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Gambling among Teenagers in Bjelovar-Bilogora County (Croatia)

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Abstract – The term "gambling" refers to investing something valuable into an event with uncertain outcome for the chance of winning money or prizes. Main characteristics of gambling are taking a risk and the uncertainty of outcome. The study included 641 last-year high school pupils. 44,9% of the students had ever gambled. Majority of students gamble few times a month (70,5%), and 6,6% of students gamble every day . The most commonly reported gambling activity is sports betting (63,2%), and they go to betting boots mostly with friends (63.54%). Half of the students (56%) report that their parents know of their gambling habits and do not object them. Most of the students (71,5%) say they do not have family member who often gambles. Half of the students (52,8%) have been asked to show an ID card to prove that they are not underage. Almost all the students (94%) believe that their gambling habits do not interfere with their school success, and many of them (43,1%) believe that gambling cannot lead to addiction, 99,7% would never ask for professional help with gambling problems. Compared to economic school, other students are more likely to gamble if they attend technical school, (OR 4.14, CI 1.93-8.86), vocational (OR 2.88, CI 1.39-6.00) or tourism school (OR 5.65,CI 2.72-11.75) while they were least likely to gamble if they attend general high scool (OR 0.93,CI 0.48-1.82). The risk is greater four times for the technical students. Other factors, like intention to go to university, school success, living in urban or rural place, family income and monthly aloowance, were not significantly related to frequeny of gambling. Public accessibility to teenage gambling and the results of our study stress the need for developing the public health prevention programs for early assessment of problems and intervention for problem gambling.

Key words: gambling, teenagers, Bilogora County

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Introduction

Gambling is one of the mankind's oldest activities for fun. The term gambling refers to investing something valuable into an event with uncertain outcome for the chance of winning money or prizes. Main characteristics of gambling are taking a risk and

uncertainty of outcome [1]. Today we are witnessing the explosion of legal gambling, more and more casinos, lottery and betting shops are opening every day. According to the Croatian law, gambling games are divided into four main groups: Lottery tickets, casino games, betting games and slot machines [2]. The law clearly defines 18 years as the age limit for gambling. It prohibits anyone under the age of 18 to enter the casino, to gamble at casinos or at any other gambling or betting facilities, and requires staff to check ID to any participants. The conviction for breaking any of aforementioned law propositions is a fine between 50.000,00 and 500.000,00 kunas. [3]. Nevertheless, despite the 18 year age limit, gambling opportunities are widely and easily accessible and also available for high school students. Poverty and economic crisis also contributes to spreading of gambling and thoughts of earning some easy money, but it can lead to a harmful addiction with gambling. The previous research has shown that problem gambling is a constellation of more connected issues such as risk behaviours, alcohol and substance abuse. The consequences of problem gambling are as harmful as substance abuse, and by the epidemiological trends we are witnessing, one is to expect a rise in problem gambling if no successful prevention actions take place in near future [4-6].

The research on gambling in Croatia is still limited, and there are only few studies conducted among children and adolescents. The study among adolescents revealed that 83% of them have gambled at least once in their lives; 19.0% of them gambled on sports events at least once in a week, on the internet (22.8%) and on slot machines (6.2%). Their reasons for taking part in gambling are money, fun with friends, and close friend who gambles as well. One third of children report that their parents are aware of their gambling activities, and 20-30% of them also gamble, especially fathers. Vocational high school students are more likely to gamble than students from general high schools [7].

Study by Koić et al conducted among the last year high school students showed that 38.5% of boys and 11.7% girls gamble, boys mostly at betting shops (42%), girls at Bingo (33%). Vocational school students gamble the most, and medical high school students the least. Students think of gambling as a way to have a good time (28.2% boys and 15.5% girls). Large number of students (68%) knows a person with a gambling problem, and almost all (97%) of the students know about gambling addiction. They (22% girls and 38% boys) also think they have enough information on problem gambling, and even more of them (62.9%) think they do not need additional education about gambling problems [8].

Other research among high school students report that 75% of the students have gambled at least once in their lives; mostly on sports events and lottery. Almost half of them who gamble (47.1%) bet on sports events and 38.5% of them do it few times a week. Internet gambling is done by fewer students (7.7%) but half of those who do it, do it every day (53%). They found that men are more likely to develop gambling problems, but did not found that any specific type of high school (general vs vocational high school) was related to gambling rates [9].

Results from the ESPAD study done in Croatia among youth of 16 years of age show that 61% of boys and 89% of girls that age never played on slot machines, 8.6% of them do it at least once a week, and 4.4% of boys do it almost daily [10].

Pilot study conducted among older adolescents, university students in Zadar show that 7.1% of university students bet on sport events, 11.5% have a partner who gambles, and 12.4% of them know of a member of a family who gambles. They mostly gamble once a month (5.31%), or once a week (3.54%), and on most of the occasion (90.2%) lose their money [11].

According to international studies done by Volberg et al and Coxs et al, the prevalence rate of high school gambling problems vary from 4 to 8% [4-6], which is more than the rates among those older than 18 years ;1-4% [12,13].

Harvard meta-analysis (Shaffer et al) concludes that 4.4% - 7.4% of youth aged 13-20 years have been involved in some kind of gambling activity [14].

Adolescent prevalence survey among British children showed that 28.2% of boys and 12.7% of girls have gambled in the last seven days. They have defined risk factors for developing more severe problem gambling: male gender, children who live in a family without siblings, lower family income, smoking, having parents who gamble and bigger child allowance. The research also reports on younger age of gambling onset, bigger family influence than school programs, and stresses the need for prevention programs in early school years [15].

Research form Canada and Columbia show similar risk factors for developing problem gambling; early onset age of gambling, poor family climate, having family members or peers who gamble, anxiety, depression, poor education and substance abuse [16,17].

European study from Switzerland reports that 48.3% of subjects have gambled in some way in the last year, and 13.5% of them in the last week [18].

A big random telephone study (2274 adolescents, 14-21 years old) conducted in the USA (year 2005-2007) reports that 68% of subjects have been gambling in the last year, mostly playing cards for money, playing the lottery, betting on sporting events. The odds for developing pathologic gambling were 4.8 times greater in men than in women [19].

The aim of this study was to examine the prevalence of gambling among high school students in Bjelovar-Bilogora County, Croatia, and its relation to social factors. Personal socio-demographic factors examined were: type of high school, intension to go to University, school grades and free time activities. Factors not related directly to the student were family status, divorced parents, economic status, monthly allowance and place of living.

Scottish scientist Patrick West had set a thesis of relative equality of health in youth, in contrast to early childhood and post-school period, where home background and class differences in health are removed or reduced. It is suggested that this is due to the youth need for independence and separation from parental home, when youth factors become more important that family and neighbourhood background, such as peer group, youth culture and youth success [20]. After that, others have also shown that relative social equality in health in youth is more relevant for risk behaviour and mental health (smoking, alcohol and marijuana use, early sexual behaviour) than in other dimensions of health [21, 22-24]. According to that, hypothesis of this study is that person-related factors are more associated to gambling problems than socio-demographic factors not related to person itself.

Subjects and methods

The study included 641 (358 boys and 283 girls) last-year high school students recruited from every high school in Bjelovar- Bilogora county (45.2% of all high school students attending final grade that school year). Mean age of students was 17.3 ± 0.7 years. Students were attending economics high school N =118 (18.4%), technical high school N = 109 (17.0%), vocational high school N = 127 (19.8%), tourism and catering high school N = 92 (14.3%) and general high school N = 195 (30.5%). All schools and classes accepted to participate in the study and we randomly chose classes from each and every high school in Bjelovar-Bilogora County.

Methods

The study was done between September and October 2012. Student and parents/caregivers were informed of study nature being voluntary and anonymous. The anonymous questionnaire was completed in the classroom during school time, supervised by the school doctors. The students were instructed to return the filled questionnaires in sealed blank envelopes. We used special structured questionnaire using translated questions from questionnaires from different countries, adjusted to our setting. The questions were open ended or multiple choice. The questionnaire consisted of three parts: first part (15 questions) about socioeconomic status (place of living, type of high school, school grades, parental education, family members). Second part (11 questions) was about out-of-school activities, substance abuse and sexual behaviour. Third part of questionnaire (18 questions) was about gambling habits and was completed only by those students who answered yes to the questions: Do you gamble or play any betting game? For this analysis we used information about socioeconomic status, out-of-school activities and gambling habits.

The data were analysed using SAS 9.1, licensed at SRCE, site: 009245005. Data were sorted for analysis using program package Enterprise Guide 3.0. Logistic regression was used to compare socio demographic patterns of gambling and frequency of gambling with gender as the control variable. Dependent variables were socio demographic factors, converted into 2 categorical variables as shown in Table 3. The independent variable was frequency of gambling converted into 2 categorical variables; those who never gambled and those who gambled sometimes or often.

Results

Students were asked whether they have ever gambled. By asking about ever gambling for money 44.9% of the students answered yes. There is a significant difference among gambling between boys and girls. Majority of girls (84.8%) have never gambled compared to 31.4% of boys who have never gambled ($x^2 = 138.8$, $p < 0.001$).

For further analysis only those who gambled were analyzed and results were presented. Majority of students gamble few times a month (70.5%), 22.9% gamble 1-3 times a week and 6.6% of students gamble every day (Table 1). The most commonly reported gambling activity was sports betting (63.2%), followed by poker machines (9%), bingo (6.3%) and only one student reported internet gambling. They mostly bet on football and combination of sports. Money they use for gambling is mostly from their monthly allowance (95.1%) or they borrow it. Half of students

Table 1. Youth gambling habits

Type of high school	I n	II n	III n	IV n	V n	VI n (%)
Frequency of gambling						
Never	29	41	34	153	96	353 (55.10)
Occasionally	60	64	46	33	20	223 (34.79)
Often	18	23	12	10	2	65 (10.14)
Type of game						
Betting	43	57	44	24	14	182 (63.20)
Poker machines	15	4	2	2	3	26 (9.00)
Bingo	3	3	7	4	1	18 (6.30)
Lottery	2	3	1	8	2	16 (5.60)
Slot machines	1	9	0	0	0	10 (3.50)
Internet	0	0	0	0	1	1 (0.30)
Combination of those	14	11	4	5	1	35 (12.20)
Losing money						
Lost more	24	26	17	22	7	96 (33.30)
Earned more	13	12	11	5	5	46 (16.00)
About the same	41	49	30	16	10	146 (50.70)
Money spent on						
Gambling again	12	15	4	7	2	40 (13.90)
Cigarettes and alcohol	17	15	10	7	1	50 (17.40)
Other	49	57	44	29	19	198 (68.80)
Who do you gamble						
Alone	26	25	15	14	11	91 (31.60)
With friends	48	61	38	26	10	183 (63.54)
With family member	4	1	5	3	1	14 (4.90)
Do the parents know about gambling						
Yes and do not mind	46	46	32	21	16	161 (56.00)
Yes and forbid	8	20	15	6	2	51 (17.70)
No	24	21	11	16	4	76 (26.40)
Family gambling						
Yes	18	23	19	13	9	82 (28.50)
No	59	64	39	30	13	206 (71.50)
ID request						
Yes	43	48	29	23	7	152 (52.78)
No	33	39	29	20	15	136 (47.22)
How often do you gamble						
Every day	8	7	3	1	0	19 (6.60)
1-3 a week	14	24	15	6	7	66 (22.90)
Few times a month	53	56	40	36	15	203 (70.50)

Table 1. *(Continued from previous page)*

Type of high school	I n	II n	III n	IV n	V n	VI n (%)
Time spent gambling						
Not every day	50	57	38	37	18	200 (70.20)
Less than hour	20	19	17	5	4	65 (22.80)
1-3 hours	1	9	2	0	0	12 (4.20)
More than 3 hours	4	2	1	1	0	8 (2.80)
Worse in school because of gambling						
Yes	7	3	6	1	0	17 (6.00)
No	68	84	52	42	22	268 (94.00)
Need help to stop						
Yes	1	3	1	2	0	7 (2.50)
No	74	84	57	41	22	278 (97.50)
Seek help						
Yes	0	1	0	0	0	1 (0.30)
No, but will	5	4	3	2	0	14 (4.90)
Do not need	71	82	55	41	22	271 (94.80)
Betting sports						
Football	42	49	31	20	11	153 (54.10)
Basketball	1	0	1	0	1	3 (1.10)
Handball	2	0	3	0	1	6 (2.10)
Combination	30	38	22	22	9	121 (42.80)
Is gambling addiction						
Yes	16	30	10	23	4	83 (28.80)
No	40	28	29	13	14	124 (43.10)
Do not know	22	29	19	7	4	81 (28.10)
Money for gambling						
Allowance	70	85	57	40	22	274 (95.10)
Borrowing	8	2	1	3	0	14 (4.90)
Mean age of first time gambling	14.34	14.23	14.91	15.20	15.13	
Nervousness about the outcome 1 (the least) -10 (the most)	5.46	5.15	4.62	4.28	5.32	

Legend:
I technical; II vocational; III tourism and catering; IV general; V economics; VI total.

Table 2 Social factors

	n	%
Intension to go to university		
Yes	475	69.4%
No	196	30.6%
School success		
Excellent	139	21.7%
Very good	266	41.4%
Good	214	33.3%
Fair and falling	23	3.6%
Out of school activity		
Yes	364	56.7%
No	278	43.3%
Living place		
Urban	265	41.3%
Rural	377	58.7%
Parents live together		
Yes	563	87.7%
No	79	12.3%
Monthly family income		
More than 10000 kunas	108	16.8%
5-10000 kunas	334	52%
Less than 5000 kunas	200	31.2%
Montly allowance		
More than 600 kunas	43	6.7%
400-600 kunas	85	13.2%
200-400 kunas	244	38.0%
Less than 200 kunas	270	42.1%

Tablica 3 Association of social factors, gander and gambling

		Gambling occasioanaly or often OR(CI 95%)p
School	Technical vs. economics	4.14 (1.93-8.86) p<0.001
	Vocational vs. economics	2.88 (1.39-6.00) p=0.005
	Tourism vs. economics	5.65 (2.72-11.75) p<0.001
	General vs. economics	0.93 (0.48-1.82) p=0.836

Tablica 3 *(Continued from previous page)*

		Gambling occasioanaly or often OR(CI 95%)p
Intension to study at university	Yes vs. no	1.41 (0.85-2.36) p=0.187
School success	Fair and falling vs. excellent	2.85 (0.81-10.04) p=0.104
	Good vs. excellent	1.42 (0.75-2.70) p=0.280
	Very good vs. excellent	0.14 (0.65-2.00) p=0.645
Place of living	Urban vs. rural	0.18 (0.77-1.80) p=0.444
Parents	Live together vs. do not live together	0.82 (0.44-1.52) p=0.529
Monthly family income	More than 10 000 kunas vs. less than 5000 kunas	1.05 (0.54-2.03) p=0.887
	Over 10 000 kunas vs. 5000-10 000 kunas	0.78 (0.44-1.38) p=0.389
Allowance	More than 600 kunas vs. 200 kunas	0.58 (0.25-1.32) p=1.324
	More then 600 kunas vs. 200-400 kunas	0.89 (0.39-2.01) p=0.772
	More than 600 kunas vs. 400-600 kunas	0.99 (0.40-2.48) p=0.987
Out of school activity	Yes vs. no	1.58 (1.04-2.41) p=0.033
Gender	Female vs. male	6.53 (4.03-10.57) p<0.001

reported they have equally lost and earned money by gambling, third of them (33.3%) reported losing money (33.3%) and 16% of students reported they have earned money. Money they earned they spend on more gambling (13.9%), on cigarettes and alcohol or on something else (68.8%). They go to betting boots mostly with friends (63.54%), alone (31.6%) or with a family member (4.9%). Half of the students (56%) report their parents know of their gambling habits and do not object it, 26.4% do not know that their children gamble, and the least (17.7%) number of parents know about gambling and forbids it. Most of the students (71.5%) say they do not have family member who often gambles. Half of the students (52.8%) were asked to show ID card to prove that they are not underage. With regard to type of high school, the average age for the first time gambling event was 14.2 years (economic school), 14.3 years (technical school), 14.9 years (tourism school), 15.3 years (economic school) and 15.2 years (general high school).

Little number of students (7%) who gamble spend a few hours daily in sport betting boots. Almost all of the students (94%) believe that their gambling habits do not interfere with their school success, and many of them (43.1%) believe that gambling cannot

lead to addiction. Almost all the students think they do not need help to stop gambling, and 99.7% would never ask for professional help for gambling problems. On the scale of 1 to 10.35% feel very nervous (more than 5 on a scale) waiting for the outcome.

With regard to their school success, most (69.4%) of the student intend to continue education at the university, they (41.4%) are passing with a grade 4 (1-5), 33.3% with grade 3, 21.7% with grade 5, and 3.6% are passing with 1 or 2. They mostly lived in whole families (87.7%), with monthly income 5000 to 10 000 kunas (52%), less than 5000 kunas (31.2%) and more than 10 000 kunas (16.8%). Most of the students have some kind of out of school activity, mostly sports (87.4%). They mostly receive monthly allowance of 200 kunas (42.1%), 200 to 400 kunas (38%), 400 to 600 kunas (13.2%) and more than 600 kunas (6.7%). They come from rural (58.7%) and urban areas (41.3%). (Table 2.).

Compared to economic school, other students are more likely to gamble if thay attend technical school, (OR 4.14, CI 1.93-8.86), vocational (OR 2.88, CI 1.39-6.00) or tourism school (OR 5.65,CI 2.72-11.75) while thay were least likely to gamble if they attended general high scool (OR 0.93,CI 0.48-1.82). The risk is greatest for the technical students who are 4 times more likely to gamlbe compared to economic students. Students who have an out-of-school activity are 1.59 times more likely to gamble than students who do not have a free activity (CI 1.04-2.41). Other factors, such as intentention to go to university, school success, living in urban or rural place, family income and monthly alowance, were not significantly related to frequency of gambling. The odds of a male gambling more often were 6.53 times greater than the odds for girls (CI 4.03-1) (Table 3.).

Disccusion

Our study confirms the research results done by Dodig et al among Zagreb adolescents, that we in Croatia are now at the stage where countries like USA, Canada and Australia were 25 year ago, when they recorded the highest rate of problematic gambling. Until today, they have invested in numerous prevention programs, and recent research show that problem gambling rates are stable or decreasing in those countries [9]. While some EU countries, especially those with good social politics like Denmark, Finland, Norway, or Netherlands, invest big efforts into reducing the number of gambling facilities, here in Croatia, we are witnessing more and more gambling pools every day. They are easily accessible to youth under the influence of peer gambling, which makes then vulnerable to start gambling themselves [25]. Results of this study and high rate of ever gambling among high school students confirm that.

This study confirms that law about underage gambling is not enforced, since half of the students were never required to show an ID card, which is very worrying and shows that the law is enforced poorly. Only few of the students reported that they have earned some money by gambling, and most of them lost money. That points to the need to research the motivation of children for further gambling. So many parents know their children's gambling habits and half of them are not even concerned about them. Acceptance of gambling in families should worry the health professionals in a light of addiction prevention public health prevention programs, because lots of previous research showed greater influence of family compared to that of school programs. A big online Canadian study was conducted among 3089 parents of children between ages of 13 and

18 years. They explored the parents' attitudes, their awarenes and involvement in their children's gambling activities. Parents had to rate the seriousness of underage gambling among adolescents, and 60% of parents reported playing raffle and lottery tickets with their children. They placed gambling as a serious issue on place 12. It is promising that only few (8.1%) of parents think that their children have all the information they need about problem gambling and more than half of them would want more information in school papers, brochures, or on line. They believe that for children with gambling problem anonimous counsiling would be most helpful, then school couseling, addiction facilities or again over the internet [26]. Research among parents by Shead et al and Vachon et al showes that fathers are more likely to gamble themselves, and mother are more likely to play Bingo and lottery. Mothers are also more worried about pathological habits of their children then fathers. They have also reported a strong association between father's gambling and the risk for developing youth gambling problems [26,27].

We have found that almost a third of students who gamble do it few times a week or even daily, and yet only third of them know and state that gambling can cause a serious addiction. That is very worrying in terms of prevention programs and their education, since by the last year of high school they should have learned about it on several occasions. That is concordant with other results, that they are not worried about gambling impact on their school grades and they do not think they need help with any gambling issue.

Comparison of national gambling rate is pretty imprecise because of different age of subjects. One study which is easiest to compare to our results because of similar age is US survey among 12 grade students, which shows similar gambling rate. They have found that 22% of boys and 5% of girls gambled weekly in the past year [33].

Of all the social factors that we studied, only the type of high school and having free activity were significantly related to gambling. Other factors like intention to study, school success, all family and neigbourhood factors were not related to gambling, which confirms our hipothesis.

The odds for gambling are significantly higher among vocational high school students, which confirms the results from other studies where poorer education was related to problem gambling [16,17,29,30]. Playing sports, as an out of school activity is also risk factor for gambling. Those results are found in other research as well [31,32]. In our study, out of school activity that most students engage in is sport, so we can conclude that playing sports enhance their interest for sport and sports results, and that is exactly what they mostly bet on. Much higher gambling rate among men was also confirmed in other researches [17,29]. Although some research had shown that family factors, like lower financial family status [15] and bad family climate [16,30] were related to gambling problems, our study did not confirm that.

Public accessibility of gambling to teenagers and the results of our study stress the need for developing the public health prevention programs for early assessment of problems and interventions for problem gambling. We, as public and health professionals should educate the population about negative gambling consequences and raise public awareness that underage gambling is an offence and not appropriate activity for children. The current study suggest that

prevention may be required more for males, and specific group of youths, such as technical school students and those actively involved in sports.

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Conflict of interest

None to declare

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Kockanje u populaciji adolescenata Bjelovarsko-bilogorske županije – Pojam 'kockanje' odnosi se na investiranje nečeg vrijednog u događaj s nesigurnim ishodom za šansu osvajanja novca ili nagrade. Glavne karakteristike kockanja su rizik i nesigurnost ishoda. Ovo je ispitivanje uključivalo 641 učenika posljednje godine srednje škole. 44,9% studenata su ikada kockali. Većina studenata se kocka nekoliko puta mjesečno (70,5%) a 6,6% studenata kockaju svaki dan. Najčešći način kockanja je sportsko klađenje (63,2%) i učenici odlaze u kladionice većinom s prijateljima (63,54%). Polovina studenata (56%) navode da roditelji znaju za njihove kockarske navike i nemaju nikakvih primjedbi na njih, većina studenata (71%) također javlja da u obitelji nemaju nijednog člana koji često kocka. Polovina studenata (52,8) doživjela je da im zatraže osobnu iskaznicu da dokažu da nisu maloljetni. Gotovo svi studenti (94%) vjeruju da njihove kockarske navike ne utječu na njihov uspjeh u školi i mnogi od njih (43,1%) vjeruju da kockanje ne može dovesti do ovisnosti, a 99,7% ne bi nikad tražilo profesionalnu pomoć zbog problema s kockanjem. U usporedbi s ekonomskom školom, veća je vjerojatnost da će učenici kockati ukoliko idu u tehničku školu (OR 4,14, CI 1,93-8,86), zanatsku (OR 2,88, CI 1,39-6,00) ili turističku školu (OR 5,65,CI 2,72-11,75) dok je najmanja vjerojatnost da će kockati ukoliko idu u opću gimnaziju (OR 0,93,CI 0,48-1,82). Rizik je četiri puta veći za učenike tehničkih škola. Drugi čimbenici, kao što su želja za nastavljanjem edukacije na sveučilištu, uspjeh u školi, život u gradu ili na selu, mjesečni prihodi obitelji i mjesečni džeparac nisu značajno povezani s frekvencijom kockanja. Javna dostupnost kockanja tinejdžerima i rezultati našeg istraživanja naglašavaju potrebu za stvaranjem javno-zdravstvenih programa prevencije za rano otkrivanje i intervencije kod problema s kockanjem.

Ključne riječi: kockanje, tinejdžeri, Bilogorska regija