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Social and lifestyle characteristics of sports bettors in Serbia

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Summary

Aim: The aim of our study was to examine the prevalence of sports betting in the previous month in Serbia and its association with social and lifestyle characteristics.

Methods: The analysis of the data from the cross-sectional survey National Survey on lifestyles in Serbia: substance abuse and gambling conducted in 2014 was performed. 10% of participants reported sports betting in the past 30 days.

Results: Sports betting was associated with male gender, living in urban areas compared to living in rural areas, having secondary education compared to having primary education, being employed compared to being retired. Sports betting in the previous month was also associated with binge-drinking compared to abstaining from alcohol, non-prescription use of anti-anxiety medications compared to no use of anti-anxiety medications and low/ moderate problem gambling compared to no problem gambling as measured by PGSI. However, it was not associated with a higher risk of tobacco smoking and illicit drug use.

Conclusions: The association of sports betting with risk behaviors among young males should be a concern for public health authorities.

Keywords: sports betting; factors; gambling; problem gambling.

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INTRODUCTION

Sports betting is any placement of money on the outcome of any local, national, or international sports activity (2). Sports betting is becoming an increasingly available type of gambling game in many countries due to more liberal legislation and market developments (3). It has been one of the gambling games which are strongly associated with problem gambling in recent years (2,3). The prevalence of problem gambling is significantly higher among sports bettors compared to the general population, and they have almost 2.3 times higher likelihood for problem gambling (5,6).

Traditional forms of sports betting were organized as the nation-wide lotteries in many European countries, and the bets were placed during the week. This type of gambling was not associated with possibilities for the development of problem gambling (7). Sports betting today is more frequent and more intense and consequently could be associated with gambling disorder (7). A recent increase in participation in on-line odds and live betting can be observed (7). Structural and situational characteristics of on-line and especially live betting (i.e. unlimited availability, gambling in turn, frequency of betting, parallel gambling activities, lack of social control, etc.) provide strong impulses reinforcing urge to play and leading to the development of a gambling disorder (8–10). Young men in particular represent a highly vulnerable group (11).

Advertisers typically present sports betting as a usual form of social interaction among males, which is becoming widely accepted in social and workplace settings and is no longer associated with any social stigma. Following a massive development in the availability of sports betting in the past decade, the 'in-play' betting developed, which allows bettors to place bets during a match (12). Sports betting can now include an outcome of the match, the events in the match, or so-called micro-events. It involves betting on a specific event in the match, such as the outcome of the next point in tennis (12). This all provides constant betting cues and increases the likelihood of problem gambling (13).

The most recent research on demographic characteristics of sports bettors showed that, unlike traditional problem gamblers, they are more often young males (2). The target group for almost all betting advertisements is a young, single, professional male (3,6). This population of young, single, employed, or studying males is at high risk for developing problem gambling associated with sports betting (6). These characteristics differentiate the population who is at risk from problem gambling due to sports betting from the population who receives treatment for problem gambling (i.e. middle-aged, married, with different educational levels, playing most commonly casino games) (6). Some studies showed that sports bettors, although younger, have a higher income than gamblers who engage in other forms of gambling. However, others found that there was a link between sports betting and a lower income, or found no association between income and sports betting at all (13-15). Being single and/ or never being married was also associated with problem gambling among sports bettors as was having an undergraduate degree (2). Sports bettors at risk of problem gambling have a high risk of alcohol use and illicit drug use (16).

The study of gambling participation and problem gambling in Serbia showed that sports betting is associated with more than 35 times higher likelihood of problem gambling (18). To the best of our knowledge, no study has examined socio-demographic, socio-economic, or lifestyle characteristics of sports bettors in Serbia. The aim of our study was to examine the prevalence of sports betting in Serbia in the past month and its association with social and lifestyle characteristics.

METHODS

Data source/sample

The cross-sectional study included 5385 participants, aged 18-64 and was a secondary analysis of the data from the National Survey on lifestyles in Serbia: substance abuse and gambling, conducted during 2014 [18].

A total of 8079 households were eligible to participate (out of 11144 visited households). Exclusion criteria were: age under 18, individuals serving prison sentences, or individuals in other sorts of institutions such as hospitals, therapeutic communities, social care centres, homeless individuals and individuals living in illegal communities.

Sampling was done in accordance with Probability Proportion Sampling – PPS, with the use of multistage cluster sampling (19). The sample was representative of the general working-age population in Serbia (18-64 years). To provide representativity of the sample, small territorial units were selected randomly with probability proportional to the population size. Then, each unit was selected using the National household registry as a sampling frame. The respondents in each of the selected households were selected using the Kish grid. The sample was weighted for the sex, age, educational level, regions, and urban or rural areas.

The procedure of data collection

The data collection was conducted between January and March 2014. Face-to-face interviews were used for data collection with the questionnaire specially developed for the National Survey on Lifestyle in Serbia: Substances Abuse and Gambling, 2014. The questionnaire consisted of 158 items. The first part was on socio-demographic characteristics. The second part was on lifestyle characteristics with Beverage Specific Quantity Frequency-BSQF Instrument developed during Standardized measurement of Alcohol-related troubles-SMART project (20), Kessler psychological distress scale, Problem Gambling Severity Index (PGSI), use of illicit drugs, and prescription/ non-medical prescription drug use.

Measures

Sports betting engagement was assessed with yes/ no question: 'Have you done sports betting in the past 30 days?' (Yes/No). Participants who answered "Yes" were categorized in the group of sports betting in the past 30 days and participants who answered "No" were classified in the group of "No sports betting in the past 30 days".

The questionnaire also contained yes/no questions on playing casino games and using slot machines: 'Have you played casino games/used slot machines in the past 30 days?'

Self-perceived financial status was assessed with the question: 'How would you describe your financial status?' (very good, good, average, poor, very poor). Then we merged the categories of 'very good' and 'good' in one (good) and categories 'poor' and 'very poor' in another one (poor). Smoking status was assessed with the question 'Have you ever smoked tobacco?', and participants were divided into current smokers, ex-smokers, and non-smokers (Yes, I currently smoke/ I used to smoke, but not anymore/No, I am not a smoker). The set of questions on alcohol use was developed during the Standardized Measurement for Alcohol-Related Troubles Project (SMART project), funded by the European Union (20). This part of the questionnaire consisted of Beverage Specific Quantity Frequency Instrument with three questions for the assessment of the quantity of each alcoholic beverage (beer, wine, and spirits) drunk and drinking frequency. Drinking frequency for each alcoholic beverage was assessed with the question: 'In the past 12 months how often did you have an alcoholic drink?'(every day/ 5-6 days per week/ 3-4 days per week/ 1-2 days per week/ 2-3 days a month/ 1 day a month/ 6-11 days a year/ 2-5 days a year/ once in the year prior to the study and no drink in the year prior to the study). The quantity was then calculated in milliliters (20). All participants who reported drinking at least once in the past 12 months were classified as 'alcohol consumers'. All participants who reported drinking at least five standard drinks (the amount of 1.5 l of beer= five beers of 0.33l, 0.7l of vine= five glasses of the vine of 0.14l or 0.15l of spirits= five glasses of 0.03l of spirits on one occasion in the year prior to studies) were classified as 'binge drinkers'. Illicit drug use was assessed with the yes/no question 'Did you use any illicit substance in the past 30 days?'

Gambling severity was assessed with Problem Gambling Severity Index- PGSI (21)non-problem, low-risk, moderate-risk and problem gamblers, only the latter category underwent any validity testing during the scale's development, despite the fact that over 95% of gamblers fall into one of the remaining three categories. Using Canadian population data on over 25,000 gamblers, we conducted a comprehensive validity and reliability analysis of the four PGSI gambler types. The temporal stability of PGSI subtype over a 14-month interval was modest but adequate (intraclass correlation coefficient = 0.63. PGSI is a nine-item scale used to screen individuals with high risk for pathological gambling (α =0.97). The PGSI answers are presented on a four-point Likert scale with the possible answers ranging from never (0) to almost always (3). PGSI total scores vary between 0 and 27. Based on the score on the PGSI scale the participants who reported gambling were divided into three categories: 0 = nonproblem gambler, 1-7 = low/moderate risk gambler, 8-27 = problem gambler. Some studies showed that there were no significant differences between low and moderate risk gamblers on almost every variable examined, which was also showed in our initial analyses (21–23)non-problem, low-risk, moderate-risk and problem gamblers, only the latter category underwent any validity testing during the scale's development, despite the fact that over 95% of gamblers fall into one of the remaining three categories. Using Canadian population data on over 25,000 gamblers, we conducted a comprehensive validity and reliability analysis of the four PGSI gambler types. The temporal stability of PGSI subtype over a 14-month interval was modest but adequate (intraclass correlation coefficient = 0.63. Accordingly, we merged the categories of low-risk gamblers and moderate-risk gamblers in the category of low/moderate-risk gamblers.

Psychological distress was examined using the Kessler psychological distress scale. The Kessler psychological distress scale is a 6-item questionnaire with questions about anxiety and depression symptoms that a participant has experienced in the past four weeks (24) which we refer to as the K10 and K6, were constructed from the reduced set of questions based on Item Response Theory models. The scales were subsequently validated in a twostage clinical reappraisal survey (N = 1000 telephone screening interviews in the first stage followed by N = 153 face-to-face clinical interviews in the second stage that oversampled first-stage respondents who screened positive for emotional problems, α =0.87. Answers on the Kessler psychological distress scale are provided on a 5-point Likert scale, varying from never (1) to always (5). According to the score on this scale, our participants were classified into three categories: no risk (≤ 7 points), moderate emotional distress (8-12 points), and high risk of emotional distress (\geq 13 points).

The use of anti-anxiety medications was assessed with the following questions: 'Have you taken any anti-anxiety medication in the past 12 months? (yes/ no)' and 'If you have taken any anti-anxiety medication in the past 12 months, how did you obtain the medication? (physician's prescription/ bought it in the pharmacy without prescription/ obtained it from a friend or family member/ bought them via internet/ obtained it in some other way)'. Based on the answers to these two questions, the participants were classified into three categories: no use of anti-anxiety medications, prescription-only use, non-medical prescription drug use.

The ethical committee of the Republic Institute of Public Health approved the National Survey on Lifestyle: Substance Abuse and Gambling 2014 (No.178/1, January 16th, 2014). The participants were given oral and written information about the study, its processes, and aims and they gave consent for participation.

Variables

The total of 16 variables was analyzed. These variables were: age, gender, place of residence (urban/rural), level of education, marital status, employment status, religiousness, self-perceived financial status, smoking status, alcohol consumption, score on Kessler emotional distress scale, illicit drug use, anti-anxiety medication use, playing casino games, using slot machines, PGSI score.

Statistical analyses

Data were expressed with absolute numbers, means \pm SD, and frequencies (percentages). Chi-square test was used to assess differences between participants who reported doing sports betting and participants who reported no sports betting in the past 30 days on all variables (socio-demographic and socio-economic characteristics, lifestyle characteristics, and score on Kessler psychological distress scale). All variables which were shown to be

significant were entered in the multivariate logistic regression analysis with sports betting in the past 30 days as an outcome variable. P-values were considered statistically significant if p<0.05. All analyses were done in the Statistical Package for Social Sciences SPSS 22.0.

RESULTS

The study included a total of 5385 participants. Almost one-fifth of the participants, 17.2% (927/5385) reported that they had betted on a sports event in the year before the study and 537 participants (10.0%, 537/5385) reported sports betting in the month before the study.

The participants who reported sports betting in the past 30 days and participants who did not report sports betting in the past 30 days differed significantly on majority of socio-demographic and lifestyle characteristics. A significantly higher percentage of participants who reported sports betting in the past 30 days were males (93.7% vs. 44.8%, p<0.001), lived in urban areas (70.4% vs. 59.9%, p<0.001), were single (59.4 % vs. 39.6%, p<0.001), had secondary education (70.0 % vs. 52.9%, p<0.001), were binge-drinkers (58.0 % vs. 25.1 %, p<0.001), used anti-anxiety medications without prescription in the year before the study (10.6% vs. 3.6%, p<0.001), played casino games(4.3% vs. 0.2%, p<0.001), or used slot machines in the past 30 days (6.3% vs. 0.2%, p<0.001) and were at risk of low/ moderate (14.6% vs. 1.4%) or problem gambling (2.6% vs. 0.1%) p<0.001 (table 1).

The socio-demographic, socio-economic and lifestyle characteristics of the participants are presented in **Table 1**.

Table 1. Characteristics of the participants who reported sports betting and participants who did not report sports betting

	Total	Sports betting	No sports betting	p-value
Independent variables	No (%)	No (%)	No (%)	
Gender				
Males	2676 (49.7)	504 (93.7)	2172 (44.8)	
Females	2709 (50.3)	34 (6.3)	2675 (55.2)	<0.001*
Age (in years) (X±SD)	42.18±13.63	34.45±11.70	43.04±13.56	<0.001**
Place of residence				
Rural	2103 (39.1)	159 (29.6)	1945 (40.1)	
Urban	3281 (60.9)	379 (70.4)	2903 (59.9)	<0.001*
Marital status				
Single	2239 (41.6)	319 (59.4)	1919 (39.6)	
Married/permanent relationship	3147 (58.4)	218 (40.6)	2928 (60.4)	<0.001*
Level of education				
Primary	1418 (26.3)	90 (16.8)	1328 (27.4)	
Secondary	2941 (54.6)	376 (70.0)	2566 (52.9)	
College/faculty	1025 (19.0)	71 (13.2)	953 (19.7)	<0.001*
Employment status				
Unemployed	1684 (31.3)	133 (24.7)	1551 (32.0)	
Employed	2553 (47.4)	307 (57.1)	2246 (46.3)	

	Total	Sports betting	No sports betting	p-value
Student	449 (8.3)	85 (15.8)	364 (7.5)	
Retired	699 (13.0)	13 (2.4)	686 (14.2)	<0.001*
Religion				
Not religious	455 (8.4)	59 (11.0)	396 (8.2)	
Religious	4930 (91.6)	478 (89.0)	4452 (91.8)	0.026*
Self-perceived financial status				
Poor	2155 (40.0)	224 (41.6)	1931 (39.8)	
Average	2661 (49.4)	260 (48.3)	2401 (49.5)	
Good	570 (10.6)	54 (10.0)	516 (10.6)	0.704*
Smoking				
Never	2141 (39.8)	264 (49.1)	1877 (38.7)	
Ex-smoker	993 (18.4)	75 (13.9)	918 (18.9)	
Current smoker	2251 (41.8)	199 (37.0)	2052 (42.3)	<0.001*
Score on Psychological distress scale				
No risk	4310 (80.0)	450 (83.6)	3860 (79.6)	
Moderate risk	766 (14.2)	71 (13.2)	694 (14.3)	
High risk	310 (5.8)	17 (3.2)	293 (6.0)	0.015*
Alcohol consumption				
Alcohol consumers	2346 (43.8)	164 (30.6)	2182 (45.3)	
Binge-drinkers	1520 (28.4)	311 (58.0)	1209 (25.1)	
Abstainers	1487 (27.8)	61 (11.4)	1426 (29.6)	<0.001*
Illicit drug use, last 30 days				
Yes	883 (16.4)	51 (9.5)	832 (17.5)	
No	4502 (83.6)	486 (90.5)	4016 (82.8)	<0.001*
Use of anti-anxiety medications				
No use	4382 (82.9)	354 (65.9)	4028 (84.8)	
Prescriptions only use	679 (12.8)	126 (23.5)	553 (11.6)	
Misuse	228 (4.3)	57 (10.6)	171 (3.6)	<0.001*
Casino games				
Yes	31 (0.6)	23 (4.3)	8 (0.2)	
No	5354 (99.4)	514 (95.7)	4840 (99.8)	<0.001*
Slot machines				
Yes	45 (0.8)	34 (6.3)	11 (0.2)	
No	5340 (99.2)	503 (93.7)	4837 (99.8)	<0.001*
PGSI score				
No problem gambling	3000 (94.0)	756 (82.8)	2244 (98.5)	
Low/ moderate gambling	165 (5.2)	133 (14.6)	32 (1.4)	
Problem gambling	26(0.8)	24 (2.6)	2 (0.1)	<0.001*

*According to the Chi-square test

**According to Students T-test

The multivariate logistic regression analysis showed that sports betting in the past 30 days was significantly associated with being male (OR:11.71, 95% CI: 7.95-17.26), age (OR 0.96, 95% CI: 0.95-0.97), living in urban areas (OR: 1.83, 95% CI: 1.43-2.33), having secondary education (OR: 1.45, 95% CI: 1.08-1.96) compared to having only primary education, being employed (OR: 2.37, 95% CI: 1.19-4.72) compared to being retired, having a high risk of psychological distress (OR: 0.43, 95% CI: 0.21-0.90), binge drinking (OR: 1.88, 95% CI: 1.35-

2.63), non- medical prescription drug use of anti-anxiety medications (OR: 1.76, 95% CI: 1.21-2.58), and having low/ moderate gambling risk (OR:12.44, 95% CI: 8.24-18.79) or problem gambling (OR: 38.34, 95% CI: 10.50-139.92) compared to no problem gambling.

The results of the multivariate logistic regression analysis can be seen in **Table 2**.

Table 2. Multivariate logistic regression analysis with sports betting as an outcome variable

	OR (95% CI)
Independent variables	No (%)
Gender	
Males	11.71 (7.95-17.26)
Females	1.0 reference category
Age	0.96 (0.95-0.97)
Place of residence	
Rural	1.0 reference category
Urban	1.83 (1.43-2.33)
Marital status	
Single	1.15 (0.90-1.48)
Married/permanent relationship	1.0 reference category
Level of education	<u>0_</u> /
Primary	1.0 reference category
Secondary	1.45 (1.08-1.96)
College/faculty	0.99 (0.66-1.48)
Employment status	
Unemployed	1.98 (0.96-4.07)
Employed	2.37 (1.19-4.07)
Student	2.08 (0.93-4.64)
Retired	1.0 reference category
Religion	
Not religious	0.91 (0.64-1.29)
Religious	1.0 reference category
Smoking	
Never	1.0 reference category
Ex-smoker	0.93 (0.73-1.19)
Current smoker	0.74 (0.54-1.02)
Score on Psychological distress scale	
No risk	1.0 reference category
Moderate risk	1.05 (0.75-1.48)
High risk	0.43 (0.21-0.90)
Alcohol consumption	
Alcohol consumers	1.11 (0.80-1.57)
Binge-drinkers	1.88 (1.35-2.63)
Abstainers	1.0 reference category
Illicit drug use, last 30 days	
Yes	1.48 (0.66-3.35)
No	1.0 reference category
Use of antianxiety medications	
No use	1.0 reference category
Prescriptions only use	1.14 (0.87-1.49)
Misuse	1.77 (1.21-2.58)
Casino games	
Yes	1.71 (10.57-5.16)
No	1.0 reference category
Slot machines	
Yes	2.14 (0.78-5.84)
No	1.0 reference category
PGSI score	
No problem gambling	1.0 reference category
Low/ moderate gambling	12.44 (8.24-18.79)
Problem gambling	38.34 (10.50-139.92)

DISCUSSION

Our study showed that one-tenth of the adult population in Serbia reported doing sports betting in the past 30 days in 2014. Sports betting in the past 30 days in Serbia was associated with being male, age, living in urban areas, having secondary education, being employed, binge drinking, using non-prescription anti-anxiety medications, and having low/moderate or high risk of problem gambling. Previous studies have shown that problem gamblers who report sports betting are on average 10 years younger compared to problem gamblers who do not report sports betting (6,25). Males under 45 years of age were previously described as a group that is prone to peer influences for risky behavior such as alcohol use, illicit drug use, and gambling (26). Young males are at additional risk as the majority of advertisements for sports betting are directed at this population group (2,7). This group is at a higher risk of placing sports bets more frequently because of the lack of factors that limit gambling activities such as family and other financial responsibilities (6,27).

Participants from urban areas had almost two times higher likelihood of sports betting in the past 30 days in our study. Sports betting market have grown in Serbia in the past two decades and sports betting places are now available in every quarter and every neighborhood in urban areas, but not in rural ones, which might explain these differences (28). The previous studies described sports bettors as highly educated (6), while in our study, sports betting was associated with secondary education only. The reason for the difference between the previously published data and the data from our study lies in the different availability of sports betting examined. Sports betting in our study refers to sports betting at betting places, as online betting was not very common in Serbia at the time the study was conducted (18). It is online betting that is associated with higher education and a more superior professional status (6,29).

Sports bettors were two times more likely to report binge-drinking in the year before the study compared to the participants who did not report sports betting in the past 30 days in our study. Sports betting is now associated with male social encounters as is binge drinking, which is considered a bonding activity, through the joint experience of drunkenness (30). As sports betting is now increasingly associated with possibilities of peer bonding, especially through advertisements (7), males might associate it with power and masculinity, as they do binge-drinking (30). Betting places in Serbia are considered places for friends gathering and betting is accompanied with drinking alcohol, which stimulates binge-drinking.

Even more worryingly, sports betting was associated with non-medical prescription use of anti-anxiety medications in our study, and the participants who reported sports betting in the past 30 days also reported non-medical prescription use of anti-anxiety medications in the year before the study. Both anxiety and depression were previously associated with problem gambling (31), which is linked to non-medical prescription anti-anxiety medication use (32), but to the best of our knowledge, no study examined the association between sports betting and non-medical prescription drug use. From the public health perspective, non-medical prescription drug use and sports betting are a cause of concern. Surprisingly, although sports betting was positively associated with non-medical prescription anti-anxiety medication use, it was negatively associated with a high risk of psychological distress. Sports bettors might see this activity as a social activity and might use it to relieve the pressures of everyday lives.

Sports betting in the past 30 days was associated with more than 12 times higher likelihood of low/moderate risk gambling and more than 43 times higher likelihood of problem gambling based on a PGSI score in our study. Sports betting was previously associated with problem gambling in Serbia (18), mainly due to its wide availability and the tendency for an increasing number of consumers (13). The association between sports betting and problem gambling is therefore important for the public health authorities and measures against problem gambling are now mostly directed at casino games and the Responsible gambling act is mainly directed at casino games and slot machines, not sports betting. Our results indicate that sports betting should also be subject to preventive measures for problem gambling.

One of the limitations of the study is that the participants could report different types of gambling activities they are involved in and the study did not classify the participants in the groups of sports bettors only vs. sports bettors with other gambling games played. The main strength of our study is that it presents one of the rare studies on sports betting done on a national representative sample of the entire adult population.

Our study has shown that sports betting in the past 30 days is highly frequent among adults in Serbia and that, unlike in other studies, it is associated with being a young, adult male. As sports betting is now widely available, and as its market is constantly growing in many countries, the significant association between binge-drinking and non-medical prescription anti-anxiety medication use with sports betting is alarming for the public health professionals. The common association of all these types of behavior with masculinity and social interactions among males should be avoided by advertisers. With an increase in the availability of Internet and online sports betting opportunities, there is a justified concern that there will be an increase in the prevalence of sports betting in Serbia and as online betting provides uncontrolled stimuli for betting there might be an increase in the prevalence of problem gambling as well. The introduction of measures such as setting the limit on both the time spent betting and the amount of money placed on sports betting, development of self-exclusion betting programs, and public health education efforts might be options for countering these issues.

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SOCIJALNE KARAKTERISTIKE I KARAKTERISTIKE STILA ŽIVOTA OSOBA KOJE UČESTVUJU U SPORTSKOM KLAĐENJU U SRBIJI

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Sažetak

Cilj: Cilj ovog istraživanja bio je da se ispita prevalencija sportskog klađenja u poslednjih mesec dana u Srbiji, kao i povezanost sportskog klađenja sa socijalnim karakteristikama i karakteristikama stila života.

Metod: Sprovedena je sekundarna analiza podataka iz Nacionalnog istraživanja o stilovima života u Srbiji: zloupotreba supstanci i kockanje koje je sprovedeno 2014. godine.

Rezultati: 10% učesnika u istraživanju je navelo sportsko klađenje tokom poslednjih 30 dana. Sportsko klađenje je bilo povezano sa muškim polom, stanovanjem u urbanim sredinama, srednjoškolskim obrazovanjem, zaposlenošću. Pored toga, sportsko klađenje je bilo povezano sa teškim epizodičnim opijanjem tokom poslednjih 30 dana, korišćenjem lekova za smirenje bez lekarskog recepta, nisko/umereno rizičnim i problematičnim kockanjem u poređenju sa onima koji se ne kockaju, ali nije bilo povezano sa pušenjem duvana ili korišćenjem psihoaktivnih supstanci.

Zaključak: Povezanost sportskog klađenja sa rizičnim ponašanjima među mladim muškarcima predstavlja znak upozorenja za sve one koji se bave javnim zdravljem.

Ključne reči: sportsko klađenje; faktori; kockanje; problematično kockanje.

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