 12% respectively) (2, 4). Likewise, Slovenian data has also shown a 33.5% lifetime prevalence of illicit drug use among young adults aged 15 to 34 years, and a higher prevalence among men compared to women (3). Moreover, with the global increase in lifetime expectancy an increase in substance use among older adults (50 years and older) has been observed, cannabis being the most commonly used illicit drug in this age group, used by 13.9% of adults aged between 50 and 64 years, and 5.8% of 65-year-olds or older (5, 6).

However, although 75% of substance-use related injuries among young adults result in death, the mortality rates among older adults who use opioids exceeds the mortality rates of younger opioid users in the USA (7, 8). This is due to the associated biological changes occurring with age, which mean that there is an increased risk even with dosages that are considered as moderate for middle aged adults (9). Furthermore, researchers have found that growing up with a low socioeconomic status, using substances during adolescent years, having favourable attitudes towards drugs and being unemployed all represent a higher risk for drug use in young adulthood (7, 10, 11). Among older adults being closer to middle age, having lower than a college education and less financial security were identified as risk factors for drug use in a later stage of life (12–14). Furthermore, among older adults, while male gender is associated with a increased risk for cannabis use, women tend to have a greater risk of misusing prescription drugs (e.g. benzodiazepines) (13, 14).

In order to tackle a wide array risk factors for poor health behaviours, various campaigns have utilized the mass-media to disseminate their messages to a broad and diverse audience via television commercials, the radio, internet, newspapers, roadside advertising, and so on (15, 16). An example of successful mass-media campaigns are those that encourage people to stop or never start using tobacco, which have lead to a reduction in the number of young adults starting to smoke and increase in the number of adults that ceased using tobacco products (17, 18). Due to the high success of such mass-media campaigns, similar approaches have been utilized to promote other healthy behaviours, including aimed at deterring illicit drug use (19). However, such campaigns might not always deliver the anticipated behavioural changes, or may even have harmful effects. The results from a systematic review and meta-analysis (20) showed that most of the randomized control trials and observational studies evaluating the effectiveness of such mass-media campaigns found non-significant effects. Moreover, they reported several campaigns had an iatrogenic impact on the public, leading to an increased usage of drugs among the targeted populations (e.g. the first version of My Anti-Drug mass-media campaign by the Office of National Drug Control Policy and the Campuswide Alcohol and Drug Abuse Prevention Program) (15, 20).

A significant shift in information-sharing emerged with the increased access to and usage of new digital media (e.g. social media, web pages, location-based social mobile apps) enabling greater efficiency and coverage of health interventions. Yet wide coverage does not guarantee success, and it is crucial to produce “high-quality evidence-based content that engages with individual participants” (21). In a more recent study, a comparison of the level of trust in information shared online among college students in the USA and Israel showed that the internet was the most popular and trusted source of drug-related information. As such, health campaigns could utilize internet platforms (including social media) to disseminate anti-drug-use content, as there is an increased probability of the target population’s exposure to and acceptance of such messages (22).

Although in Slovenia mass-media communication is regulated by the Mass Media Act (Zmed) (23) of the Republic of Slovenia, no article in the legislation directly regulates the area of illicit drug reporting or implementation of mass-media campaigns for deterring illicit drug use. However, in 2014 Slovenia introduced a national strategy that aims to regulate the field of illicit drugs and that briefly addresses the importance of paying attention to the media and marketing agencies in order to ensure more responsible reporting in this context, with a focus on the promotion of health and a healthy lifestyle (24). What is more, the results of an analysis of Slovenian mass-media reports

(Drev, Sever in Kamin 2006) on illicit drugs conducted in 2006 indicate that, if taken together, most related media coverage is focused on illicit drug related crime and mortality (a total of 18%, at 14% and 4%, respectively), whereas 16.4% of such coverage addressed the topic of prevention (e.g. conducting preventive programmes in schools, collecting used needles, and so on). Moreover, the results also showed that the majority of the mass-media coverage was prompted by outside organisations, and most often was presented with a short and sensational form of writing, with in-depth analysis of the issue being very limited. Moreover, to the best of our knowledge there have been few national mass-media campaigns aiming to reduce illicit drug use in Slovenia, and their effects are generally unknown. For example, the national anti-drug-use media campaign Choose health because you appreciate yourself! (Slovenian: Izberite zdravje, ker se cenite!) was not evaluated in any manner (26).

Moreover, there has also not been any research conducted assessing the association of trust in media information with drug use. In addition, due to the shift in the public's perception of trust with regard to online information, additional research is needed in order to get a better insight in the effects of the internet on drug use. Therefore, the aim of the present study is to assess the different levels of trust with regard to information about drug use within different population groups. More specifically, we are interested in the level of trust in different information sources within the observed sample, and how it differs when controlling for age, gender, and drug use groups and types.

2 METHODS

2.1 Participants

In 2018, National Survey on the Use of Tobacco, Alcohol and Other Drugs was carried out in Slovenia. A total of 16,000 Slovenian inhabitants aged 15-64 years, living in private (not institutional) households were invited to participate. Eight thousand individuals were invited to participate in the spring of 2018, while the remaining 8,000 were invited to do so in the autumn cycle. The study sample was prepared by the Statistical Office of Slovenia, based on both regions and the central register of the population. Two-stage sampling was used, explicitly stratified by size and type of settlement and implicitly by statistical regions.

2.2 Measures

Data was gathered using a mixed methods approach (computer-assisted web interviewing, CAWI, and computer-assisted personal interviews, CAPI):

- Online survey with an open source application, 1KA (www.1ka.si), prepared and conducted by the National Institute of Public Health. Selected individuals were informed via the postal service with the letter including the access link and password to the survey.
- Interviews with selected individuals conducted by external collaborators. Interviews were supported with a computer-assisted interviewing (CAPI), using the same set of questions as in the online survey. Individuals that did not complete the online survey were included in interviews.

In total 9,161 participants (response rate: 57%) completed the survey (46.3% an online survey and 53.7% a personal interview), of which 46.6% were men and 53.4% were women. The mean age was 41.39 years (SD=14.139).

A non-experimental quantitative methodology was used. A structured questionnaire was designed for data collection using the methodology of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). Therefore, the results are comparable with other studies carried out within the European Union. Additionally, items measuring trust in the various information sources (newspapers, television, radio, brochures or booklets, internet, social media, friends, immediate family and relatives, healthcare workers) regarding tobacco, alcohol and illicit drugs were added, where participants answered the questions on a Likert scale from 1 to 6 (1= I strongly do not trust, to 6 = I completely trust).

2.3 Statistical analysis

Data was analysed using statistical software, IBM SPSS Version 21 (SPSS Inc., Chicago, IL, USA). Data distribution tests suggested the data was not normally distributed, hence further analyses were carried out using non-parametric statistical tests. The compiled data was processed by means of descriptive statistics, correlation analysis, factor analysis, the Kolmogorov-Smirnov test, Kruskal-Wallis test and Mann-Whitney U and Wilcoxon test. Cronbach's alpha, used to assess reliability, was 0.81. The level of statistical significance was set at a p-value of less than 0.05 ($p<0.05$).

3 RESULTS

The results show that 26.3% of the study participants personally know someone who uses illicit drugs. The participants were also asked about their own use of illicit drugs – 20.7% stated that they had used cannabis or hashish (in any form) at least once in their lives, and 5.9% in the last year. Additionally, 2.5% had tried cocaine or crack cocaine at least once, 0.8% in the last 12 months, and 0.4% had tried heroin at least once, 0.1% in the last 12 months. The mean age of the first cannabis or hashish use

was 19.59 years, cocaine or crack cocaine 22.73 years, and heroin 20.63 years.

When asked about trust in various information sources regarding tobacco, alcohol and illicit drugs, the participants gave the following responses: newspapers (M=3.72; SD=1.32), television (M=3.44; SD=1.06), radio (M=3.55; SD=1.17), brochures or booklets (M=3.67; SD=1.32), internet and web pages (M=3.41; SD=1.27), social media (M=3.53; SD=1.55), friends (M=3.72; SD=0.91), immediate family and relatives (M=3.99; SD=0.88), and healthcare workers (M=4.10; SD=0.90). According to these responses, the participants most value and trust such information if it comes from healthcare workers (4.10) and immediate family and relatives (3.99), and put the least trust in information from the internet and television.

As shown in Figure 1, there is a difference between the whole sample and the group of study participants that had used the above-mentioned illicit drugs, especially the group of participants reporting drug use in the past 12 months. As this group reported the least trust in the information sources, we have compared this group with the whole sample of participants with regard to trust in information sources about tobacco, alcohol and illicit drugs (shown in Table 1). The data show that those participants who had used drugs had less trust in the information sources compared to the whole sample, especially social media and the internet, with heroin users having the highest means.

Furthermore, and as shown in Table 2, we compared the level of trust in information sources between the study participants who had used heroin or cocaine at least once time and the participants who had never tried these substances.

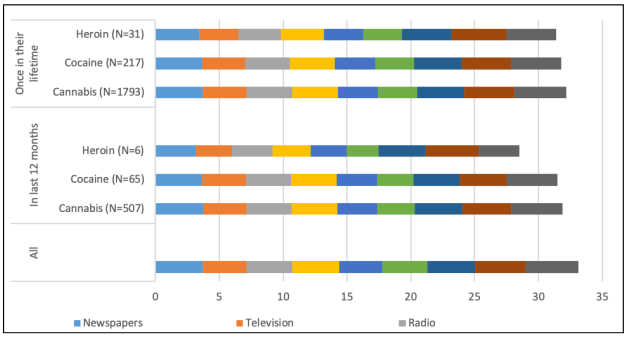

Figure 1. Trust in the information sources – comparison among all study participants and two drug use groups (use of cannabis, cocaine or heroin once in their life or in the past 12 months) on a scale of 1-6 (1 = I strongly do not trust, 6 = I completely trust).

The Mann-Whitney U-test was used to compare trust in information sources for users and non-users of cocaine (shown in Table 2). Statistically significant differences were found were found relating to the trust in information obtained via television (U=741466.000. z=-2.618, p=0.009), and trust in information provided by healthcare workers (U=853345.000. z=-2.014, p=0.044), which indicates that survey participants who had never tried cocaine have more trust in these information sources, as they have listed higher levels of trust in the majority of information sources. Furthermore, we compared trust in information sources for users and non-users of illicit drugs in general, but there were no statistically significant differences between the two groups.

Table 1. Trust in the information sources – comparison between all study participants and drug use group (use of cannabis, cocaine or heroin once in the past 12 months), reported means on a scale of 1-6 (1 = I strongly do not trust, 6 = I completely trust).

Trust in media	Cannabis N=505	Cocaine N=65	Heroin N=6	Whole sample N=8919
Newspapers	2.59	2.52	2.33	2.56
Television	2.33	2.38	2.17	2.40
Radio	2.48	2.45	2.33	2.47
Brochures, booklets	2.43	2.45	2.17	2.52
Internet	2.14	2.20	2.00	2.32
Social media	1.96	1.88	1.83	2.37
Friends	2.59	2.57	2.67	2.61
Immediate family and relatives	2.67	2.60	3.00	2.76
Healthcare workers	2.75	2.74	2.33	2.80

Table 2. Test statistics for trust in information sources for users and non-users of cocaine.

	Newspaper	Television	Radio	Brochures, Booklets	Internet	Social media	Friends	Immediate family and relatives	Healthcare workers
Mann-Whitney U	665052.500	741466.000	751532.000	679488.500	771673.000	629907.000	874529.500	845406.000	853345.000
Wilcoxon W	682443.500	761566.000	771035.000	698209.500	29058154.000	650410.000	35974160.500	868626.000	877216.000
z	-.214	-2.618	-.569	-.879	-1.698	-1.348	-1.429	-1.777	-2.014
Asymp. Sig. (2-tailed)	.831	.009	.569	.379	.089	.178	.153	.076	.044

There are differences regarding drug use between the genders, and the same is true regarding trust in the various information sources, as the level of trust is higher among women, and this is the case for all information sources (shown in Table 3).

Table 3. Trust in information sources by gender.

	Nw	Mw	SDw	Nm	Mm	SDm
Newspapers	4771	3.78	1.286	4148	3.65	1.371
Television	4773	3.51	1.025	4152	3.37	1.101
Radio	4740	3.62	1.146	4131	3.48	1.193
Brochures, booklets	4714	3.75	1.282	4104	3.58	1.372
Internet, web pages	4716	3.47	1.253	4114	3.34	1.300
Social media	4691	3.58	1.517	4092	3.48	1.605
Friends	4740	3.77	0.878	4130	3.67	0.949
Immediate family and relatives	4741	4.01	0.847	4139	3.96	0.921
Healthcare workers	4749	4.15	0.856	4150	4.05	0.946

Furthermore, we were interested in the level of trust in information sources and the age of the participants. Since the share of drug users is higher among the younger respondents, namely those aged 15 to 34 years, it makes sense to check which information sources they trust more and if there are any differences here with those aged 35 or older. The results show that the younger respondents trust newspapers, brochures, booklets and friends the most (Table 4), and compared to those aged 35 to 65 years they trust the majority of information sources (except newspapers and healthcare workers) less than the older group (shown in Table 5).

Table 4. Trust in information sources for age group 15-34 years.

	N	Mean	SD
Newspapers	2987	2.62	0.98
Television	2981	2.39	0.85
Radio	2975	2.46	0.89
Brochures, booklets	2959	2.50	0.94
Internet, web pages	2972	2.14	0.79
Social media	2975	2.02	0.87
Friends	2987	2.56	0.68
Immediate family and relatives	2981	2.71	0.60
Healthcare workers	2979	2.79	0.57

Table 5. Trust in information sources for younger and older age groups.

	N15-34	M15-34	SD15-34	N35-65	M35-65	SD35-65
Newspapers	2987	3.80	1.416	5932	3.68	1.280
Television	2981	3.42	1.156	5944	3.45	1.013
Radio	2975	3.54	1.242	5896	3.56	1.132
Brochures, booklets	2959	3.65	1.340	5859	3.68	1.321
Internet, web pages	2972	3.14	1.023	5858	3.55	1.368
Social media	2975	3.01	1.184	5808	3.80	1.656
Friends	2987	3.67	0.936	5883	3.75	0.900
Immediate family and relatives	2981	3.96	0.934	5899	4.00	0.855
Healthcare workers	2979	4.12	0.937	5920	4.09	0.881

4 DISCUSSION

Communication and information sources can play an important role when addressing drug use among the population. Therefore, assessing the association of different levels of trust with regard to information sources on drug use within different population groups is an important issue. When observing the levels of trust in different information sources among various age, gender and drug use groups we observed that participants value and trust most the information they receive about tobacco, alcohol and illicit drugs received from healthcare workers and immediate family and relatives, while they put the least trust in the internet and television. Participants reporting drug use in the past 12 months reported the least trust in the listed information sources about tobacco, alcohol and illicit drugs (newspapers, television, radio, brochures or booklets, internet, social media, friends, immediate family and relatives, healthcare workers), and have less trust in these sources compared to the whole sample, especially with regard to social media and the internet. This could indicate that more recent drug users tend to value information sources differently than other groups.

Furthermore, we can conclude that the survey participants that had never tried cocaine have more trust in healthcare workers as well and in television (which seems to be a specific for this group), and this group also reported higher levels of trust in the majority of information sources. While the results show more trust in the information sources by participants who had never used cocaine, the same could not be confirmed for the heroin users. This was due to the lack of statistically significant differences within the two groups, which might be due to a small sample size as only six participants reported having used heroin in the past 12 months. Although we live in a digital era and some results indicate the importance and potential of digital information sources related to drug use (22, 27), the levels of trust of digital information sources were, surprisingly, lower than for traditional media information sources or personal channels. Furthermore, a decline in trust in traditional mass media channels, such as radio and television, has been identified for health information, with high trust reported for interpersonal sources, like physicians (28). However, in order to balance the pros and cons before structuring multicomponent community health interventions, the intended audience's trust in all sources, both media (traditional and digital) and interpersonal, must be assessed (29).

The data show significant differences in drug use between gender and age groups, and the same is true for the level of trust in the given information sources, which might play an important role within the promotion of a healthy lifestyle and drug prevention activities. Specifically, while more men use drugs than women, the latter trust the information sources more than men. Furthermore, the results also showed that the younger participants had the most trust in printed media, such as newspapers, brochures and booklets, as well as their friends, since peer support systems are a significant information source among this age group. Since there has been a global fall in the usage of print media, especially among younger generations (30–32), this could lead to further decline in the reported levels of trust in information pertaining illicit drugs. What is more, not trusting certain information solely due to the form of delivery (i.e. print vs digital) could potentially contribute to an increase in illicit drug use among younger populations. Therefore, these results should prompt decision-makers, researchers and other professionals working with younger people to consider disseminating information related to illicit drug use in printed format.

Several communication activities are used to address the "most major public health issues, including a broad array of behavioural outcomes ranging from the initiation and maintenance of preventive health behaviours to the cessation of behaviours that increase the risk of negative health outcomes", such as reducing drug use (33). The results obtained in this study can therefore serve to help design and implement communication activities

to support public health intervention measures. More specifically, the results can serve as the basis to identify and define target audience segments (i.e. segments of people that will respond in a similar way) in order to maximize the effects of the delivered health messages, as well to identify the best communication channels and tools to be used. Often multiple communication channels are used, and these can complement media (television, radio) channels with personal ones (health professionals, outreach workers) (33). Thus, when designing public health responses aiming to promote health and prevent drug use, a special focus should be put on developing programmes and interventions targeting healthcare workers, as well as the immediate family and relatives of the target groups (34–38) when addressing the general public, and avoiding internet and television as well social media when addressing more recent drug users. On the other hand, more research is needed in order to better identify the best communication channels when addressing cocaine users. Furthermore, when designing programmes and interventions targeting health promotion and drug use prevention a special focus should be put on men as opposed to women. Moreover, as drug use is higher among younger people, a special focus should be put on this group by focusing on printed communication media and designing programmes and interventions aiming at empowering peer support systems (39–41).

Although the present study used a rigorous methodological procedure there are some weaknesses which might influence the results. While a mixed methods approach was used to maximize the response rate there can be potential drawbacks to this. Namely, the data obtained from individual interviews can be biased due to the effects external collaborators can have on the individuals being interviewed. Furthermore, some validity constraints of self-reported information and social desirability biases (i.e. the participants choosing more socially acceptable answers) can also occur, which can influence the reliability of the results thus gained.

5 CONCLUSION

The evidence regarding information sources and communication channels and tools regarding the field of drugs is scarce. Thus, the present research provided an insight into how different groups could potentially be differently impacted by using different information sources, and the results can therefore serve as evidence for the development and implementation of targeted interventions, including communication activities and tools. Future research should extend the present study by also exploring how the level of trust in information related to illicit drugs is influenced if delivered by different types of professionals – e.g. government officials, school workers, police officers, social workers, and experts with personal experience of the focal issues, as interpersonal relations were among the most trusted sources of health information.

ACKNOWLEDGEMENTS

The authors would like to thank the following employees of the National Institute of Public Health, namely, Darja Lavtar, Aleš Korošec and Maruša Rehberger, who undertook the initial data analyses.

CONFLICTS OF INTEREST

The authors report there are no competing interests or conflicts of interest to declare.

FUNDING

The authors state that this study was financed with internal funds of the National Institute of Public Health. No sponsor played a role in study design; in the collection, analysis and interpretation of data; in the writing of the report; or in the decision to submit the paper for publication.

ETHICAL APPROVAL

All participants were informed about various aspects of the study, including their rights to voluntarily participate and withdraw from it, and have given their written informed consent. Ethical approval to conduct the study was obtained from the National Medical Ethics Committee of the Republic of Slovenia (NMEC), No. 0120-48/2021/3.

AVAILABILITY OF DATA AND MATERIALS

The data and materials used in this study are available upon request. All data and materials used in this study were collected from publicly available sources.

REFERENCES

1. United Nations. World drug report 2020 [Internet]. 2020 [cited 2021 Apr 15]. Available from: https://wdr.unodc.org/wdr2020/index.html
2. European Monitoring Centre for Drugs and Drug Addiction. European drug report 2020: Trends and developments. Luxembourg: European Monitoring Centre for Drugs and Drug Addiction; 2020.
3. Drev A, Grom AH, Jandl M. Report on the drug situation 2019 of the Republic of Slovenia. Ljubljana: National Institute of Public Health; 2019.
4. Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. Monitoring the future: National results on adolescent drug use: Overview of key findings, 2009. National Institute on Drug Abuse [Internet]. 2010 [cited 2021 Apr 15]. Available from: http://www.drugabuse.gov

5. Fahmy V, Hatch SL, Hotopf M, Stewart R. Prevalences of illicit drug use in people aged 50 years and over from two surveys. Age Ageing. 2012;41(4):553-556. doi: 10.1093/ageing
6. Lipari RN, Park-Lee E. Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health. [Internet]. 2020 [cited 2021 Apr 15]. Available from: https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR1PDFW090120.pdf
7. Stone AL, Becker LG, Huber AM, Catalano RF. Review of risk and protective factors of substance use and problem use in emerging adulthood. Addict Behav. 2012;37(7):747-775. doi: 10.1016/j.addbeh.2012.02.014.
8. United Nations, Office on Drugs and Crime. World drug report 2018 [Internet]. 2018 [cited 2021 Apr 15]. Available from: https://www.unodc.org/wdr2018/prelaunch/WDR18_Booklet_1_EXSUM.pdf
9. Beynon CM. Drug use and ageing: Older people do take drugs! Age Ageing. 2009;38(1):8-10. doi: 10.1093/ageing/afn251.
10. Buu A, Dipiazza C, Wang J, Puttler LI, Fitzgerald HE, Zucker RA. Parent, family, and neighborhood effects on the development of child substance use and other psychopathology from preschool to the start of adulthood. J Stud Alcohol Drugs. 2009;70(4):489-498. doi: 10.15288/jsad.2009.70.489.
11. Jackson KM, Sher KJ, Schulenberg JE. Conjoint developmental trajectories of young adult alcohol and tobacco use. J Abnorm Psychol. 2005;114(4):612-626. doi: 10.1037/0021-843X.114.4.612.
12. Blazer DG, Wu LT. The epidemiology of at-risk and binge drinking among middle-aged and elderly community adults: National Survey on Drug Use and Health. Am J Psychiatry. 2009;166(10):1162-1169. doi: 10.1176/appi.ajp.2009.09010016.
13. Merrick EL, Horgan CM, Hodgkin D, Garnick DW, Houghton SF, Panas L, et al. Unhealthy drinking patterns in older adults: Prevalence and associated characteristics. J Am Geriatr Soc. 2008;56(2):214-223. doi: 10.1111/j.1532-5415.2007.01539.x.
14. Sacco P, Bucholz KK, Spitznagel EL. Alcohol use among older adults in the National Epidemiologic Survey on Alcohol and Related Conditions: A latent class analysis. J Stud Alcohol Drugs. 2009;70(6):829-838. doi: 10.15288/jsad.2009.70.829.
15. Allara E, Ferri M, Bo A, Gasparrini A, Faggiano F. Are mass-media campaigns effective in preventing drug use? A Cochrane systematic review and meta-analysis. BMJ Open. 2015;5(9):e007449. doi: 10.1136/bmjopen-2014-007449.
16. Wakefield MA, Loken B, Hornik RC. Use of mass media campaigns to change health behaviour. Lancet. 2010;376(9748):1261-1271. doi: 10.1016/S0140-6736(10)60809-4.
17. Blendon RJ, Young JT. The public and the war on illicit drugs. JAMA. 1998;279(11):827-832. doi: 10.1001/jama.279.11.827.
18. National Cancer Institut. The role of the media in promoting and reducing tobacco use [Internet]. 2020 [cited 2021 Apr 15]. Available from: https://cancercontrol.cancer.gov/sites/default/files/2020-08/m19_complete.pdf
19. Speaker SL. Demons for the twentieth century – the rhetoric of drug reform, 1920-1940. In: Tracy SW, Acker CJ, editors. Altering American consciousness: The history of alcohol and drug use in the United States, 1800-2000. Amherst: University of Massachusetts Press; 2004. p. 203–224.
20. Werb D, Mills EJ, Debeck K, Kerr T, Montaner JS, Wood E. The effectiveness of anti-illicit-drug public-service announcements: A systematic review and meta-analysis. J Epidemiol Community Health. 2011;65(10):834-840. doi: 10.1136/jech.2010.125195.
21. Wadham E, Green C, Debattista J, Somerset S, Sav A. New digital media interventions for sexual health promotion among young people: A systematic review. Sex Health. 2019;16(2):101-123. doi: 10.1071/SH18127.
22. Cheng Y, Ahn J, Lewis N, Martinez LS. A cross-comparative survey of information seeking and scanning about drug-related sources and topics among U.S. and Israeli college students. J Health Commun. 2017;22(8):692-701. doi: 10.1080/10810730.2017.1341567.
23. Zakon o medijih. Uradni list Republike Slovenije. 2001;110(06) [Internet]. [cited 2023 Apr 5]. Available from: http://pisrs.si/Pis.web/pregledPredpisa?id=ZAKO1608
24. Ministrstvo za zdravje Republike Slovenija. Nacionalni program na področju prepovedanih drog 2014-2020 [Internet]. 2017 [cited 2023 Apr 5]. Available from: https://www.infodroga.si/wp-content/uploads/2019/11/WEB-NP-DROGE-2014-2020.pdf
25. Drev A, Sever M, Kamin T. Prepovedane droge v slovenskih množočnih medijih. Zdr Varst. 2006;45(3):126-139.
26. Rebec A. Komunikacijske kampanje na Uradu za droge: Diplomsko delo [Internet]. 2008 [cited 2021 Apr 15]. Available from: https://repozitorij.uni-lj.si/IzpisGradiva.php?id=10864
27. Stetina BU, Jagsch R, Schramel C, Maman TL, Kryspin-Exner I. Exploring hidden populations: Recreational drug users. Cyberpsychology J Psychosoc Res Cybersp. 2008;2(1):4.
28. Thai CL, Gaysynsky A, Falisi A, Chou W-YS, Blake K, Hesse BW. Trust in health information sources and channels, then and now: Evidence from the health information national trends survey (2005–2013). In: Hale TM, Chou W-YS, Cotten SR, Khilnani A, editors. eHealth: Current evidence, promises, perils and future directions (studies in media and communications). Bingley: Emerald Publishing; 2018. p. 43–67.
29. Brown-Johnson C, Boeckman L, White A, Burbank A, Paulson S, Beebe L. Trust in health information sources: Survey analysis of variation by sociodemographic and tobacco use status in Oklahoma. JMIR Public Health Surveill. 2018;4(1):e8. doi: 10.2196/publichealth.6260.
30. Chen H. Research on the development from print media to digital media - taking the American market as an example. In: Proc 2022 Int Conf Compr Art Cult Commun (CACC 2022);663:327-331 [Internet]. 2022 [cited 2023 Apr 5]. Available from: https://www.atlantis-press.com/proceedings/cacc-22/125974257
31. Kalombe C, Phiri J. Impact of online media on print media in developing countries. Open J Bus Manag. 2019;7(7):1983-1998.
32. Lin Y, Ahmad Z, Shafik W, Khosa SK, Almaspoor Z, Alsuhabi H, et al. Impact of Facebook and newspaper advertising on sales: A comparative study of online and print media. Comput Intell Neurosci. 2021:5995008. doi: 10.1155/2021/5995008.
33. Institute of Medicine (US) Committee on Communication for Behavior Change in the 21st Century. Improving the health of diverse populations: Health communication campaigns exemplar. In: Speaking of health: Assessing health communication strategies for diverse populations. Washington (DC): National Academies Press; 2002. p. 3.
34. Akram Y, Copello A, Moore D. Family-based interventions for substance misuse: A systematic review of systematic reviews-protocol. Syst Rev. 2014;3:90. doi: 10.1186/2046-4053-3-90.
35. Dusenbury L. Family-based drug abuse prevention programs: A review. J Prim Prev. 2000;20(4):337-352. doi: 10.1023/A:1021366721649.
36. National Institute of Drug Abuse. What role can medical professionals play in addressing substance abuse (including abuse of prescription drugs) among adolescents? Gaithersburg: National Institute of Drug Abuse; 2020.
37. Nelson J, Bundoc-Baronia R, Comiskey G, McGovern TF. Facing addiction in America: The Surgeon general's report on alcohol, drugs, and health: A commentary. Alcohol Treat Q. 2017;35(4):445-454.
38. Sanders MR. Community-based parenting and family support interventions and the prevention of drug abuse. Addict Behav. 2000;25(6):929-942. doi: 10.1016/s0306-4603(00)00128-3.
39. Das JK, Salam RA, Arshad A, Finkelstein Y, Bhutta ZA. Interventions for adolescent substance abuse: An overview of systematic reviews. J Adolesc Health. 2016;59(4S):S61-S75. doi: 10.1016/j.jadohealth.2016.06.021.
40. Griffin KW, Botvin GJ. Evidence-based interventions for preventing substance use disorders in adolescents. Child Adolesc Psychiatr Clin N Am. 2010;19(3):505-526. doi: 10.1016/j.chc.2010.03.005.
41. United Nations Office on Drugs and Crime. Peer to peer: Using peer to peer strategies in drug abuse prevention [Internet]. 2003 [cited 2021 Apr 15]. Available from: https://www.unodc.org/pdf/youthnet/handbook_peer_english.pdf