

# EXTENT OF SPENDING LEISURE TIME THROUGH THE ELECTRONIC MEDIA AND DRUG BEHAVIOUR OF YOUTH

Zuzana ROJKOVÁ – Kristína MYDLOVÁ



Mgr. et Bc. Zuzana Rojková, PhD.  
Department of Psychology  
Faculty of Arts  
University of SS. Cyril and Methodius in Trnava  
Námestie Jozefa Herdu 2  
917 01 Trnava  
Slovak Republic  
zuzana.rojkova@ucm.sk

Zuzana Rojková holds a PhD. in Pedagogical Counselling and School Psychology obtained at the Constantine the Philosopher University in Nitra. Since 2012, she has been an Assistant Professor at the Department of Psychology (Faculty of Arts, UCM in Trnava). Her pedagogical profile includes methodological and statistical courses. As a scholar, she is interested in the fields of drug behaviour research (especially in relation to adolescents), music psychology, and the exploration of media influence. She is the author or co-author of two scientific monographs on the concept of situation-motivational alcohol behaviour factors and methodology for their measurement.



Mgr. Kristína Mydlová  
Department of Psychology  
Faculty of Arts  
University of SS. Cyril and Methodius in Trnava  
Námestie Jozefa Herdu 2  
917 01 Trnava  
Slovak Republic  
kikimydlova@gmail.com

Kristína Mydlová is a postgraduate student (PhD.) at the Department of Psychology, Faculty of Arts, UCM in Trnava, in the study programme General and Experimental Psychology. She has a Master's degree in General Psychology. Her research interests include binge drinking and its effects on risky sexual behaviour of adolescents. She is currently working on the topic of risk behaviour of adolescents, creating a typology of adolescent risk behaviour within the international project SAHA (*The Social and Health Assessment*). She works as a volunteer in a non-profit organisation helping adolescents with risky behaviour, as well as depressed and autistic clients.

## ABSTRACT:

The study deals with the issue of the influence of mass media on the behaviour of youth. Specifically, it is about the extent of leisure time spent using electronic media in relation to drug behaviour (alcohol consumption, cigarettes, marijuana, illicit drug use). It is an exploratory, correlational, non-experimental research. The sample consisted of 2,133 elementary and secondary school pupils (39.6% of them were boys and 60.4% girls). The data was obtained through the SAHA questionnaire (i.e. The International Social and Health Assessment, originally proposed by Weissberg et al. in 1991). Relations were examined in two age groups – “14” ( $\leq 15$  years,  $n = 743$ ) and “16” ( $\geq 16$  years,  $n = 1,390$ ). The results show a weak, but statistically significant correlation between time spent with electronic media, especially on the Internet and all forms of drug behaviour except illegal drug use, to a larger extent in the older age group.

## KEY WORDS:

adolescence, digital media, drug behaviour, electronic media, leisure activities

## Introduction

The period of adolescence is a challenge for everyone in many areas of life. In addition to the physiological, psychological, emotional and relationship changes of adolescents, a significant part of the interest is focused on risk behaviour and aspects of leisure time. Risk behaviour, the occurrence and consequences of which are a great socio-economic problem, is drug behaviour. Despite the efforts of experts to reduce the use of alcohol, smoking, or the use of illicit drugs through prevention, the prevalence of these forms in youth is not declining globally.<sup>1</sup> Therefore, it is necessary to examine this issue in various contexts and to find risky or protective factors. Many researches focusing on the risk factors of drug behaviour include personality, family, motivation or school factors;<sup>2</sup> however, less attention is

1 See: NOCIAR, A.: *Európsky školský prieskum o alkohole a iných drogách (ESPAD) v SR za rok 2015. Záverečná správa*. Bratislava: VÚDPaP, 2015.

2 For more information about risk factors of drug behaviour, including personality, family, motivation or school factors, see: NEWCOMB, M. D. et al.: Risk Factors for Drug Use among Adolescents: Concurrent and Longitudinal Analyses. In *American Journal of Public Health*, 1986. Vol. 76, No. 5, p. 525-531. [online]. [2018-06-20]. Available at: <<http://ajph.aphapublications.org/doi/>

paid to the aspect of leisure time. And rightly, free time provides opportunities to develop personality, identity (artistic, sporting, educational activities), and to strengthen relationships with parents, that are in adolescence often problematic, because of non-involvement and unsatisfactory communication.<sup>3</sup> Both variants, ways of spending time are considered by professionals to be protective, preventive factors.<sup>4</sup> Furthermore, we recognise the category of leisure time in the peer group, in which the risk is defined in the sense that group influence is one of the situation-motivational factors of drug use.<sup>5</sup> Kocová brought the negative findings about spontaneity and non-organisation of free time activities without aims, individually or with peers, especially outdoor, on the streets.<sup>6</sup> Adolescents thus spend time in an inappropriate way and are exposed to external influences and risks. And finally, we encounter passive leisure time spending that links to the topic of this study. These are activities that do not require physical activity, movement, relocation, or creative and cognitive activity. It is reception of media broadcasting (TV, radio), music, Internet use and playing digital games, in particular. It can be said that passive leisure time has grown considerably with the wider reach of television to the general public. As early as in the 1990s, experts highlighted negative consequences of electronic media for the emotional experience, behaviour and health of children and youth. Since then we have seen an increase in Internet use in Slovakia, which has brought new phenomena and associated risks. Relating to television broadcasting, the research has mainly verified the influence of violent media content on individual's behaviour and experiencing<sup>7</sup> by means of imitation, cognitive priming and desensitisation. Similarly, playing digital games is also being examined, since certain genres/types can lead to acquisition of aggressive patterns of behaviour or anxiety and neurotic symptomatology.<sup>8</sup>

In terms of Internet use, research focuses on personality, identity<sup>9</sup> and changes in social behaviour<sup>10</sup> including communication.<sup>11</sup> We agree with experts<sup>12</sup> that passivity itself is an essential element of risk for the development of secondary problems. The most frequent negative impacts of media on children and youth<sup>13</sup>

include: disturbance of attention; reduction of speech to simple expression; watching inappropriate programs under the influence of a peer group; distortion of the world image (e.g. cartoons of childhood) which causes deviations in identity development; health consequences of excessive time spent using media. The issues of time, frequency and the position that media have in the life of a young person, are mostly examined in terms of sleep disorders, experience of anxiety, fear, learning disorders, perceptions. However, experts emphasise that a direct effect is not proven (and cannot be experimentally proved), but it is moderated by other factors such as personality, attitudes, parental involvement and supervision, emotionality, situational factors, etc. The same pattern of influence is assumed in the relation between the extent of free time spent using electronic media and drug behaviour. Drug behaviour is also a multifactorial involved phenomenon and the acting factors are similar to those that moderate the effect of excessive time spent using media: personality, parental education, family factors,<sup>14</sup> group influence in combination with negative experiencing, desire for novelty or desire for effect.<sup>15</sup>

As we mentioned above, passivity of spending time using the media is the basic issue for the development of related problems, because it produces boredom and involves tension, which rises with persistent inactivity. We may identify three ways of linking excessive use of electronic media to behaviour related to drug use:

1. Uncritical acceptance of content presenting a hedonistic and consuming way of life, which does not quite correspond to reality. The adolescent is internalised or imitates them and takes on these behavioural patterns.
2. The main situational factor of drug use – group influence – is intensified through social networks that facilitate planning of drug use situations or access to drugs.
3. Tension itself, caused by passivity and inactivity (or frustration with unsuccessful digital gaming), is an unpleasant state that the young person is trying to reduce actively, e.g. by risk behaviour.

McLuhan directly states that the rise in drug use is the consequence of electronic media and drug use is stimulated by an environment overwhelmed by information.<sup>16</sup> Opinions on these links are also found in other authors' studies<sup>17</sup> which regard drug use (as a society-wide problem) as a consequence of changes associated with new forms of communication and habits. Specifically, it is the loss of an internal reference point caused by the arbitrariness and non-binding of ideals presented by media. Some studies about using electronic media and drug behaviour yielded significant results, which makes it possible to consider media use as an important risk factor or mediator of drug behaviour.<sup>18</sup> Other longitudinal studies were conducted to detect causal relations between exposition to scenes involving alcohol (or advertisements) on TV and alcohol use of adolescents.<sup>19</sup> Exposition to alcohol on TV has been detected as a predictor to later alcohol use (experimenting and binge drinking). Studies focusing on the extent of time spent watching TV in connection with drinking alcohol yielded, that students of a male gender who spent much time watching TV, were using alcohol more than those

pdfplus/10.2105/AJPH.76.5.525>; SIMANTOV, E. et al.: Health-compromising Behaviours: Why Do Adolescents Smoke or Drink? Identifying Underlying Risk and Protective Factors. In *Archives of Pediatrics and Adolescent Medicine*, 2000, Vol. 154, No. 10, p. 1025-1033. [online]. [2018-06-20]. Available at: <http://jamanetwork.com/journals/jamapediatrics/fullarticle/351569>; SULLIVAN, T. N., FARRELL, A. D.: Risk Factors. In ESSAU, C. A. (ed.): *Substance Abuse and Dependence in Adolescence*. East Sussex: Brunner-Routledge, 2002, p. 87-118; WEISSBERG, R. P. et al.: *The Social and Health Assessment*. New Haven: Authors, 1991; *České děti venku: Reprezentativní výzkum, kde a jak tráví děti svůj čas*. Nadace Proměny Karla Komárka, 2016. [online]. [2018-06-20]. Available at: <http://www.nadace-promeny.cz/cz/vyzkum.html>; DĚMUTHOVÁ, S.: The Influence of the School Environment on Teenage Delinquency. In *Journal of Teaching and Education*, 2018, Vol. 8, No. 2, p. 293-300.

3 See: MIČKOVÁ, Z.: Adolescence and Manifestation Emotions in the Family. In *AD ALTA: Journal of Interdisciplinary Research*, 2015, Vol. 5, No. 1, p. 55-58. [online]. [2018-06-20]. Available at: <http://www.magnanimitas.cz/ADALTA/0501/papers/A\_mickova.pdf>; MU, K. J. et al.: Internet Use and Adolescent Binge Drinking: Findings from the Monitoring the Future Study. In *Addictive Behaviors Reports*, 2015, Vol. 2, p. 61-66. [online]. [2018-06-20]. Available at: <https://www.sciencedirect.com/public/Mu\_et\_al\_2015a>.

4 See: SEJČOVÁ, L., MALÍK, M.: Postoje stredoškolskej mládeže k drogám. In *Mládež a spoločnosť*, 2006, Vol. 12, No. 2, p. 49-59; OROSOVÁ, O.: *Prevenencia – Pomoc – Rovesníci alebo preventívne nie nepoškodí*. Košice: UPJŠ, 2003; BIELIKOVÁ, M., PĚTIOVÁ, M.: *Drogy a životný štýl mládeže v Slovenskej republike*. Bratislava: Ústav informácií a prognóz školstva, 2003.

5 See: ROJKOVÁ, Z.: *Situačno-motivačné faktory alkoholového správania: Koncept – meranie – overovanie*. Trnava: FFUCM, 2016.

6 For more information about Kocová's research, see: KOCO VÁ, N.: Problémy a perspektívy voľného času. In *Medzinárodná vedecká elektronická konferencia. Conference Proceedings*. Prešov: FHPV PU, 2011, p. 126-131.

7 The studies which have verified the influence of violent media content on individual's behaviour and experiencing by means of the imitation, cognitive priming and desensitisation are, for example: FISCHER, V.: *Rezeptionsmodalitäten und emotionales Erleben bei der Rezeption von Fernsehnachrichten. Medienpsychologie*. Norderstedt: GRIN Verlag, 2006; HLINKOVÁ, D.: *Sociológia a prostriedky masovej komunikácie*. Bratislava: Univerzita Komenského, 2007; CHROMÝ, J., VESECKÁ, R.: *Kriminalita, verejná a média. Problémy, o nichž sa príliš (ne)mlúv*. Prague: Linde, 2009; MUSIL, J.: *Sociální a mediální komunikace*. Prague: Univerzita Jana Amose Komenského, 2010; ROMER, D. et al.: Television News and the Cultivation of Fear of Crime. In *Journal of Communication*, 2003, Vol. 53, No. 1, p. 88-104. [online]. [2018-06-20]. Available at: <https://doi.org/10.1111/j.1460-2466.2003.tb03007.x>; DĚMUTHOVÁ, S.: *Mladistvý delikvent. Pusté Úľany*: Schola Philosophica, 2006.

8 CARRAS, M. C. et al.: Video Gaming in a Hyperconnected World: A Cross-sectional Study of Heavy Gaming, Problematic Gaming Symptoms, and Online Socializing in Adolescents. In *Computers in Human Behaviour*, 2017, Vol. 68, p. 472-479. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.chb.2016.11.060>.

9 See: HRADISKÁ, E. et al.: *Psychológia médií*. Bratislava: Eurokódex, 2009.

10 See: GILES, D.: *Psychologie médií*. Prague: Grada, 2012.

11 See: BUERMANN, U.: *Jak (pře)žít s médii. Příležitosti a hrozby informačního věku a nové úkoly pedagogiky*. Hranice: Fabula, 2009.

12 FLORESCU, O.: Positive and Negative Influences of the Mass Media upon Education. In *Procedia – Social and Behavioral Sciences*, 2014, Vol. 149, p. 349-353. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.sbspro.2014.08.271>.

13 See: HRADISKÁ, E. et al.: *Psychológia médií*. Bratislava: Eurokódex, 2009.

14 See: MIČKOVÁ, Z., BLATNÝ, M., HRDLIČKA, M.: The Relationship between Family Factors and Somatic Problems in Adolescence. In *AD ALTA: Journal of Interdisciplinary Research*, 2018, Vol. 8, No. 2, p. 172-178.

15 See: ROJKOVÁ, Z.: *Situačno-motivačné faktory alkoholového správania: Koncept – meranie – overovanie*. Trnava: FFUCM, 2016.

16 See: McLUHAN, M.: *Člověk, média a elektronická kultura*. Brno: JOTA, 2000.

17 See: BUERMANN, U.: *Jak (pře)žít s médii. Příležitosti a hrozby informačního věku a nové úkoly pedagogiky*. Hranice: Fabula, 2009.

18 See, for example: GUTIERREZ, K. M., COOPER, T. V.: The Use of Social Networking Sites: A Risk Factor for Using Alcohol, Marijuana, and Synthetic Cannabinoids. In *Drug and Alcohol Dependence*, 2016, Vol. 164, p. 247-250. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.drugalcdep.2016.03.021>; MU, K. J. et al.: Internet Use and Adolescent Binge Drinking: Findings from the Monitoring the Future Study. In *Addictive Behaviors Reports*, 2015, Vol. 2, p. 61-66. [online]. [2018-06-20]. Available at: <https://www.sciencedirect.com/public/Mu\_et\_al\_2015a>.

19 See, for example: HANEWINKEL, R., SARGENT, J. D.: Longitudinal Study of Exposure to Entertainment Media and Alcohol Use among German Adolescents. In *Pediatrics*, 2009, Vol. 123, No. 3, p. 989-995. [online]. [2018-06-20]. Available at: <http://pediatrics.aappublications.org/content/123/3/989.figures-only>; CONNOLLY, G. M. et al.: Alcohol in the Mass Media and Drinking by Adolescents: A Longitudinal Study. In *Addiction*, 1994, Vol. 89, No. 10, p. 1255-1263. [online]. [2018-06-20]. Available at: <https://doi.org/10.1111/j.1360-0443.1994.tb03304.x>; GUNTER, B. et al.: *The Representation and Reception of Meaning in Alcohol Advertising and Young People's Drinking*. Leicester: University of Leicester, 2008. [online]. [2018-06-20]. Available at: <https://alcoholchange.org.uk/publication/the-representation-and-reception-of-meaning-in-alcohol-advertising-and-young-peoples-drinking>.

who spent less time watching TV.<sup>20</sup> Based on this theoretical and practical knowledge, we have formulated the following research objectives and questions. Our study aims to:

1. describe free time spent using electronic media among younger and older adolescents;
2. observe correlations between time spent using electronic media and drug behaviour among two (age) groups of adolescents;
3. explore the relation between time spent on the Internet and access to drugs.

Research questions we aim to answer are as follows:

**RQ1:** What is the extent of leisure time spent watching TV, using the Internet and playing digital games in two different age groups of adolescents?

**RQ2:** What is the relation between the extent of time spent using electronic media and drug behaviour of younger and older adolescents?

**RQ3:** What is the relation between the extent of time spent using electronic media and access to drugs possessed by younger and older adolescents?

## Methodology

The research sample included 2133 adolescents aged 14–18 years. Respondents were pupils and students of primary and secondary schools (secondary grammar schools, secondary vocational schools, training schools, secondary medical schools) from different regions of Slovakia. 39.6% (n = 845) of them were boys and 60.4% (n = 1,288) girls. The sample was further divided into two age groups: the group “14” (participants aged 14 to 15) consisted of n = 743, while the group “16” (participants aged 16 to 18) of n = 1,390 individuals. The completion of questionnaires was conditioned by approvals granted by schools’ leadership authorities to realise the research and by informed consent transformed into the participants’ voluntary participation in research. The database was reduced according to the value of the veracity of answers, which is surveyed in the last item of the questionnaire, and according to the result of eye-checking the data with the aim of finding visibly incorrect or incomplete answers.

## Research Tools

The used method of data collection was the SAHA questionnaire,<sup>21</sup> which was created for the international project of the same name – *The International Social and Health Assessment* implemented by Yale University. It is a thematically broad-based questionnaire survey, which deals with risk and protective factors in social development and health of school youth.

We have taken the Czech version of the tool (with respectable permission of Prof. Blatný) and have adjusted some parts of the instrument to conditions resulting from the social environment and cultural specificities in Slovakia. The final Slovak version of SAHA consists of 70 structured questions, of which 35 are multicomponent (include 3 to 44 items). For the needs of the actual study, we used scales of leisure activities, free time, drug usage (alcohol, cigarettes, marijuana, hard drugs) and access to drugs.

20 See: GRUBE, J. W.: Alcohol in the Media: Drinking Portrayals, Alcohol Advertising, and Alcohol Consumption among Youth. In BONNIE, R. J., O’CONNELL, M. E. (eds.): *Reducing Underage Drinking: A Collective Responsibility*. Washington, D. C.: The National Academies Press, 2004, p. 597-624. [online]. [2018-06-20]. Available at: <<https://www.ncbi.nlm.nih.gov/books/NBK37586/>>.

21 For more information about the method of data collection used in the SAHA questionnaire, see: WEISSBERG, R. P. et al.: *The Social and Health Assessment*. New Haven : Authors, 1991; *České děti venku: Reprezentativní výzkum, kde a jak tráví děti svůj čas*. Prague : Nadace Proměny Karla Komárka, 2016. [online]. [2018-06-20]. Available at: <<http://www.nadace-promeny.cz/vyzkum.html>>.

## Operationalisation of variables

### Drug-using behaviour

Drug-using behaviour synthesises 4 separate forms of drug use: intensity of drinking, intensity of smoking, binge drinking and experimenting with illegal drugs. The index of Drug-using Behaviour (DUB) takes values (also decimal) in the range of 1–4 and its type is scale.

### Partial drug-using variables

Alcohol Experimentation, Illegal Drugs Experimentation / ever; Frequency of Alcohol Use, Intensity of Smoking, Binge Drinking, Marijuana Use / month.

### Access to drugs

Includes partial answers on question: “How easy it would be to get... (alcohol, cigarettes, marijuana, cocaine, methamphetamine, mushrooms)?”. Respondents answer using 4-level Likert’s scale within a range from “very easy” (1) to “very hard” (4). The resulting variable ranges from 6 to 24 points; the higher the score, the harder the access to drug is.

### Extent of leisure time spent watching TV, playing digital games, browsing the Internet

Three partial variables are measured by 4-level recoded scale with extent of 0 hours a day to maximally 5 hours a day. The resulting variable “Electronic Media” is the sum of three partial variables and ranges from 0 to 9 points.

## Results

The answer to the first research question can be found in Figure 1, which shows the frequency of the categories of time spent using single media types.

**Television:** As can be seen, in the group “14”, most of the respondents watch TV maximally 1 hour a day (45.9%) and approximately 1/3 are watching it 2–4 hours a day (34%); furthermore, 16% of younger adolescents do not watch TV during the day at all. In group “16”, we recorded 43.6% of the respondents, who spend their leisure time by watching TV maximally 1 hour a day. 29.2% of these older adolescents watch TV to the extent of 2–4 hours a day, but a bit less than 1/4 (23.7%) do not watch TV at all.

**The Internet:** Regarding time spent on the Internet, we have a totally different representation of the extension categories. In both groups of adolescents, the highest incidence includes those who use the Internet 2–4 hours per day; it is slightly less than half of the respondents (the group “14” n = 43.8%; the group “16” n = 44.1%). Similarly, in both groups, we observe a marked evidence of those who use the Internet for 5 or more hours a day. There are over 1/3 of respondents (the group “14” n = 38.8%; “16” n = 39.8%). 15% of younger and 13.6% of older adolescents do not spend their free time through Internet activities for more than 1 hour a day, and an average of 3.9% (of the whole sample) do not use the Internet at all on a regular business day.

**Digital games:** As we can see in Figure 1, in the group of younger adolescents (“14”), we may identify the most frequent incidence of category 0 hours per day (46%); a bit more than 1/4 of the respondents spend their free time playing digital games for a maximum of 1 hour per day (27.9%), while a fifth of them (20.1%) perform this activity for 2–4 hours a day and the smallest, but still significant representation is of those who

play digital games for more than 5 hours per day (5.5%). In the group of older adolescents (“16”), the ranking of the extension categories is similar, but there is a greater incidence of those who do not play digital games during a regular day at all (51.1%). On the other hand, fewer (compared to the younger group) are those, who spend time playing games for maximally 1 hour per day (25.3%) and for 2 – 4 hours per day, where it is only 17.2%. The proportion of the respondents playing digital games for at least 5 hours a day, as well as in the younger group, is not ommissible (6.1%).

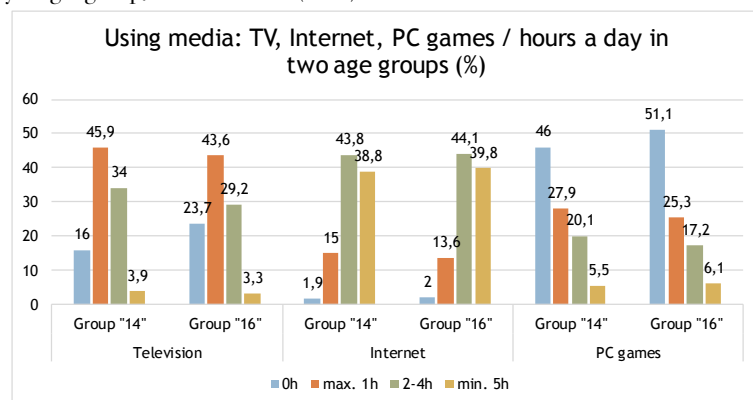


Figure 1: Frequencies of incidence of time categories for 3 types of electronic media in two age groups of adolescents

Source: Own processing

The next part of the research results (Figure 2) illustrates the frequencies of the variable “Electronic Media”. It is an ordinal variable with 9 levels (categories); the level names are indicative, representing the approximate extent of leisure time spent consuming TV, the Internet and digital games overall. As it can be seen, in both groups the respondents mostly spend 5 – 7 hours per day using electronic media and slightly less frequent are categories of 3 – 5 and 7 – 9 hours per day. We can summarise that in the older age group there are descriptively more adolescents who do not use electronic media on a regular day at all or for a maximum of 3 hours a day, in comparison to the younger age group, in which we found higher frequencies of those who use electronic media approximately 2 – 3 hours a day. The incidence of categories representing a longer time extent is similar in both age groups, as follows: 9 – 10 hours per day spent consuming electronic media contents was found in case of approximately 12.5% of adolescents; 10 – 11 hours of electronic media consumption a day are related to about 5% of adolescents and extent of electronic media use exceeding 11 hours a day is identified in answers of not more than 2% of all respondents (regardless of the two different age groups).

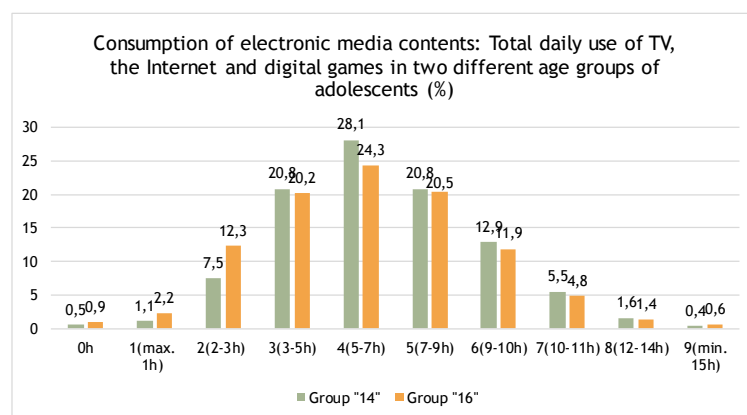


Figure 2: Frequencies of total daily time spent consuming 3 types of electronic media contents in two different age groups of adolescents

Source: Own processing

The answer to the second research question was found through statistical testing of the correlation between variables of extent of time spent using electronic media and variables of drug behaviour. The testing was applied in both age groups. The results for the group “14” are shown in Table 1. Bonferroni’s correction was applied to determine the Alpha value ( $\alpha^{corr} = 0.013$ ) of significance. After the correction, we interpreted that there is a significant correlation between Alcohol Experimentation and “the Internet”; it is a positive relation of weak intensity ( $\rho = 0.207$ , Sig. < 0.01). We also found another significant correlation between Drug Using Behaviour and “the Internet”; it is a positive relation of weak intensity ( $\rho = 0.201$ , Sig. < 0.01). The Internet is weakly correlated with all types of drug use included in the research, except for Illegal Drug Use. The overall drug use score, except in relation to the Internet, is weakly correlated with the totalised variable “Time Spent on Electronic Media”.

Table 1: Correlation matrix for the group “14” (Bonferroni’s correction  $\alpha = 0.013$ )

GROUP “14”		Television	The Internet	Digital Games	Electronic Media
Alcohol Experimentation / ever	Spearman’s $\rho$	-0.091	<b>0.207**</b>	-0.025	0.038
	Sig.	0.013	0.000	0.491	0.308
	N	732	730	731	727
Binge Drinking / month	Spearman’s $\rho$	-0.024	<b>0.122*</b>	0.058	0.090
	Sig.	0.512	0.001	0.119	0.016
	N	731	729	730	726
Intensity of Smoking / month	Spearman’s $\rho$	0.058	<b>0.130**</b>	-0.047	0.089
	Sig.	0.118	0.000	0.203	0.016
	N	736	734	735	731
Frequency of Alcohol Use / month	Spearman’s $\rho$	-0.030	<b>0.174**</b>	0.007	0.081
	Sig.	0.420	0.000	0.841	0.029
	N	731	730	730	727
Marijuana Use / month	Spearman’s $\rho$	-0.041	0.079	0.031	0.059
	Sig.	0.268	0.032	0.405	0.108
	N	737	735	736	732
Illegal Drug Use / ever	Spearman’s $\rho$	-0.004	0.085	-0.002	0.056
	Sig.	0.907	0.022	0.958	0.129
	N	733	731	732	728
Drug Using Behaviour	Spearman’s $\rho$	-0.009	<b>0.201**</b>	0.001	<b>0.109*</b>
	Sig.	0.811	0.000	0.987	0.004
	N	716	715	715	712

\* correlation is significant at the <  $\alpha^{corr}$  level

\*\* correlation is significant at the < 0,001 level

Source: Own processing

In the next table (Table 2), the results of the same testing process can be seen, but in the group of older adolescents (“16”). After Bonferroni’s correction of Alpha ( $\alpha^{corr} = 0.013$ ), we recognised several significant correlations. We interpret the significant relations between “the Internet” and all forms of legal drug behaviour included in this study, specifically: Alcohol Experimentation / ever ( $\rho = 0.205$ ; Sig. < 0.001), Frequency of Alcohol Use during a month ( $\rho = 0.191$ ; Sig. < 0.001), Binge Drinking during the last month ( $\rho = 0.161$ ; Sig. < 0.001), Intensity of Smoking ( $\rho = 0.181$ ; Sig. < 0.001). According to significant partial

correlation, the variable “the Internet” also relates to the total variable of Drug Using Behaviour, and it has a positive weak correlation similarly as at partial correlations ( $\rho = 0.217$ ; Sig.  $< 0.001$ ). In the correlation matrix, we also recorded significant results regarding the overall variable “Electronic Media”, in relation to Alcohol Experimentation ( $\rho = 0.127$ ; Sig.  $< 0.001$ ), Frequency of Alcohol Use ( $\rho = 0.153$ ; Sig.  $< 0.01$ ), Binge Drinking ( $\rho = 0.141$ ; Sig.  $< 0.001$ ), Intensity of Smoking ( $\rho = 0.127$ ; Sig.  $< 0.001$ ) and Drug Using Behaviour  $\rho = 0.159$ ; Sig.  $< 0.001$ ). Every correlation is weak and of positive direction.

Table 2: Correlation matrix for the group “16” (Bonferroni’s correction  $\alpha = 0.013$ )

GROUP “16”		Television	The Internet	Digital Games	Electronic Media
Alcohol Experimentation / ever	Spearman’s $\rho$	-0.030	<b>0.205**</b>	0.077*	<b>0.127**</b>
	Sig.	0.262	0.000	0.004	0.000
	N	1362	1361	1363	1354
Frequency of Alcohol Use / month	Spearman’s $\rho$	0.014	<b>0.191**</b>	0.091*	<b>0.153**</b>
	Sig.	0.615	0.000	0.001	0.000
	N	1356	1355	1357	1348
Binge Drinking / month	Spearman’s $\rho$	0.067	<b>0.161**</b>	0.047	<b>0.141**</b>
	Sig.	0.014	0.000	0.082	0.000
	N	1361	1360	1362	1353
Intensity of Smoking / month	Spearman’s $\rho$	0.004	<b>0.181**</b>	0.078*	<b>0.127**</b>
	Sig.	0.896	0.000	0.004	0.000
	N	1356	1355	1357	1348
Marijuana Use / month	Spearman’s $\rho$	-0.020	0.082*	0.070*	0.079*
	Sig.	0.472	0.002	0.010	0.004
	N	1360	1359	1361	1352
Illegal Drugs Use / ever	Spearman’s $\rho$	-0.022	0.029	0.097**	0.064
	Sig.	0.408	0.284	0.000	0.019
	N	1359	1358	1360	1351
Drug Using Behaviour	Spearman’s $\rho$	0.027	<b>0.217**</b>	0.067	<b>0.159**</b>
	Sig.	0.322	0.000	0.015	0.000
	N	1323	1322	1324	1316

\* correlation is significant at the  $< \alpha^{\text{corr}}$  level

\*\* correlation is significant at the  $< 0.001$  level

Source: Own processing

In a similar way, we addressed the third research question, in which we focused on the relationship between leisure time spent with electronic media and access to drugs. The results were processed separately for the two age groups and they are visible in Table 3. After Bonferroni’s correction of Alpha ( $\alpha^{\text{corr}} = 0.013$ ), a significant positive correlation between “Television” and Access to Drugs in the younger group (“14”) can be recognised ( $\rho = 0.119$ ; Sig.  $< 0.01$ ). A significant correlation between “the Internet” and Access to Drugs has been identified in the younger adolescents’ group (“14”). This is a weak correlation of the negative direction ( $\rho = -0.176$ ; Sig.  $< 0.001$ ), which means that the longer the time spent on the Internet, the (slightly) easier the availability of drugs for individuals is. Statistically significant, but trivial correlations were found for the “16” group, so we can interpret the absence of a relationship.

Table 3: Correlation matrix of relation between Access to Drugs and Using Electronic Media for both age groups (Bonferroni’s correction  $\alpha = 0.013$ )

		Television	The Internet	Digital Games	Electronic Media
Access to Drugs “14”	Spearman’s $\rho$	<b>0.119**</b>	<b>-0.176**</b>	-0.023	-0.035
	Sig.	0.001	0.000	0.537	0.348
	N	733	731	732	728
Access to Drugs “16”	Spearman’s $\rho$	0.006	-0.071**	-0.090**	-0.083**
	Sig.	0.820	0.008	0.001	0.002
	N	1371	1370	1372	1363

Source: Own processing

## Discussion

The object of the study was to examine the extent of free time spent using electronic media and its possible association with drug behaviour expressed by adolescents. The sample was divided into two age groups: a younger group (14 – 15 years of age) consisting of elementary school pupils and an older group (16 – 17 years of age) of high school pupils. We consider the dividing of the sample to be important both because of the developmental perspective and because of the different nature of social encounters and responsibilities related to elementary and secondary schools. An important factor in the interpretation of the results is the fact that there is a significantly lower prevalence of all forms of drug behaviour detected in the younger group (“14”). For example, 90.3% of younger and only 64.5% of older adolescents did not smoke in the last month; 48.5% of the younger group and 30.5% of the older group did not drink alcohol in the last month; the incidence of marijuana use during the last month is 7% in the younger and 18.7% in the older age group of adolescents. Only the incidence of experimentation with illicit drugs is indistinguishable in both groups (approximately 11%). This results in a significantly lower variability in the values of drug variables, which could have been reflected in correlation testing.

Our aim to address the first research question has produced results on the length of time spent with electronic media during a normal business day. Experts recommend youth not to spend more than 2 hours a day watching TV, using the Internet or playing digital games. In our research, we distinguish categories maximally 1 hour a day and 2 or more hours a day. According to this definition, television is watched by approximately 29% of the adolescents for more than an hour a day and it can be said that TV is more watched by those of the younger age group overall. This knowledge is in line with the results of various Slovak and Czech studies published in the past 7 years, which say that the most leisure time consumed in relation to watching TV, DVD or video is spent by younger adolescents (individuals that are 11 – 14 years old)<sup>22</sup> and with age rises the rate of individuals who spend two or more hours per day on the computer. In ‘the last 10 years’ perspective, there is a clear increase in the use of the Internet. As of rating the prominence of media activities, the last time the Internet usage did not exceed watching TV was in 2007.<sup>23</sup> Compared with these results, Hradiská and Ritomský,<sup>24</sup> as well as Žumárová<sup>25</sup> observed that the use of the Internet or personal computers by high school students exceeds the traditional media (TV, radio, newspapers, etc.).

22 See: HAMŘÍK, Z. et al.: Sedavý životný štýl a pasívni trávení voľného času českých školáků. In *Tělesná kultura*, 2012, Vol. 35, No. 1, p. 28-39; KOŽUCHOVÁ, M., BAŠKOVÁ, M.: Sledovanie televízie vo voľnom čase v populácii školskej mládeže v oblasti stredného Slovenska. In *Kontakt*, 2014, Vol. 16, No. 13, p. 205-210. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.kontakt.2014.08.002>.

23 See: HRADISKÁ, E., RITOMSKÝ, A.: *Spôsoby trávenia voľného času v súvislosti so sebahodnotením mládeže a postojmi k extrémizmu*. Bratislava: Národné osvetové centrum, 2007.

24 See: HRADISKÁ, E. et al.: *Psychológia médií*. Bratislava: Eurokódex, 2009.

25 See: ŽUMÁROVÁ, M.: Computers and Children’s Leisure Time. In *Procedia – Social and Behavioral Sciences*, 2015, Vol. 176, p. 779-786. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.sbspro.2015.01.540>.

The increasing trend supports our finding about more than 80% of adolescents (from both groups) who use the Internet for 2 and more hours a day. However, today the Internet use is not just limited to spending time with personal computers; the Internet is available through various mobile devices and therefore an adolescent can use it outdoors and during other activities, when, for example, the Internet registers the course of their activities. We also need to acknowledge that the respondents considered their use of school-based interactive lessons as time spent using the Internet; in this case we cannot talk about leisure activities. The third observed category of free time activity using electronic media is playing digital games. These are also nowadays closely connected to the Internet, and mostly it is about playing online games. Playing online games implies various situations including social communication, as other people are involved and players may cooperate. In our study, gaming was identified in daily routines of 50 – 60% of adolescents, of whom approximately 1/4 play digital games for more than 1 hour per day.

Earlier research on Slovak high school students<sup>26</sup> claimed that 23.5% of adolescents in Slovakia play digital games for 1 – 3 hours per day and 12% play for more than 4 hours per day. Similar results are currently recorded in European countries where 11% of youth spend 4 or more hours a day playing digital games.<sup>27</sup> Considering the slightly different methodology we used, we identified a lower extent of time spent playing digital games during the business day of adolescents included in our sample (in comparison to the above-mentioned findings of different authors). On the other hand, we reported average 5 hours a day of overall use of electronic media by adolescents, which is quite different from earlier studies<sup>28</sup> that had observed the time spent using screen-based media (TV, digital games and personal computers) and found that young people spend about 2.5 – 3.25 hours per day on these media. According to the results of a current Czech study,<sup>29</sup> younger adolescents (13 – 15 years old) spend around 4.5 hours a day using the Internet, watching TV and playing digital games, which is similar to our findings.

Given the framework of subsequent research questions, we examined the relations between the extent of time spent using electronic media and drug behaviour. According to the results in both groups of adolescents, there is a linear connection between all forms of alcohol behaviour (and smoking behaviour) and the daily extent of time spent on the Internet. The more time an adolescent spends using the Internet per day, the more cups of alcohol they drink. However, there are no statistical relations concerning use of illicit drugs (including marijuana). The longer portion of the daily time an adolescent spends on the Internet, the more intensive their drinking, smoking, binge drinking and marijuana use is. The overall risk index of drug behaviour is higher as well. In our opinion, the explanation is based on the interaction of peer groups and on the online communication, during which members of these groups contact each other.

Peer groups have a great importance in the period of middle adolescence (in 14 – 17 years of age). A young person gains more freedom; they are disengaging from their parents, become responsible for their life, and thus develop their identity. Weak, but still statistically significant relations were found between the scores of using electronic media and all forms of alcohol behaviour and intensity of smoking in the group of older adolescents (“16”). It is likely that similar relations were not observed in the younger group (“14”) because of the protective influence of parents, who still control the children and are interested in what they are doing. Parents are checking their children’s activities on the Internet, TV programmes they watch, limiting their time spent on PC or on smartphone and so on.

Under the influence of media content, the real world may be distorted. Uncritical acceptance of ideals and imitation of patterns may thus occur, but this is rather caused by television broadcasts; however, watching TV did not prove to be substantial for drug behaviour. We suppose that social networks and other forms of

online communication are activities, which prominently moderate the risk of drug use. At the same time, the overall passivity of using electronic media should be highlighted; sometimes it is considered as a source of boredom. Boredom, curiosity, group influence and drug availability are the most common, and in a sense, developmentally inherent risk factors for drug use in adolescence. Via online communication, it is easy to arrange a meeting with peers in a short time, at a specific location.

Perhaps, unconfirmed relations between time spent by watching TV and playing digital games impress positively, despite the knowledge that suggested it. Watching TV is surely less present among leisure activities of teenagers than it used to be in the past. On the other hand, in our research we did not examine the media contents (e.g. the exposure of adolescents to images involving alcohol consumption); passivity associated with this type of medium is probably not a risk factor. It is also similar in the case of playing digital games. However, we have to draw attention to the 1/4 of adolescents who play digital games for 2 or more hours a day, which poses a risk for the emergence of gambling, addiction and related disorders.<sup>30</sup> Digital gaming itself did not appear to be a risk factor for drug behaviour. We do agree that playing digital games can yield a positive effect for young individuals, because it provides opportunities for developing self-confidence, cognitive abilities, communication skills, and is often about interactions and relationships between co-players, teammates and about releasing emotional tension as well.

Lastly we mention one notable result about the relation between access to drugs, extent of time spent on the Internet and watching TV, found in the younger age group (“14”), while the direction of relations is opposite. A deduced weak protective effect might be time spent with TV; furthermore, the extent of time spent on the Internet seems to be a risk factor in relation to access to drugs in the population of adolescents aged 15 or less. Younger adolescents spend more time watching TV; they are controlled by their parents and use the Internet less frequently, and thus are practically protected from the negative effects of the Internet. Those who at the age of 14 – 15 years spend more of their daily time on the Internet consider drug access as easier. However, this was not found in the older age group, in which using the Internet is a part of everyday functioning, not just fun, but also learning and knowing. Older adolescents spend more time without their parents controlling them, outside their homes, with friends, and therefore assess their potential access to drugs is more related to these activities.

## Conclusions

We summarise that the daily extent of electronic media usage among adolescents is increasing and it is related mostly to alcohol use and smoking. However, the intensity of the relationship is weak. The main risk factors of drug behaviour are family-related factors in combination with neuroticism and unresolved problems of different natures.<sup>31</sup> Alcohol is a legal drug, but drinking it should be available only to adults. In our sample, respondents under the age of 18 were deliberately included. And the results show how often people do not respect the given law. Drinking alcohol (and binge drinking) has also become a frequent activity of teens, especially secondary school students, who use drinking to compensate for a lack of activity that would require creative, cognitive or physical challenges.

The observed weak linear dependence identifying the extent of Internet use as a drug behaviour risk factor partly explains the previously unknown, but perhaps until recently not existing, intervening variable of adolescents’ drug behaviour.

26 For more information about the research of Slovak high school students, see: BENKOVIČ, J. et al.: Počítačové hry, dôsledky na život a fungovanie na život mladého jedinca. In *Psychiatria pre prax*, 2011, Vol. 12, No. 2, p. 76-80.

27 See the results of the research recorded in European countries: CARRAS, M. C. et al.: Video Gaming in a Hyperconnected World: A Cross-sectional Study of Heavy Gaming, Problematic Gaming Symptoms, and Online Socializing in Adolescents. In *Computers in Human Behaviour*, 2017, Vol. 68, p. 472-479. [online]. [2018-06-20]. Available at: <<https://doi.org/10.1016/j.chb.2016.11.060>>.

28 MARSHAL, S. J. et al.: A Descriptive Epidemiology of Screen-based Media Use in Youth: A Review and Critique. In *Journal of Adolescence*, 2006, Vol. 29, No. 3, p. 333-349. [online]. [2018-06-20]. Available at: <<http://www.sciencedirect.com/science/article/pii/S0140197105001107>>.

29 The results of a current Czech study: *České děti venku: Reprezentační výzkum, kde a jak tráví děti svůj čas*. Prague: Nadace Proměny Karla Komárka, 2016. [online]. [2018-06-20]. Available at: <<http://www.nadace-promeny.cz/vyzkum.html>>.

30 See: BARGERON, A. H., HORMES, J. M.: Psychosocial Correlates of Internet Gaming Disorder: Psychopathology, Life Satisfaction, and Impulsivity. In *Computers in Human Behavior*, 2017, Vol. 68, p. 388-394. [online]. [2018-06-20]. Available at: <<https://doi.org/10.1016/j.chb.2016.11.029>>; KAESS, M. et al.: Stress Vulnerability in Male Youth with Internet Gaming Disorder. In *Psychoneuroendocrinology*, 2007, Vol. 77, p. 244-251. [online]. [2018-06-20]. Available at: <<http://dx.doi.org/10.1016/j.psyneuen.2017.01.008>>; CARRAS, M. C. et al.: Video Gaming in a Hyperconnected World: A Cross-sectional Study of Heavy Gaming, Problematic Gaming Symptoms, and Online Socializing in Adolescents. In *Computers in Human Behaviour*, 2017, Vol. 68, p. 472-479. [online]. [2018-06-20]. Available at: <<https://doi.org/10.1016/j.chb.2016.11.060>>.

31 ROJKOVÁ, Z.: *Situáčno-motivačné faktory alkoholového správania: Koncept – meranie – overovanie*. Trnava: FF UCM, 2016.

*Acknowledgement: The research study is a part of the national project supported by the Slovak Ministry of Education and the Slovak Academy of Sciences (VEGA) No. 1/0042/17 titled "Risk Behaviour in Adolescence, Its Incidence and Influencing Factors". The authors would like to thank Professor Blatný for kindly allowing them to use the Czech version of SAHA questionnaire.*

## BIBLIOGRAPHY:

- BARGERON, A. H., HORMES, J. M.: Psychosocial Correlates of Internet Gaming Disorder: Psychopathology, Life Satisfaction, and Impulsivity. In *Computers in Human Behavior*, 2017, Vol. 68, p. 388-394. ISSN 0747-5632. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.chb.2016.11.029>.
- BENKOVIČ, J. et al.: Počítačové hry, dôsledky na život a fungovanie na život mladého jedinca. In *Psychiatria pre prax*, 2011, Vol. 12, No. 2, p. 76-80. ISSN 1335-9584.
- BIELIKOVÁ, M., PÉTIOVÁ, M.: *Drogy a životný štýl mládeže v Slovenskej republike*. Bratislava : Ústav informácií a prognóz školstva, 2003.
- BUERMANN, U.: *Jak (pře)žít s médii. Příležitosti a hrozby informačního věku a nové úkoly pedagogiky*. Hranice : Fabula, 2009.
- CARRAS, M. C. et al.: Video Gaming in a Hyperconnected World: A Cross-sectional Study of Heavy Gaming, Problematic Gaming Symptoms, and Online Socializing in Adolescents. In *Computers in Human Behaviour*, 2017, Vol. 68, p. 472-479. ISSN 0747-5632. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.chb.2016.11.060>.
- CONNOLY, G. M. et al.: Alcohol in the Mass Media and Drinking by Adolescents: A Longitudinal Study. In *Addiction*, 1994, Vol. 89, No. 10, p. 1255-1263. ISSN 1360-0443. [online]. [2018-06-20]. Available at: <https://doi.org/10.1111/j.1360-0443.1994.tb03304.x>.
- České děti venku: *Reprezentativní výzkum, kde a jak tráví děti svůj čas*. Prague : Nadace Proměny Karla Komárka, 2016. [online]. [2018-06-20]. Available at: <http://www.nadace-promeny.cz/cz/vyzkum.html>.
- DÉMUTHOVÁ, S.: *Mladistvý delikvent*. Pusté Útany : Schola Philosophica, 2006.
- DÉMUTHOVÁ, S.: The Influence of the School Environment on Teenage Delinquency. In *Journal of Teaching and Education*, 2018, Vol. 8, No. 2, p. 293-300. ISSN 2165-6266.
- FISCHER, V.: *Rezeptionsmodalitäten und emotionales Erleben bei der Rezeption von Fernsehnachrichten. Medienpsychologie*. Norderstedt : GRIN Verlag, 2006.
- FLORESCU, O.: Positive and Negative Influences of the Mass Media upon Education. In *Procedia – Social and Behavioral Sciences*, 2014, Vol. 149, p. 349-353. ISSN 1877-0428. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.sbspro.2014.08.271>.
- GILES, D.: *Psychologie médií*. Prague : Grada, 2012.
- GRUBE, J. W.: Alcohol in the Media: Drinking Portrayals, Alcohol Advertising, and Alcohol Consumption among Youth. In BONNIE, R. J., O'CONNELL, M. E. (eds.): *Reducing Underage Drinking: A Collective Responsibility*. Washington, D.C.: The National Academies Press, 2004, p. 597-624. [online]. [2018-06-20]. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK37586/>.
- GUNTER, B. et al.: *The Representation and Reception of Meaning in Alcohol Advertising and Young People's Drinking*. Leicester : University of Leicester, 2008. [online]. [2018-06-20]. Available at: <https://alcoholchange.org.uk/publication/the-representation-and-reception-of-meaning-in-alcohol-advertising-and-young-peoples-drinking>.
- CUTIERREZ, K. M., COOPER, T. V.: The Use of Social Networking Sites: A Risk Factor for Using Alcohol, Marihuana, and Synthetic Cannabinoids. In *Drug and Alcohol Dependence*, 2016, Vol. 164, p. 247-250. ISSN 0376-8716. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.drugalcdep.2016.03.021>.
- HAMŘÍK, Z. et al.: Sedavý životný štýl a pasívni trávení voľného času českých školáků. In *Tělesná kultura*, 2012, Vol. 35, No. 1, p. 28-39. ISSN 1211-6521.
- HANEWINKEL, R., SARGENT, J. D.: Longitudinal Study of Exposure to Entertainment Media and Alcohol Use among German Adolescents. In *Pediatrics*, 2009, Vol. 123, No. 3, p. 989-995. ISSN 1098-4275. [online]. [2018-06-20]. Available at: <http://pediatrics.aappublications.org/content/123/3/989.figures-only>.
- HLINKOVÁ, D.: *Sociológia a prostriedky masovej komunikácie*. Bratislava : Univerzita Komenského, 2007.
- HRADISKÁ, E. et al.: *Psychológia médií*. Bratislava : Eurokódex, 2009.
- HRADISKÁ, E., RITOMSKÝ, A.: *Spôsoby trávenia voľného času v súvislosti so sebahodnotením mládeže a postojmi k extrémizmu*. Bratislava : Národné osvetové centrum, 2007.

- CHROMÝ, J., VESECKÁ, R.: *Kriminalita, veřejnost a média. Problémy, o nichž se příliš (ne)mluví*. Prague : Linde Praha, 2009.
- KAESS, M. et al.: Stress Vulnerability in Male Youth with Internet Gaming Disorder. In *Psychoneuroendocrinology*, 2007, Vol. 77, p. 244-251. ISSN 0306-4530. [online]. [2018-06-20]. Available at: <http://dx.doi.org/10.1016/j.psyneuen.2017.01.008>.
- KOCOVIČ, N.: Problémy a perspektívy voľného času. In *Medzinárodná vedecká elektronická konferencia. Conference Proceedings*. Prešov : FHPV PU, 2011, p. 126-131.
- KOŽUCHOVÁ, M., BAŠKOVÁ, M.: Sledovanie televízie vo voľnom čase v populácii školskej mládeže v oblasti stredného Slovenska. In *Kontakt*, 2014, Vol. 16, No. 3, p. 205-210. ISSN 1804-7122. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.kontakt.2014.08.002>.
- MARSHAL, S. J. et al.: A Descriptive Epidemiology of Screen-based Media Use in Youth: A Review and Critique. In *Journal of Adolescence*, 2006, Vol. 29, No. 3, p. 333-349. ISSN 0140-1971. [online]. [2018-06-20]. Available at: <http://www.sciencedirect.com/science/article/pii/S0140197105001107>.
- MeLUHAN, M.: *Člověk, média a elektronická kultura*. Brno : JOTA, 2000.
- MIČKOVÁ, Z.: Adolescence and Manifestation Emotions in the Family. In *ADALTA: Journal of Interdisciplinary Research*, 2015, Vol. 5, No. 1, p. 55-58. ISSN 2464-6733. [online]. [2018-06-20]. Available at: <http://www.magnanimitas.cz/ADALTA/0501/papers/A\_mickova.pdf>.
- MIČKOVÁ, Z., BLATNÝ, M., HRDLIČKA, M.: The Relationship between Family Factors and Somatic Problems in Adolescence. In *ADALTA: Journal of Interdisciplinary Research*, 2018, Vol. 8, No. 2, p. 172-178. ISSN 1804-7890.
- MU, K. J. et al.: Internet Use and Adolescent Binge Drinking: Findings from the Monitoring the Future Study. In *Addictive Behaviors Reports*, 2015, Vol. 2, p. 61-66. ISSN 2352-8532. [online]. [2018-06-20]. Available at: <https://www.sciencedirect.com/public/Mu\_et\_al\_2015a>.
- MUSIL, J.: *Sociální a mediální komunikace*. Prague : Univerzita Jana Amose Komenského, 2010.
- NEWCOMB, M. D. et al.: Risk Factors for Drug Use Among Adolescents: Concurrent and Longitudinal Analyses. In *American Journal of Public Health*, 1986, Vol. 76, No. 5, p. 525-531. ISSN 1541-0048. [online]. [2018-06-20]. Available at: <http://ajph.aphapublications.org/doi/pdfplus/10.2105/AJPH.76.5.525>.
- NOCIAR, A.: *Európsky školský prieskum o alkohole a iných drogách (ESPAD) v SR za rok 2015. Závěrečná správa*. Bratislava : VÚDPaP, 2015.
- OROSOVÁ, O.: *Prevenčia – Pomoc – Rovesníci alebo preventívne nie nepoškodí*. Košice : UPJŠ, 2003.
- ROJKOVÁ, Z.: *Situačno-motivačné faktory alkoholového správania: Koncept – meranie – overovanie*. Trnava : FFUCM, 2016.
- ROMER, D. et al.: Television News and the Cultivation of Fear of Crime. In *Journal of Communication*, 2003, Vol. 53, No. 1, p. 88-104. ISSN 1460-2466. [online]. [2018-06-20]. Available at: <https://doi.org/10.1111/j.1460-2466.2003.tb03007.x>.
- SEJČOVÁ, L., MALÍK, M.: Postoje stredoškolskej mládeže k drogám. In *Mládež a spoločnosť*, 2006, Vol. 12, No. 2, p. 49-59. ISSN 1335-1109.
- SIMANTOV, E. et al.: Health-compromising Behaviours: Why Do Adolescents Smoke or Drink? Identifying Underlying Risk and Protective Factors. In *Archives of Pediatrics and Adolescent Medicine*, 2000, Vol. 154, No. 10, p. 1025-1033. ISSN 1072-4710. [online]. [2018-06-20]. Available at: <http://jamanetwork.com/journals/jamapediatrics/fullarticle/351569>.
- SULLIVAN, T. N., FARRELL, A. D.: Risk Factors. In ESSAU, C. A. (ed.): *Substance Abuse and Dependence in Adolescence*. East Sussex : Brunner-Routledge, 2002, p. 87-118.
- WEISSBERG, R. P. et al.: *The Social and Health Assessment*. New Haven : Authors, 1991.
- ŽUMÁROVÁ, M.: Computers and Children's Leisure Time. In *Procedia – Social and Behavioral Sciences*, 2015, Vol. 176, p. 779-786. ISSN 1877-0428. [online]. [2018-06-20]. Available at: <https://doi.org/10.1016/j.sbspro.2015.01.540>.