ROMANIAN NATIONAL PREVALENCE STUDY – PROBLEM AND PATHOLOGICAL GAMBLING IN CHILDREN AND ADOLESCENTS

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Abstract

Background and aims. The purpose of the present study was to measure the prevalence of problem and pathological gambling in children and adolescents at a national level, given that previous studies at regional level had demonstrated high rates of prevalence.

Methods. After designing the sample (2006 children and adolescents aged 11-19 years) we used two validated instruments for measuring the prevalence of problem and pathological gambling in children and adolescents – South Oaks Gambling Screen –Revised for Adolescents (SOGS-RA) and 20 Questions of Gamblers Anonymous Revised for Adolescents (20 GA-RA).

Results. The following data have been found: gambling at risk is 7.1% and problem and pathological gambling is 4%, when results were analyzed by SOGS-RA; prevalence of problem gambling is 10.1% and pathological gambling is 2.6% when results were analyzed by 20 GA-RA.

Conclusions. High rates of prevalence are noticed in Romania, similar to other European countries. This rates are based on self-reported questionnaires, meaning that real rates may be higher than reported, being known that children and adolescents tend to give socially expected response. An important issue is that we found pathological gambling at the age of only 11 years. Our results compared to those of other studies from Romania are very similar to those from other European countries.

Keywords: Romania, national prevalence, problem gambling, pathological gambling, children, adolescents

Background and aims

Children and adolescents represent the target population with the highest risk for developing impulse control disorder. This disorder can have devastating consequences because of the rising availability of places for gambling, easy access and diversity of games on the market. Pathological gambling is nowadays one of the most dangerous problems children and adolescents are confronted with[1].

It is obvious that children and adolescents play more because of the availability and diversity of games of chance. Studies indicated that 10% of adolescents have problems with games of chance and their consequences: lying about gambling, damage of social relationships, excessive concern with the impossibility to stop gambling, repeated borrowing and/or thefts of money to continue playing, school absenteeism because of gambling [1,2].

Lupu, 2009 [3] reviewed the empirical evidence on gambling and problem gambling in Romania. To date there have been no national gambling prevalence surveys although some regionalized research has been carried out. Although there has been little research into adult gambling in Romania, there has been some research on adolescents. Lupu et al. [4] examined the prevalence of problem gambling using the GA-20 scale in three Romanian counties on 500 high-school students with ages between 14 and 19 years (57% female and 43% male). They reported that 34 schoolchildren (6.8%) were identified as problem gamblers (scoring 7 or more out of 20 on the gambling scale). Of these 34 individuals, the majority were male (n=28). The most frequently played

games by Romanian teenagers were: poker (35%), football pools (56%), bingo (32%), basketball betting (6%), blackjack (3%), and roulette (3%). Two-thirds of the sample gambled very frequently (64%) with 18% gambling rarely or very rarely. Most played in groups (82%) whereas the rest played alone (18%). The mean age at which the participants began gambling was 14 years. Findings also showed that 18% of the problem gamblers had alcoholic fathers and 12% had fathers who were problem gamblers. No significant differences were found between problem and non-problem gamblers in relation to family income and social status. In another study, Lupu et al. [5] analyzed the risk factors for problem gambling in 231 Romanian adolescents aged between 14 and 18 years. Using the GA-20 scale, the authors categorized the participants into three groups: non-gambling/recreational gambling, occasional gambling (0-1 positive answers – Level 1); problematic gambling (2-7 positive answers – Level 2); pathological gambling (7-20 positive answers – Level 3). Results revealed that 34% were non-gamblers or only gambled very occasionally (Level 1); 54% were defined as problematic players (Level 2); and 12% were defined as pathological gamblers (Level 3). Risk factors for pathological gamblers included: parental divorce, serious physical illness of a family member, death of a family member, family break-up, psychological illness in a family member, sexual abuse, and being in a severe accident. The terms "problem gambling" and "pathological gambling" are used to reflect more precisely the differing severities of addiction. Problem gambling also needs to be distinguished from social gambling which occurs with friends or colleagues and lasts for a limited period of time, with predetermined acceptable losses. There are also those who gamble alone in a non-problematic way without any social component. Some individuals can experience problems associated with their gambling, such as loss of control and short term chasing behavior (whereby the individual attempts to recoup their losses), that do not meet the full criteria for pathological gambling which is the most severe situation [1].

Results also showed that 14% of problem gamblers used illegal drugs. Lupu et al. (2001) [5] identified two distinct types of pathological gambler:

1) Adolescents from an unfavorable family and social environment, who had to deal with stress and trauma (e.g., neglect physical, and/or sexual abuse). Here, gambling was a coping mechanism to deal with chronic stress.

2) Adolescents from a favorable family and social environment with a medium to high income, where parents neglected the child because the parent worked too much. Here, gambling was a way to spend time and/or to attract a parent's attention. Lupu, 2009 [3] noted that the significant prevalence of pathological gambling among Romanian adolescents in the study by Lupu et al. [5] was confirmed by similar cases in Romanian child psychiatry clinics.

The most recent adolescent gambling study was carried out by Lupu et al [6], with 1032 adolescents aged 11–19 years.

The GA-20 was again used to assess problem gambling. The results showed that 73% gambled at a recreational level and 3.5% at a pathological level. Males were more likely to be pathological gamblers than females. The mean age of pathological gamblers was 16.5 years [6]. The games most played by pathological gamblers were sports betting/slot machines (36% of players) and lotto/internet casino/pool bets (25%). Moreover, pathological gambling was associated with alcohol (66.7%), illegal drugs (13.9%), legal drugs (19.4%), and smoking cigarettes (16.7%). Another representative dataset concerning adolescent gambling [7] was found by another study on 2770 Romanian students aged 16 years derived from the 2011 ESPAD study and the rate of probable problem gambling was 4.9% using the Lie/Bet Scale.

Establishing the prevalence and comparative studies are difficult to conduct because of the differences referring to age, location, sample size and type of measurement.

The aim of the present study was to measure the national prevalence of problem and pathological gambling in children and adolescents (11-19 years).

Methods
Participants
The minimum number of participants and for a level of confidence of 95% the sample has to be at least 1067. The pupils were chosen from schools in Romania based on a randomized sample [1]. The number of the participants all students was 2006 aged 11 to 19 years. The Mean age was 15.04 ±2.3; 48.3% were males and 51.7% were females; 21.2% were from the rural zone and the majority 78.8% from urban zone.

The sample was made up of students from big regions of Romania: North-West, North-East, South-East, South-West, South, Centre and Bucharest. For each region we had to choose students from: College, Secondary, School groups, High school or other type from the fifth grade to thirteenth, observing the age span and the distribution of rural versus urban location. In each school we randomly chose the year groups (Tables I, II).

Table I. Sample distribution according to region.

	Frequency	Percentage	Cumulative percentage
North-East	858	42.8	42.8
South-East	558	27.8	70.6
South	254	12.7	83.3
South-West	26	1.3	84.5
North-West	87	4.3	88.9
Centre	24	1.2	90.1
Bucharest	199	9.9	100.0
Total	2006	100.0	

Table II. Distribution by school years according to environment.

Years	Urban	Rural	Total
5-8	22	22	44
9-13	41	4	45
Total	63	26	89

Procedure

The first step was to establish the sample according to some criteria – children and adolescents aged 11 to19 years attending schools all over Romania. We had a list of all schools in Romania (from the Minister of Education) and according to the regions presented above we randomly selected schools and year groups to apply questionnaires. We initially set up the working group (we had a team working on applying questionnaires in each school from the sample designed) and collecting the data and then we also introduced it in data bases (those operators who applied questionnaires had to introduce data in SPSS) and finally we analysed the data. All data were obtained after having the informed consent of the participants and their parents (as they are minors).

Instruments

We applied questionnaires that target demographic data (school, class, city, county, age, gender, nationality); family characteristics, socio-cultural and individual traits of gambling; other risk behaviors (substance abuse); types of favorite games; questions regarding the way they perceive gambling and its control and 2 questionnaires for the screening of problem and pathological gambling: South Oaks Gambling Screen –Revised for Adolescents (SOGS-RA) and the 20 Questions of Gamblers Anonymous Revised for Adolescents –(20 GA-RA), described and validated in previous studies [1].

SOGS-RA has 16 items which assesses gambling behavior in the last 12 months adapted for childhood and adolescence. with a good reliability (.80) and validity [8,9,10,11,12,13].The new instrument focuses on the frequency of gambling and on other behaviors that accompany gambling while SOGS focuses on the matter of money.

20 GA-RA, used for measuring the intensity of pathological gambling among children and adolescents has 20 questions with "yes or no" answers. The sum of these twenty items was the total 20 GA score which served as the criterion for assessing the severity of gambling with a high internal consistency coefficient- .94. [1,6,14,15,16].

Results

Prevalence of problem and pathological gambling according to SOGS-RA

Gambling is on a continuum from absence of any behavior related to gambling, to gambling as a social activity and practiced for amusement from time to time, to gambling at risk when the behavior starts to be more frequent, to problem gambling when the behavior becomes obsessive and much of the time and money are dedicated to this activity and to pathological gambling when entire functionality of the individual is affected.

4% from the sample are problem or pathological gamblers and 7.1% are at risk to develop pathology (Figure 1).

32.6% of respondents from 2006 participants declared they had gambled at least once in their life and 22.6% that they gambled in the last year. 653 participants gambled at least once in their life and were asked what their age at the first game was. They started at 11 years of age (105 participants).

Scores at SOGS-RA ranged between 0 and 11 points. That means that they gamble at risk (2 to 3 points) and they are problem and pathological gamblers (above 4 points at SOGS-RA).

From the entire sample (N=2006) 52.69% were female and 16.9% declared they gambled at least once in their lives. From the male participants 49.3% gambled at least once.

11.3% from the female participants and 34.8% from males declared they participated in gambling activities in the last year. Mean age of the onset was 13.34±2.80 years in female and 13.64±2.45 years in male.

29.4% drank alcohol, 6.0% did drugs and 17.3% smoked. Gambling at this age span is accompanied by alcohol and smoking. For an explanatory model studies of moderation and mediation must be conducted.

7.0% declared that at least one parent gambled. It is well known that parents of gamblers gamble more than those of the children who do not gamble at all. This behavior is better manifested when learnt throughout vicariate learning.

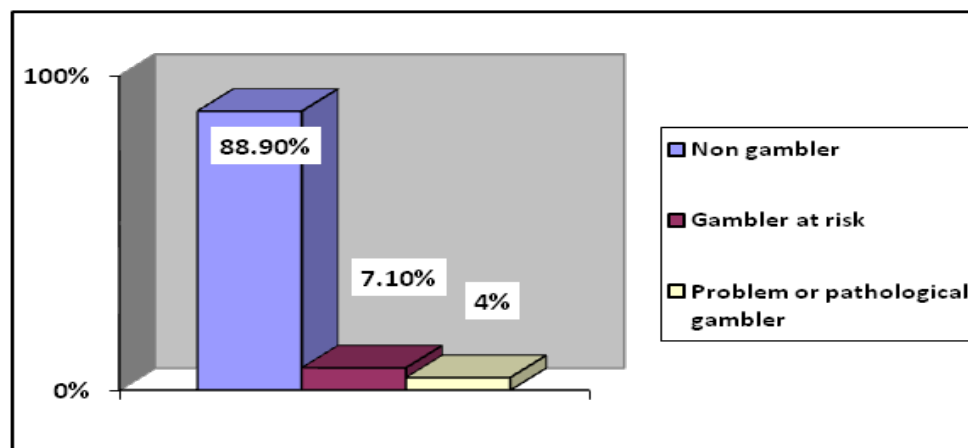**National prevalence according to SOGS-RA**

Figure 1. Problem and pathological gambling according to answers given at SOGS-RA.

79% of the problem and pathological gamblers considered they gambled more then they planned. 3.8% considered that they determined the game. This percentage is almost equal to the percentage of problem and pathological gamblers. 55% of those who had more than 2 positive answers considered that they controlled the output of the game.

Gambling prevalence according to answers given at 20 GA-RA

Scores were distributed from 0 to 20. For a diagnostic of problem gambler one had to positively answer 2 to 6 questions and for pathological gambling they had to give more than 7 answers (Figure 2).

2.6% were pathological gamblers and 10.1% were problem gamblers. That means that 12.7% from the school population aged 11 to 19 years should be referred to a special health service for prevention or intervention. This instrument compared to SOGS-RA considers problem and pathological gamblers as different categories.

Data has to be very carefully analyzed because SOGS-RA gives information about gamblers at risk on the one hand (7.1%) and problem and pathological gamblers on the other hand (4%). 20 GA-RA gives information about problem gamblers on one hand (10.1%) and pathological gamblers on the other hand (2.6%).

Mean age of problem gamblers was 16.32 years and of pathological gamblers 16.83.

85.2% from pathological gamblers felt like going back to regain what they had lost and 20.4% thought of suicide because of problems caused by gambling. This percentage is also found in literature too: one in 5 pathological gamblers attempt suicide.

Their parents were in 67.9% of cases married while the non-gamblers' parents were married in 72.5% of cases. 52.8% of pathological gamblers' families have good and very good incomes. Their grades for the previous semester are of a mean of 7.84±1.10.

The following Table combines the results obtained in the national prevalence study comparing the answers to the two instruments validated (Table III).
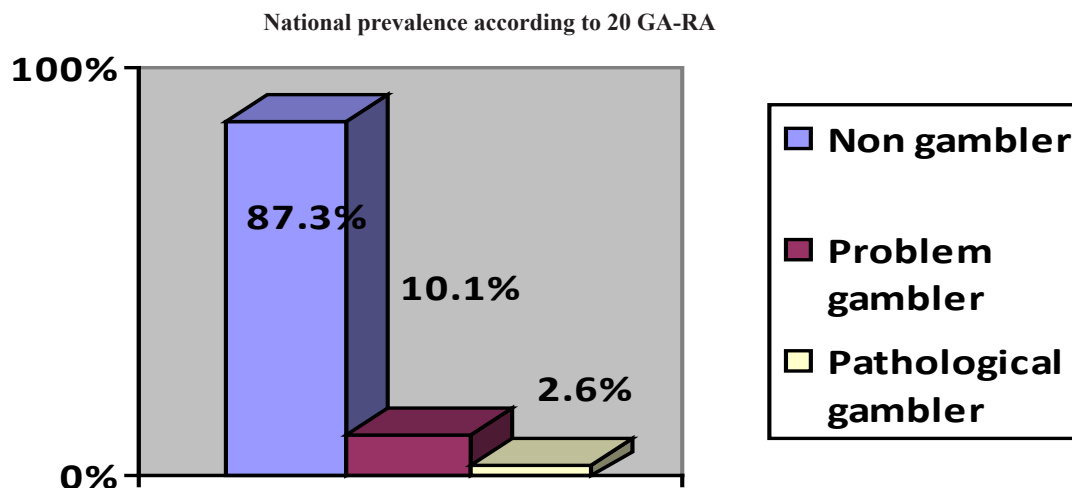

Figure 2. Prevalence of problem and pathological gambling according to answers at 20 GA-RA

Table III. Results according to SOGS-RA and 20 GA-RA.

Dimension analyzed	SOGS-RA	20 GA-RA
Sample	2006 children and adolescents, 11-19 year, school population from all types of schools 7 geographical zones: NE, SE, NW, NE, S, Centre, Bucharest, 48.3% male, 51.7 % female	
Gamblers	- 4.0% (81) problem or pathological gamblers - 91.4% were male from the above category - 7.1% (142) at risk	- 2.6% (53) pathological gambling - 90.4% were male from the above category - 10.1% (203) problem gambling
Preferred games	Scratch cards – 23.2% Lotto – 22.9% Tickets with prizes – 21.2% Dices for money – 19.5%	
Way of gambling	Individual - 31.2% In group – 68.8%	
School results of pathological gamblers	From 6 to 10 7.48±1.10	
Absenteeism of pathological gamblers	32.1% declare that absenteeism will affect their evolution in academic preparation	
Incomes of pathological gamblers	Moderate and above medium incomes - 52.8%	
Perception of control of the gamblers	Can control the outcome of the game - 55%	
Mean age of onset	13.56±2.55 years	

Discussion

The present study investigated 11-19 years old children and adolescents from schools all over Romania, a sample which permits the generalization of the data obtained. We followed all the rules to make a national prevalence study and we collected the data.

According to our study the national prevalence of at risk gambling is 7.1% and of problem and pathological gambling is 4% when results were analyzed by SOGS-RA; prevalence of problem gambling is 10.1% and of pathological gambling is 2.6% when results were analyzed by 20 GA-RA. An important issue is that we found pathological gambling of the age of only 11 years.

Our results compared to those from other studies from Romania are much similar to those from other European countries. A growing number of researches indicate a rising in the prevalence of pathological gambling in the last period and most of the cases are diagnosed during adolescence especially in countries from the Western Europe [7,17] (Table IV).

An analysis of European studies on pathological gambling in children and adolescents evidenced that Olason, [25] using SOGS-RA on 3511 teenagers 13-15 years old found risk gamblers at a prevalence of 4,1% and

problem gamblers at 2.8%.

In Lithuania, Skokauskas [26] using the same questionnaire on 835 teenagers 10-18 years old found for at risk gamblers a prevalence of 10.5% and for problem gamblers of 5.2%.

As a general observation – it is difficult to compare results as each country uses different instrument to assess the same problem.

According to Espad report, 2015 [27] values similar to those found in Romania (6%) were found in countries like Bulgaria, Estonia, Macedonia, Hungary, Italy, Lithuania, and Monaco. In Finland (13%), Greece (16%), Ireland (11%) and Nederland (9%) average were higher than the average (7%). In countries like Albania (3%), Georgia (4%), Island (4%), Moldavia (3%) prevalence is under the average. In this report too it is underlined that boys gamble more than girls do.

The **limits** of the present study were that the questionnaire was self-reported, data could be influenced by the participants lying, the sample was formed exclusively from the school population, while children and adolescent pathological gamblers usually renounce to school. The sample distribution given by experts in sociology was pretty much unequal.

Table IV. The prevalence of problem/pathological gambling in different European countries

Year	Authors	Country	Instrument	Problem/Pathological Gambling Number of participants /Age	Prevalence
2014	Molinaro et al. ESPAD study 2011 [7]	Albania	Lie/Bet Scale	3189 students Aged 16 years Problem gambling	5.3%
2014	ESPAD study 2011 [7]	Cyprus	Lie/Bet Scale	4243 students aged 16 years	problem gambling witch was 4.4%
2013	Dodig et al. [18]	Croatia	CAGI	1948 students aged between 14 and 20 years	16.9% - low to moderate problematic gamblers 12.3% -severe gambling
2014	ESPAD study 2011 [7]	Denmark	Lie/Bet Scale	2181 16 years	1.6% problematic gambling
2014	ESPAD study 2011 [7]	Finland	Lie/Bet Scale	3744 participants	4.8%.-problem gambling
2011	Duven [18]	Germany	DSM-IV-MR-J	3967 students aged between 12 and 18 years.	2.2%
2014	Molinaro et al. ESPAD study 2011 [7]	UK	Lie/Bet Scale	1712 students	2.2%
2015	Floros [20]	Greece		2017 students between 12 and 19 years of age	4.1% - problem gambling
2011	Olason [21]	Iceland	DSM-IV-MR-J	1537 students aged 13–18 years	2.7% - at-risk gamblers 2.2% - problem gamblers
2014	Molinaro et al. ESPAD study 2011 [7]	Italy	Lie/Bet Scale	4837 16 years	2.6% - problem gambling
2014	Molinaro et al. ESPAD study 2011 [7]	Lithuania	Lie/Bet Scale	2476 participants	4.2% - problem gambling
2015	Hanss et al.[22]	Norway	PGSI	2055 adolescents aged 17 yea	0.2% - problem gambling
2014	Molinaro et al. ESPAD study 2011 [7]	Serbia	Lie/Bet Scale	6084 participants	3.1% - problem gambling
2015	Miquez et al. [23]	Spain	SOGS-RA	1447 students from Galicia (aged 11–16 years)	4.6% - problem gambling
2015	Froberg [24]	Sweden	PGSI	2318 of youth aged 16–24 years	2.3% had a first episode of problem gambling

A **future perspective** should include primary prevention programs for all population above 10 years because the age of onset was very close to this age.

Recent studies reviewed literature regarding prevalence studies in problem gambling [3]. Countries like USA, Denmark, Finland, and Iceland used SOGS-RA to investigate problem and pathological gambling in children and adolescents. Their prevalence rates are similar to the rates found in Romania.

Conclusions

National prevalence (sample 2006 children and adolescents aged 11-19 years) was established by using two assessment instruments validated on Romanian population: SOGS-RA and 20 GA-RA. According to the first scale gambling at risk is 7.1% and of problem and pathological gambling is 4%; prevalence of problem gambling is 10.1% and of pathological gambling is 2.6% when results were analyzed by 20 GA-RA. Pathological gambling was found as early as the age of 11 years. Our results compared well with other studies, Romania is much similar to European countries.

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