

An evaluation of gambling addiction and video lottery in the South of Italy

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DOI: 10.2427/12983

Accepted on 12 June, 2019

ABSTRACT

Nowadays, pathological gambling is an emerging health problem. The Diagnostic and Statistical Manual of Mental Disorders 5 (DSM 5) renames it as 'Gambling Disorder' (GD), thus recognising its highly dependent status. A study was conducted from April 2016 to August 2017 to evaluate the prevalence of this phenomenon by administering an ad hoc questionnaire to adult individuals (both sexes) over the age of 18.

We analysed a sample of 562 individuals with DSM 5 criteria. We obtained a score > 4 indicating a possible mild gambling disorder in 1.6% of the sample and a score > 6 corresponding to a moderate GD in 2.3% of the sample. We observed that the main motivations for gambling were "having fun" and "the prospect of winning" and 10.9% of respondents had played more than they intended. Furthermore, "problematic" players showed to be more prone to alcohol abuse than "social" players ($p < 0.001$). Only 7.5% of respondents had already gambling problems in their family (involving in particular their mothers). The phenomenon is, therefore, quite common in our area and, indeed, 64.1% of the sample believes that gambling is a problem in their own territory, however only 20.6% would know where to find help. In conclusion, given the high socio-economic impact of this phenomenon, we believe that it is imperative to establish structured preventions programs in order to contain the spread of this phenomenon.

Key words: Gambling; addiction; disorder; prevalence; Italy; population

INTRODUCTION

Pathological gambling (PG) was officially recognised as a psychiatric disorder by the American Psychiatric Association in 1980 [1]. The Diagnostic and Statistical Manual of Mental Disorders (DSM) defines PG as persistent, recurring and maladaptive gambling behaviour that compromises personal activities, family and/or work. The DSM-V renames it as 'Gambling Disorder' (GD), recognising its highly dependent status. Scientific research has in fact found that the analogies between PG and chemical addiction go beyond behavioural phenomenology, as was demonstrated in both neurobiological and neuroimaging research. [2, 3]

In the last twenty years, games have been ever more available to the public, therefore the proportion of players has increased accordingly. At present, it is estimated that more than 80% of the adult population gambles or has gambled over the course of their life. As reported in the majority of studies conducted in Italy, it is estimated that problem gamblers are in a range from 1.3% to 3.8% of the general population, whereas pathological gamblers are estimated to vary from 0.5% to 2% (Ministry of Health, 2012). Moreover, this phenomenon affects more males (M) than females (F), although over time this difference tends to decrease (M/F ratio from 9:1 to 3:1) [1, 2, 3]. The average age of women with gambling-related problems is older than in males, but in males the development of addiction is faster [4].

The literature describes a greater prevalence among relatives of players and in people with a low level of education compared to the general population. Moreover, GD has significant social repercussions, mainly among groups of the population who are weaker from an economic and socio-cultural point of view.

Today, a significant problem is the widespread popularity of games among young people, including illegal gambling, which makes it difficult to obtain accurate prevalence data about this phenomenon. However, the prevalence among young people is almost double compared to that of the general population (5%–6%) [5, 6]. The most popular games in this age range are sports cards and bets. Moreover, today there is a rapid spread of remote gambling based on the use of internet, cell phones and digital and/or interactive TV, which cannot be controlled by parents and, therefore, is also dangerous for the younger age groups [7–10].

In the literature a strong association was repeatedly shown between GD and the prevalence of other diagnoses, such as depression, hypomania, bipolar disorder, impulsivity, personality disorders (antisocial, narcissistic, borderline), attention-deficit hyperactivity disorders, panic attack disorder with or without agoraphobia, stress-related disorders (peptic ulcer, arterial hypertension). In particular, a hallmark of GD is the comorbidity with substance abuse problems (e.g., alcohol, legal and/or illegal psychotropic

substances) [11–12].

Numerous studies have shown that the consequences of GD extend to social and family relationships, due to the growing need for money as a result of debts, lies and inevitable financial ruin, which can lead to separations, divorces, problems of co-dependency, problems for children etc. and even behaviours associated with illegality and usury. Pathological players are, in fact, frequently involved in illegal activities aimed at gaining the money to play with: fraud, signature forgery, embezzlement and petty theft [13, 14].

In some players there was also a real withdrawal syndrome with general and gastro-intestinal symptoms (abdominal pain, tremors, headaches, peptic syndrome, cold sweating), leading to increased costs for health care services and social assistance with an impact on the national and regional welfare systems. According to recent estimates, the direct and indirect costs amount to about 5 billion Euro, due to the drop of work capacity, the closure of businesses due to excessive debts or the loss of jobs due to obsession with games and its obvious financial consequences [15–17].

The dependency on gambling can have undoubtedly multiple causes, but it generally follows a precise escalation which is well established in literature. Individual with financial and economic problems or the desire to improve their lives or their business and commercial activities are led to tempt their fate through gambling. In the presence of a psychotic substrate, however, the player enters a loop which starts with economic-financial difficulties, evolves into gambling and in some cases can even lead to illegality and usury, with serious consequences and even loss of life [18].

The aim of our study was to investigate the phenomenon of gambling addiction in our area and evaluate the knowledge of people affected by this phenomenon.

MATERIALS AND METHODS

A multi-centric study in the cities of Messina and Reggio Calabria was conducted from April 2016 to August 2017 with trainee doctors administering an ad hoc online questionnaire and one-to-one interviews with adults over the age of 18, of both sexes. The questionnaire was specially designed to collect social and personal information, possible gambling problems in the family, gambling habits, personal feelings and perception of the gambling problem in its territory.

Participants

The minimum sample size was defined on the basis of the gambling prevalence of 3% in the Italian population (considering a 95% confidence interval and a 5% absolute

accuracy related to a population of 574,389 Italian residents in both cities as of 1 January 2015). We recruited subjects randomly and the interviews took place in the offices of general practitioners, in universities and in waiting rooms of healthcare facilities, always in full compliance with privacy regulations.

Diagnostic tools

At present, several tools are available for screening, diagnosis and the assessment of the level of problematic gambling and most of them refer to the classification of the DSM (the SOGS, the Questionnaire DSM-IV proposed by Ladouceur, Fisher DSM-IV Screen 18, Beaudoin-Cox 19 and the Short Questionnaire on Gambling Behaviour [Kurzfragebogen zum Glückspielverhalten - KFG] by Petry). The instruments that are not based on DSM-IV refer to the classification of the disorder in addictions (Addiction Severity Index - ASI) or obsessive-compulsive disorders (pathological gambling, Yale Brown Obsessive Compulsive Scale and pathological gambling Clinical Global Impression Scale). We chose to use the SOGS and to focus the research only on the previous year for three reasons: firstly, to have data that are up-to-date, since

some studies indicate that the SOGS extended to lifelong gambling behaviours can give false positives and therefore overestimates; secondly, to be able to make a comparison with international data. Thirdly, in the majority of studies aimed at evaluating the prevalence of pathological gambling disorders, the standardized and internationally validated assessment tool most commonly used is the South Oaks Gambling Score (SOGS), developed by Lesieur H.R. and Blume S.B. in 1987, based on the diagnostic criteria of the DSM. Therefore, it was decided to adopt it for the this research by inserting it in a broader questionnaire.

The screening test that is simple and quick to complete. It consists of 16 multiple-choice questions, not all to be counted for scoring purposes. In addition to determining a final evaluation on three levels, i.e. the "social", "excessive" and "pathological" levels of the subject's gambling behaviour, it offers valuable qualitative information on individual modalities and on family and social implications. The questions that contribute to the calculation of the score are used to assess how the individual relates to the game, if he/she is aware of playing excessively, if he/she tries to hide this behaviour, if he/she feels guilty, if he/she wants to quit but feels unable to do it, if the game influences his/her social life and what is the source of the money needed to play.

TABLE 1. Representative population- based sample characteristics (n=562)

SAMPLE DISTRIBUTION BY AGE										
18-27 19.04% (91)	28-37 21.71% (122)	38-47 13.88% (78)	48-57 16.04% (90)	58-67 15.12% (85)	> 67 12.99% (73)	No answer 1% (7)				
SAMPLE DISTRIBUTION BY SEX										
Males 53.6% (301)		Females 43.8% (246)		No answer 2.7% (15)						
RESIDENCE OF THE SAMPLE										
Sicily 70.28% (395)	Calabria 23.67% (133)		North Italy 2.67% (15)	Non-resident Italians 0.36% (2)	No answer 3% (17)					
MARITAL STATUS										
Single 35.9% (202)	Widower 5.7% (32)	Married 45.9% (258)		Divorced 6.2% (35)	No answer 6.2% (35)					
EDUCATIONAL LEVEL										
Elementary school 4.09% (23)	Lower secondary school 12.63% (71)	High school 46.62% (262)	University 31.67% (178)		Master's degree 0.18% (1)	No answer 5% (27)				
WORK										
Yes 44% (249)	No 20% (114)	Unemployed 14% (77)		Pensioner 16% (90)	No answer 6% (32)					
OCCUPATIONAL CATEGORY										
Public employee 32% (180)	Private employee 22% (123)	Business owner 5% (26)	Self-employed 11% (60)	Housewife 10% (57)	Student 14% (77)	No answer 7% (39)				
JOB SECTOR										
Agriculture 2.14% (12)	Fishing 2.49% (14)	Construction 3.91% (22)	Industry 3.74% (21)	Trade 9.25% (52)	Tourism 1.96% (11)	Public health 15.84% (89)	Administration 15.84% (89)	Education 1.25% (7)	No answer 15.30% (37)	Other 28.29% (159)

TABLE 2. SOGS questionnaire and other questions put to sample (n=562)

	Yes	No	No answer
Have you ever claimed to have won money and instead you had you lost some? ^	6.6%	70.1%	23.3%
Do you feel you have problems with gambling?*	2.8%	3%	17.4%
Have you ever played more than you intended to play?	10.9%	67.6%	21.5%
Have you ever asked to borrow money?	5%	78.8%	16.2%
Have you ever thought about using money without your family's knowledge?	4.6%	78.8%	16.6%
Has anyone criticized the fact that you play?	11.9%	65.7%	22.4%
Have you ever felt guilty about your way of playing or about what happens when you play?	5.5%	70.3%	24.2%
Did it ever seem to you that you could not stop playing despite your desire?	5.2%	70.1%	24.5%
Have you ever hidden receipts for a bet, a lottery, money or anything else for gambling, from your partner, your family or important people for your life?	5.7%	71.5%	22.8%
Have you ever had arguments about money with the people you love because of gambling?	6.2%	72.6%	21.2%
Have you ever taken time off work for gambling?	7.8%	72.4%	19.8%
Has the game compromised your reputation?	2%	78.6%	19.4%

^ to the answer "If yes, how often?": less than 50% (16.5%); more than 50% (2.8%); always (1.1%); no answer (79.5%)

* 76.7% of the samples declared that have problems in past.

TABLE 3. Type of games played by the interviewees (n=562)

	Lotto, superenalotto and / or 10 e lotto*	Online payment games	Scratch card	Sports bets	Casino (not online)	Bingo	Cards	Slot-machines, videopoker or other	Playing pool, bowls or other similar games with cash bets
Hardly ever	34.5%	66.2%	36.7%	51.3%	71.6%	63.3%	42.2%	67.6%	70.2%
Sometimes	45.8%	10.2%	35.3%	18.5%	6.9%	13.8%	26.2%	11.6%	8.7%
Usually	6.9%	3.6%	12.4%	12.7%	0.7%	3.6%	13.1%	1.8%	1.5%
Frequently	1.5%	2.2%	1.5%	3.3%	1.1%	0.0%	2.9%	0.7%	0.0%
Always	0.7%	0.0%	1.5%	0.7%	0.4%	0.4%	1.5%	0.7%	0.0%

* Italian lottery variants. All may be played in any authorized bar/tobacconist

The final score can be between 0 and 20. American authors have shown cut-off scores, which according to the editors of the Italian version (Guerreschi, 2004, Capitanucci and Carlevaro, 2004) can also be transposed into our socio-cultural reality, and which determine the following categories:

- "Social" players: those who play without losing control of their behaviour (score 0-2)
- "Excessive" players: those who begin to show some signs of loss of control and are at risk (score 3-4)
- "Pathological" players: those who have lost control (play more often, with more money and more frequently than budgeted) (score equal to or greater than 5)
- Players "with a serious problem": those who have a

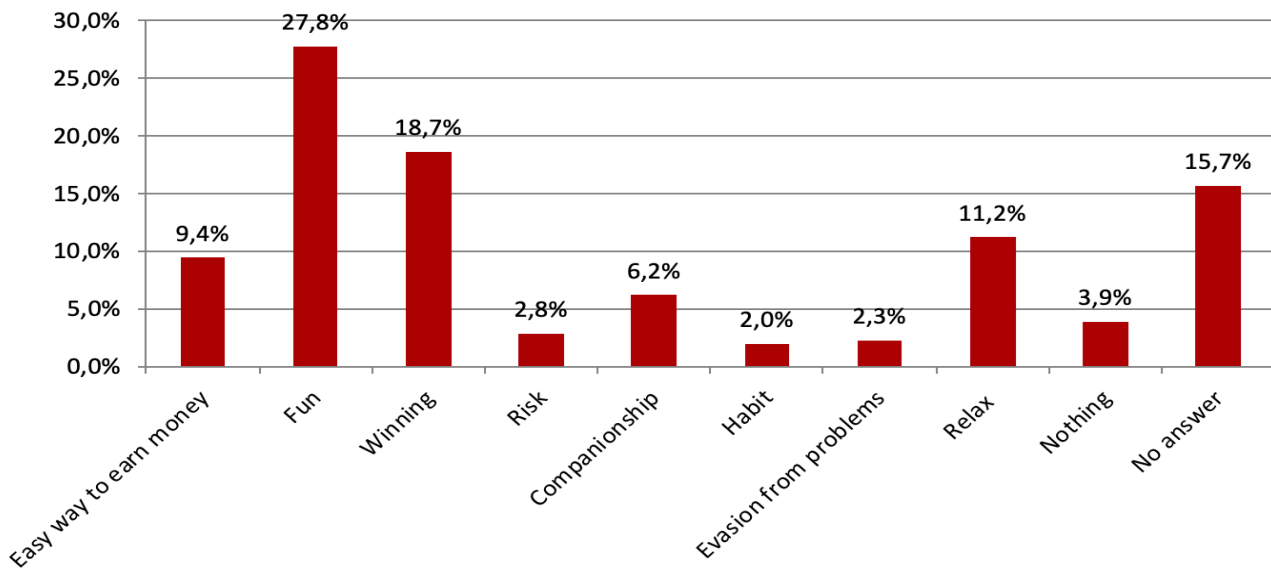
serious problem with gambling (score equal to or greater than 9)

The study was approved by the Department of Biomedical Sciences and Morphological and Functional Images of University of Messina.

Statistical analyses

Descriptive statistics were used to find the percentages and the 95% Confidence Interval (CI). We performed a chi squared test and Pearson correlation test to assess the relationship between variables, e.g. socio-demographic characteristics, gambling habits and addictive behaviours.

Significance was assessed at $p < 0.05$ level. All

FIGURE 1. Gambling motivations of the sample


analyses were performed using StatSoft software (StatSoft®, version 10).

RESULTS

We analysed a sample of 562 individuals, whose characteristics are summarised in Table 1. Each subject took part in the study.

Yo the question “If you lose, how often you return to recover the lost money?” we obtained for 17.3% of the samples less than 50% and , luckily only for 2.8% more than 50% and 1.1% always 24% of the sample did not answer. The other questions are summarized in Table 2.

The first question asked to the respondents was whether they had played at least once in the previous year. 7% of the sample preferred not to answer, while 49% answered affirmatively. Of these, 44.7% said they had done it less than once a month, 19.6% more than once a month, 23.3% 1–2 times a week and 5.5% 3–4 times a week. In addition, 5.5% said they had played every day and 0.7% even several times during the day.

More than half of the sample (57.1%) said they had played 5 Euros or less and 24% between 6–20 Euros. The remaining people made higher bets: 21–100 (12.0%), 101–1000 (3.3%) and 1001–10.000 Euros (1.5%). Nobody said they had played money > 10,000 Euros and in 2.2% of cases the interviewee chose not to answer.

We also investigated whether the person had ever played more than they intended: 67.6% answered negatively, 10.9% answered affirmatively and 22% preferred not to respond.

We therefore examined in detail the type of games played by the individuals who answered positively to the

previous question (Table 3).

We then asked their gambling motivation, giving the following options: an easy way to earn money, fun, winning, risk, company of other people, habit, escape from problems, relaxation or for any other particular reason. The results are summarised in Figure 1.

We investigated whether the respondents were subject to substance abuse, such as drugs and particularly alcohol. In the sample only 3.7% of the respondents said that they drink alcoholic beverages, while 22.6% preferred not to respond. Among the alcohol consumers we investigated, the frequency of consumption was: 94.1% did not want to respond, while 0.7% said they drink it once a month, 4.6% more than once a month, 0.4% more than once a week and 0.2% daily.

Another area of investigation was the respondents’ perception of the gambling problem in their territory. 64.1% of the respondents believed that gambling is a problem in their territory and 12.4% did not respond; 23.5% believed that their territory did not have this kind of problems. Only 20.6% would know where to find help for this kind of problem, whereas 63.0% did not know whom to address. We then investigated whether the respondents were superstitious when playing games: 27.2% answered they were, 53.2% answered they were not and 19.6% did not respond. We found 21% play using the law of probability (betting on numbers not drawn for a long time, etc.).

We analysed the presence of gambling problems in their family and we observed that 77.0% responded negatively, 15.5% did not respond and only 7.5% answered affirmatively. The respondents of the last group were asked, in particular, who in the family had had this type of problem. Their answers were: mother (2.7%), brothers / sisters (1.4%), father (0.9%) and children (and

0.5%). 17% did not respond to the second part of the question.

We chose to investigate how many subjects in our sample had gambling disorders according to the diagnostic criteria of the DSM-V. The DSM-V, in fact, classifies the disorder as mild, moderate or severe depending on the number of satisfied criteria: 4–5, 6–7 and 8–9 criteria, respectively.

According to DSM-V criteria, we observed a score of > 4 , indicating a possible mild gambling disorder in 1.6% of the sample and a score was found of > 6 , indicative of a moderate GD, in 2.3% of the sample.

Moreover, we conducted data analysis according to the SOGS questionnaire.

In our research, we found obtain the following SOGS scores in our sample of 562 individuals:

- 508 subjects scored 0 to 2 points at SOGS and can therefore be considered "social" players (90.6%);
- 26 subjects scored 3 to 4 points at SOGS and can therefore be considered "excessive" players (4.6%);
- 14 subjects scored 5 or more points at SOGS and can therefore be considered "pathological" players (2.5%).
- 13 subjects scored 9 or more points at SOGS and therefore gambling can be considered a serious problem (2.3%).

The correlation of the DSM 5 score with the different items investigated showed a statistically significant correlation with the following characteristics: male sex (r squared: 0.01306; $p < 0.001$), family-related factors (r squared: 0.062; $p < 0.0001$), use of probability (r squared: 0.07359; $p < 0.0001$) and good luck for the game (r squared: 0.05417; $p < 0.0001$), lies about the amount of winnings (r squared: 0.1274; $p < 0.0001$), possibility of use of money without telling the family (r squared: 0.3295; $p < 0.0001$), criticism from other people (r squared: 0.4473; $p < 0.0001$) or members of the family (r squared: 0.02506; $p < 0.0001$), awareness of their problem (r squared: 0.472; $p < 0.0001$), impairment of reputation (r squared: 0.2747; $p < 0.0001$) and use of alcohol (r squared: 0.02506; $p < 0.001$).

We also wanted to investigate the presence of a statistical relationship between the variable "gambled in the last year" and a series of demographic variables and characteristics of the subject. A statistically significant correlation was observed with the following variables: gender (males vs. females, $p < 0.0001$), employment (unemployed vs. employed, $p < 0.05$), residency (Northern vs Southern Italy, $p < 0.001$), employment sector (agriculture, fishing, construction, industry, commerce, tourism, public health, administration, education, $p < 0.001$), use of probability and/or superstition ($p < 0.0001$) and use of alcohol ($p < 0.05$). The analysis of

our data revealed a statistically significant relationship ($p < 0.01$) between alcohol abuse and betting. Furthermore, "problematic" players were also more prone to alcohol abuse (77.2%) than "social" players (22.8%) ($p < 0.001$).

DISCUSSION

In our research, 49% of the respondents had played using money (betting) in the last year. However, from reading the answers provided to the question on the individual games played in the last year, 54.9% said they had played the SuperEnalotto at least once and 50.5% played the scratch card. This inconsistency in the answers shows that the concept of "playing money" (betting) is not always correctly understood. Moreover, very popular games are not always correctly recognised, for various reasons, as being actually games of chance. Respondents were read a list of games, which all fall under the category of gambling, in order to report which they had practiced at least once in the last year.

It is worth remembering that all games of chance have, in fact, to the same basic characteristics, even if there are large differences in the ways they are presented and plays. It can be said that the same mechanisms have been covered and masked with very different formulas to capture the interest of a wider and more diversified public. It is therefore possible that different types of players prefer certain modes of playing, some games rather than others, as they are attracted by factors that resonate with what they desire and seek. Furthermore, online games are becoming ever more widespread today, with an increasingly solitary behaviour of the subject. The availability of big bets, continuous play, quick feedback and immediate and easy access to a vast number of betting options lead to concerns that internet gambling can contribute to excess gambling and other social problems [19–20]. High rates of suicidal tendencies have been reported in pathological gamblers, with estimates of suicide attempts in the range between 17% and 24%, related to the loss of work and the family problems that the subject encounters [21–22]. It has been reported in literature, similarly to what happens with drugs, that there is a possible division between "soft" and "hard" games [23–29]. These latter present some characteristics, like a short interval between one game and the next and the possibility of collecting the winnings, which would considerably increase the risk of escalation and addiction. Overall, the data we analysed (Table 2) show that the percentage of players in the general population is not particularly high. In fact, in almost all the types of games identified, about 90% of respondents said they had not played in the previous year.

The most appreciated games by the general public are, as expected, the Lotto and the SuperEnalotto, very popular nationwide, due to continuous advertising on television networks and in betting agencies, ease of access

given the large number of qualified operators and costs that are affordable to most individuals, as observed in the international literature. [30] In 81.1% of cases, the maximum bet declared was 20 Euros or less, which is entirely reasonable. However, 3.3% of the players in the sample played over 100 Euros on the same day, and 1.5% of the players in some cases invested more than 1,000 Euros a day in the game. However, it should also be stressed that, in order to define the degree of addiction, the amount of money spent is certainly not the only parameter to consider. In fact, strong dependence behaviours can also occur with lower daily amounts where the other criteria indicated by the DSM-5 are also present [2].

The main criterion for the player is predominantly to win and/or have an easy way of earning money (21.7%) or for fun (21.9%), as described in the literature [31]. The first motivation is probably encouraged by targeted promotional campaigns and by the now widespread opinion that one cannot become rich without a stroke of luck. The prevailing idea is that spending little can earn a lot and, moreover, the perception of being able to win does not reflect the real probabilities [32–34]. It is also interesting to highlight that one of the main motivations for playing is "fun". In fact, the game is seen as a means of triggering sensations, sometimes very intense, that evoke risk, challenge and victory in a world that is today often deprived of feelings and where the individual tends to isolate himself on digital platforms. The traditional view of whether the player is attracted by the possibility of winning, in accordance with what is observed with neuroscientific data, cannot explain why people often describe gambling as a pleasant activity rather than as an opportunity to earn money. During gambling incidents, pathological gamblers report euphoric feelings comparable to those experienced by drug addicts [34–35]. A fundamental role is played by the dopaminergic system, and it has been observed that in the PGs the nucleus accumbens is significantly activated during gambling when the probability of winning and losing money is identical, that is, during an event with the utmost uncertainty [33]. There is a significant relationship between having a job and playing for money: the employed play more than the unemployed, and this figure also confirms other international research [36–39]. Furthermore, there is a significant relationship between sex and playing money: males play more than women, as reflected in international literature [21, 30, 34].

In our sample, 7.5% of subjects were related, as shown in numerous research works that highlighted the presence of familial factors for addictive behaviours, with a positive correlation between parents with addiction problems (alcohol and or games of chance) and children with gambling addiction problems [37–38].

The last objective was to investigate the subjective perception of each person about this phenomenon in their territory, taking into account that the mass media often convey opposite messages alternating between blaming

gambling and at the same time encouraging it, suggesting that gambling is highly likely to lead to winnings and that it can change the player's life. In this study, 64.1% considered it to be a problem. However, despite this concern, only about 20% of respondents know where a person could turn for help.

In literature, commonly reported barriers to seeking help were: a wish to handle the problem by oneself, shame/embarrassment/stigma, unwillingness to admit the problem and issues with treatment itself [40]. We must underline that a high percentage of players prefer online gambling; electronic gambling is a feature of modern life in Italy and there is a stronger relationship between PG and playing online games than there is between PG and other forms of gambling [41].

CONCLUSION

In the modern era, growing social and mass pressure that pushes for compulsive purchasing and drives more and more towards consumerism, the increasing availability of access to gambling at low prices and the lack of social contact coupled with the isolation of the subject behind electronic screens, could lead to an increasing number of social and/or problematic players, with serious implications for national and international public health. The phenomenon is therefore quite common in our reality and, indeed, 64.1% of the sample believes that gambling is a problem in their territory. Despite this, only 20.6% would know where to find help. Although this problem still persists enormously on our territory with colossal consequences for the economic, psychic and general lives of the players, prevention measures are lacking. The legalization of gambling has further encouraged this phenomenon, while not preventing criminal associations from doing illicit business. Indeed, gambling, along with drug trafficking, appears today the most lucrative business with which to replenish the coffers of the gangs. Promotion programs, such as vaccination, water potabilization, prevention of HAIs remain the most important weapons in the hands of public health: it is, therefore, imperative to establish structured forms of primary and secondary prevention at territorial level, in an attempt to prevent the spread of this phenomenon.

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