

Poremećaj kockanja – prevencija među adolescentima

/ *Gambling Disorder – Prevention in Adolescents*

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Poremećaj kockanja ponavljajuća je kockarska aktivnost koja narušava opće stanje ili uzrokuje značajan problem za osobu. Prevalencija je ove bolesti u svijetu između 0,01 i 10,6 % u odrasloj populaciji, a među adolescentima je i češća. Najvažniji su okidači poremećaja kockanja velika dostupnost i pristupačnost kockanja, odnosno mogućnost kockanja *online*. Veći rizik za nastanak ovog poremećaja imaju muškarci, samci, osobe u socijalno depriviranoj okolini. Međutim, kao kritično razdoblje osjetljivosti mozga za razvoj ovisnosti pa tako i poremećaja kockanja nameće se doba adolescencije. U Hrvatskoj čak 12,9 % srednjoškolaca zadovoljava kriterije za problematično kockanje. Budući da poremećaj kockanja uzrokuje značajne psihosocijalne posljedice i da je povezan s brojnim psihičkim i fizičkim komorbiditetima, nužno je osmisliti kvalitetne preventivne intervencije. U svijetu i u našoj zemlji postoje brojni preventivni programi namijenjeni adolescentima, a najuspješniji su oni dužeg vremenskog trajanja koji obuhvaćaju multiple aspekte ovisnosti i utječu na promjene u ponašanju. Prevencija ove bolesti značajan je javnozdravstveni imperativ koji treba obuhvatiti pojedinca, obitelj, socijalno okruženje uz odgovarajuću zakonsku regulativu, financijsku podršku, interdisciplinarnu profesionalnu suradnju i znanstvenu evaluaciju učinkovitosti primijenjenih programa.

/ Gambling disorder is a recurrent gambling activity that disrupts the general condition or causes a significant problem for a person. The prevalence estimates of this illness in the world range between 0.01 and 10.6% in the adult population, and it is even more common in adolescents. The most important triggers of gambling disorder are the high availability and accessibility of gambling, i.e., the possibility of online gambling. Men, single people, and people living in a socially deprived environment are at a higher risk of developing gambling disorder. However, the critical age of brain sensitivity for the development of addiction, including gambling disorder, is adolescence. In Croatia, as many as 12.9% of high school students meet the criteria for problem gambling. Given that gambling disorder causes significant psychosocial consequences and is associated with numerous psychic and physical comorbidities, it is necessary to design high-quality preventive interventions. There are numerous preventive programmes in the world and in our country aimed at adolescents, the most successful being those of a longer duration that cover multiple aspects of addiction and affect changes in behaviour. Prevention of this disease is a significant public health imperative that should involve individuals, family, social environment and appropriate legislation, financial support, interdisciplinary professional cooperation and scientific evaluation of the effectiveness of the applied programmes.

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Poremećaj kockanja je prema Američkom psihijatrijskom udruženju (engl. *American Psychiatric Association*) ponavljajuća kockarska aktivnost koja uzrokuje značajan problem ili narušava opće stanje (1). Međunarodna klasifikacija bolesti i srodnih zdravstvenih problema, deseta revizija (MKB-10) navodi patološko kockanje kao posebnu dijagnozu pod šifrom F63.0 (2), dok Dijagnostički i statistički priručnik za duševne poremećaje, peto izdanje (DSM-5) ovisnost o kockanju svrstava u kategoriju poremećaja vezanih uz psihoaktivne tvari (PAT) (3). U MKB-11 u potkategoriji Poremećaji vezani uz ovisnička ponašanja navode se: poremećaj uzrokovan kockanjem (engl. *gambling disorder*) i poremećaj uzrokovan igranjem igrice (engl. *gaming disorder*) (4). Prevalencija poremećaja kockanja kreće se između 0,01 % i 10,6 % u odrasloj populaciji (5). U Republici Hrvatskoj (RH) je barem jednom u životu neku igru na sreću igralo 60,3 % odraslih, a 2,2 % osoba pati od negativnih posljedica uzrokovanih kockanjem (6). Istraživanja su pokazala kako je prevalencija kockanja kod adolescenata veća nego prevalencija u odrasloj dobi te da u nerazvijenim zemljama svijeta može sezati i do 34,3 % (7). Prevalencija kockanja i problematičnog kockanja među adolescentima u RH također je visoka, pa je tako istraživanje iz 2013. g. pokazalo kako 12,9 % adolescenata ima ozbiljne psihosocijalne probleme uzrokovane kockanjem (8). Ovaj poremećaj povezan je s većim rizikom za nastanak drugih psihijatrijskih poremećaja kao što su: ovisnost o alkoholu, veliki depresivni poremećaj (9), poremećaji ličnosti, anksiozni poremećaji te ovisnosti o psihoaktivnim tvarima (PAT) (10). Također, osobe s poremećajem kockanja većinom su lošijeg fizičkog stanja i s brojnim organskim komorbiditetima (11). Nadalje, dugoročne su posljedice financijski problemi i dugovi, gubitak posla zbog izostajanja, bračni sukobi i posljedični razvodi, kršenje zakona i delinkvencija itd. (12). U RH godišnji ekonomski i društveni trošak po jednom ovisniku o kockanju iznosi 10

According to the American Psychiatric Association, gambling disorder involves repeated, problem gambling behavior that causes significant problems or impairs the general condition (1). The Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) lists pathological gambling as a special diagnosis under code F63.0 (2), while the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) classifies gambling in the category of disorders related to psychoactive substances (PAS) (3). In ICD-11, gambling disorder and gaming disorder are listed in the subcategory "Disorders due to addictive behaviours" (4). The prevalence of gambling disorders in the adult population ranges between 0.01% and 10.6% (5). In the Republic of Croatia (RH), 60.3% of adults have played a game of chance at least once in their life and 2.2% of people suffer from the negative consequences caused by gambling (6). Research has shown that the prevalence of gambling in adolescents is higher than the prevalence in adults and that in underdeveloped countries it can reach up to 34.3% (7). The prevalence of gambling and problem gambling among adolescents in Croatia is also high. A study conducted in 2013 found that 12.9% of adolescents experience serious psychosocial problems caused by gambling (8). This disorder is associated with a higher risk of developing other psychiatric disorders such as: alcohol use disorder, major depressive disorder (9), personality disorders, anxiety disorders, and psychoactive substance abuse (PAS) disorders (10). Also, individuals with gambling disorder are mostly in poorer physical condition and have a number of medical comorbidities (11). Furthermore, there are also long-term consequences, such as financial problems and debts, loss of employment due to absenteeism, marital conflicts and subsequent divorces, violations of the law, delinquency, etc. (12). In Croatia, the annual economic and social cost per gambling addict amounts to HRK 10,702.8. The largest part of this cost is

702,8 kuna, a najveći dio tog troška otpada na produktivnost i zaposlenost (68,9 %) (13). Iz navedenog proizlazi da je poremećaj kockanja značajan javnozdravstveni imperativ koji iziskuje kvalitetnu i učinkovitu prevenciju koja mora početi već u adolescentnoj dobi (9). U središte se ovog rada stoga stavlja poremećaj kockanja među adolescentima i prevencija kockanja.

TEORIJE NASTANKA POREMEĆAJA KOCKANJA

Etiologija poremećaja kockanja je složena jer uključuje *genetičke i okolišne čimbenike*. U istraživanjima na jednojajčanim blizancima pokazano je da genetički čimbenici pridonose do 66 % nastanku poremećaja kockanja (14), što je usporedivo s genetičkim doprinosom kod ostalih bolesti ovisnosti (10). Nadalje, budući da osobe s poremećajem kockanja češće boluju od ostalih psihijatrijskih komorbiditeta (9,10), izvjesno je da postoji genetička povezanost između poremećaja kockanja i ostalih psihičkih bolesti (9). Najvažniji geni u etiologiji poremećaja kockanja su oni koji kodiraju dopaminergičke i serotonergičke neuronske putove. Osobe s poremećajem kockanja imaju slabiju aktivnost dopaminergičkih neurona u ventralnom strijatumu tijekom procesa nagrađivanja pa se nameće kao logičan zaključak da će povećanje dopaminergičke aktivnosti u frontalnim regijama mozga poboljšati kognitivno funkcioniranje osoba s poremećajem kockanja (15). Međutim, randomizirano dvostruko-slijepo placebo kontrolirano istraživanje, osmišljeno s ciljem traženja jednoznačne uloge promijenjene transmisije dopamina u etiologiji poremećaja kockanja, pokazalo je da bolesnici nakon dobivene jedne doze tolkapona (inhibitor katehol-o-metiltransferaze - COMT) koji povećava razinu dopamina, pokazuju pet puta veće rizično ponašanje od kontrolne skupine (15). Važnost uloge dopamina u nastanku poremećaja kockanja potvrđuje činjenica da je poremećaj kockanja češći u

associated with productivity and employment (68.9%) (13). It follows from the above that gambling disorder represents a significant public health imperative that requires quality and effective prevention that must begin as early as in adolescence (9). Therefore, gambling disorder among adolescents and its prevention lie at the heart of this paper.

THEORIES ON THE MECHANISM OF GAMBLING DISORDER

The aetiology of gambling disorder is complex because it involves *genetic and environmental factors*. Studies of identical twins have shown that genetic factors contribute up to 66% to the development of gambling disorders (14), which is comparable to the genetic contribution to other addictive diseases (10). Furthermore, having in mind that individuals with gambling disorder are more likely to suffer from other psychiatric comorbidities (9,10), it is likely that there is a genetic link between gambling disorder and other mental illnesses (9). The most important genes in the aetiology of gambling disorder are the ones that encode dopaminergic and serotonergic neuronal pathways. Individuals with gambling disorder have less dopaminergic neuron activity in the ventral striatum during the reward process, so it is logical to conclude that increasing dopaminergic activity in frontal brain regions will improve their cognitive functioning (15). However, a randomized, double-blind, placebo-controlled study designed to look for a clear role of altered dopamine transmission in the aetiology of gambling disorder found that patients after receiving one dose of tolcapone (inhibitor of the enzyme catechol-O-methyltransferase - COMT) expressed five times more risky behaviour than the control group (15). The importance of dopamine in the development of gambling disorder is confirmed by the fact that gambling disorder is more common in patients with Parkinson's disease who are treated with dopamine agonists (16). In addition to that, individuals treated with antipsychotic

oboljelih od Parkinsonove bolesti, koji se liječe dopaminskim agonistima (16). Također, osobe koje se liječe antipsihotikom aripiprazolom, parcijalnim agonistom presinaptičkih D2 receptora imaju 3,4 puta veću šansu razviti poremećaj kockanja (17).

Budući da se pojava i težina kliničke slike poremećaja kockanja ne mogu jednoznačno objasniti genima odgovornima za dopaminergičke projekcije, sve je više fokusa na epigenetičke mehanizme (14,18). Tako je u pretkliničkim istraživanjima pronađena povećana razina DNA metilacije u specifičnoj citozin-fosfat-gvanin dinukleotid (CpG) sekvenci gena koji kodira za serotoninški transporter u prefrontalnom korteksu štakora koji pokazuje ovisničko ponašanje (18).

Adolescenti su podložniji razvoju poremećaja kockanja zbog neurorazvojnih karakteristika adolescentnog razdoblja, odnosno razvoja dijelova mozga koji kodiraju psihičke funkcije važne u etiologiji ovisnosti poput motivacije. Motivacija je moždana aktivnost koja procesurira unutarnje stanje pojedinca i njegove okoline te određuje aktivnosti pojedinca prema okolini (19). Ona uključuje visoke moždane funkcije koje određuju ponašanje pojedinca kako bi mu povećale šansu za preživljavanje (20). Pojedinaac ima više ciljeva vezanih za preživljavanje, primjerice nabaviti hranu ili pak osigurati sklonište za potomstvo. Međutim, ne mogu se svi ciljevi ispuniti u isto vrijeme pa mora postojati više strategija ponašanja za ostvarenje navedenih ciljeva. Motivacijska neuronska mreža stoga mora omogućiti mehanizme koji kvalitetno određuju prioritete i omogućuju alternativne aktivnosti kako bi preživljavanje bilo omogućeno (19). Tako su ponašajne ovisnosti krivo usmjerena motivacija koja daje veći prioritet zadovoljavanju određenih potreba (npr. žudnje za kockanjem) nego svrsishodnim aktivnostima kao što je primjerice odličan uspjeh u školi. Tako motivacija za brzim utaživanjem specifičnih potreba, što je definirano kao impulzivnost, nadvlada ostale motivacijske ciljeve. Osoba s

aripiprazole, a partial agonist of presynaptic D2 receptors, are 3.4 times more likely to develop gambling disorder (17).

Since the occurrence and severity of the clinical picture of gambling disorder cannot be unambiguously explained by the genes responsible for dopaminergic projections, there is an increasing focus on epigenetic mechanisms (14,18). Preclinical studies indicated increased levels of DNA methylation in the specific cytosine-phosphate-guanine dinucleotide (CpG) sequence of the gene encoding the serotonin transporter in the prefrontal cortex of rats showing addictive behaviour (18).

Adolescents are more susceptible to the development of gambling disorder due to the neurodevelopmental characteristics of adolescence, i.e., the development of parts of the brain that encode mental functions important in the aetiology of addiction, such as motivation. Motivation is a brain activity that processes the internal state of an individual and their environment and determines the activities of the individual towards the environment (19). It involves higher brain functions that determine an individual's behaviour to increase their chances of survival (20). An individual has several goals related to survival, such as obtaining food or providing shelter for the offspring. However, not all goals can be met at the same time and several behavioural strategies to achieve these goals need to be applied. The neural network responsible for motivation, therefore, has to provide mechanisms for setting priorities and allowing alternative activities to enable survival (19). Behavioural addictions are misguided motivations that give higher priority to meeting certain needs (e.g., craving for gambling) than to purposeful activities such as excellent school performance. Thus, the motivation to satisfy specific needs quickly, which is defined as impulsivity, gets priority over other motivational goals. An individual with behavioural addiction prefers to choose a smaller and faster than a larger but delayed reward and sets their goals accordingly (20). The primary motivational circuit consists of the prefrontal cortex and ventral

ponašajnom ovisnosti radije odabire manju i brzu nego veću, ali odgođenu nagradu te prema tome određuje svoje ciljeve (20). Primarni motivacijski krug čine prefrontalni korteks i ventralni strijatum koji utječe na odgovor motoričkih struktura (21). Taj primarni motivacijski krug povezan je sa sekundarnim motivacijskim krugom (slika 1.), koji primarni motivacijski krug opskrbljuje sa senzoričkim informacijama. Npr. hipokampus i amigdala primarnom motivacijskom krugu pružaju emotivno obojene informacije iz epizodičkog pamćenja povezane s motivacijskim podražajem, dok hipotalamus pruža manje složene informacije vezane uz instinktivno ponašanje kao što su hranjenje i reprodukcija. Navedene su strukture na početku konačnog razvoja u adolescenciji te su tako adolescenti vulnerabilniji za razvoj ponašajnih ovisnosti pa tako i poremećaja kockanja (19).

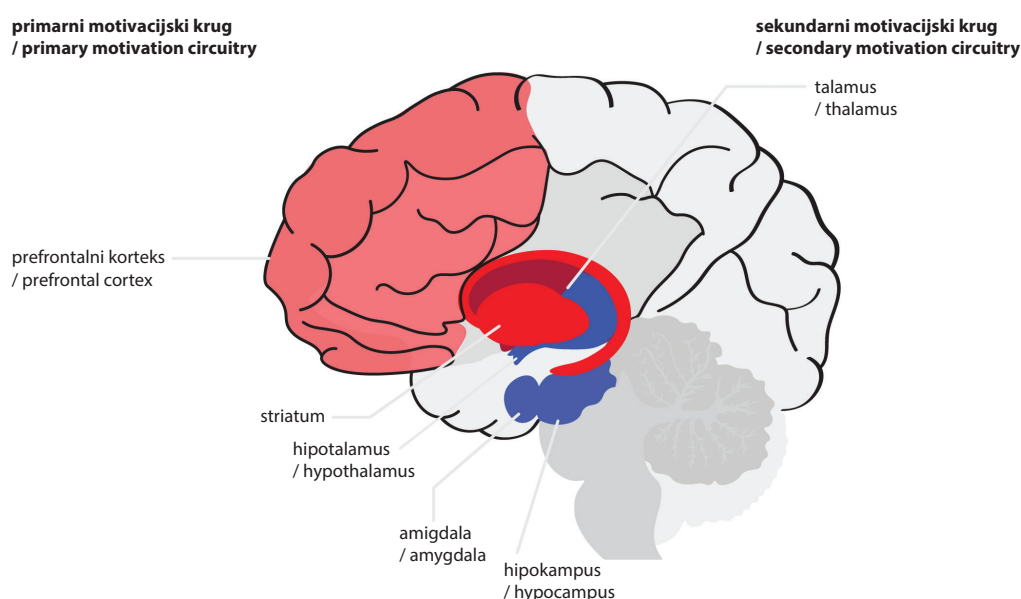
Primarni motivacijski krug čine prefrontalni korteks i ventralni strijatum koji dobivaju senzoričke informacije od sekundarnog motivacijskog kruga sastavljenog od hipokampusa, amigdala i hipotalamusa.

Nasuprot genetičkoj i neurorazvojnoj teoriji mnoštvo je okolišnih čimbenika koji utječu na

striatum, which impacts the response of motor structures (21). This primary motivational circuit is connected to the secondary motivation circuit (Figure 1) supplying the primary motivation circuit with sensory information. For example, the hippocampus and amygdala provide the primary motivational circuit with emotionally salient information from episodic memory associated with a motivational stimulus while the hypothalamus provides less complex information related to instinctive behaviour such as feeding or reproduction. These structures are at the beginning of final development in adolescence, which explains why adolescents are more vulnerable to the development of behavioural addictions, including gambling disorder (19).

The primary motivational circuitry consists of the prefrontal cortex and the ventral striatum, which receive sensory information from the secondary motivational circuitry composed of hippocampus, amygdala, and hypothalamus.

Contrary to genetic and neurodevelopmental theory, there is a multitude of environmental factors impacting the occurrence of this mental illness. The most significant are the *availability* and *accessibility* of gambling, and therefore countries with greater availability and accessibility of



SLIKA 1. Neuronski motivacijski krugovi
FIGURE 1. Neural motivational circuitry

pojavu ove psihičke bolesti. Najvažniji od njih su *dostupnost* i *pristupačnost* kockanja pa tako zemlje s većom dostupnošću i pristupačnošću igrama na sreću imaju veću prevalenciju poremećaja kockanja (22). *Dostupnost* označava da postoje mjesta na kojima se priređuju igre na sreću u određenom području, a *pristupačnost* ističe mogućnost korištenja kockarskog sadržaja, npr. da je takva aktivnost zakonski dozvoljena punoljetnim osobama. Navedeni ekološki čimbenici ključni su za razvoj poremećaja kockanja, budući da bez njih i biološki predisponirani pojedinci nemaju mogućnost razvoja patološkog obrasca ponašanja. *Dostupnost* i *pristupačnost* potenciraju se javnom politikom i zakonodavstvom koji izravno i neizravno stvaraju okruženje u kojem se kockanje prihvaća, potiče i promovira na društvenoj razini (23). Također, pokazano je da je veća prevalencija kockanja u područjima gdje je konzumacija alkohola dostupnija što je povezano sa smanjenjem samokontrole pod utjecajem alkohola (22), ali isto tako ukazuje na komorbiditetnu povezanost ovisnosti o alkoholu i poremećaja kockanja (9,10,22). Nadalje, sama priroda igara na sreću pridonosi razvitku problema u vulnerabilnih pojedinaca. Gotovo sve igre na sreću funkcioniraju prema sistemu neposredne isplate što pojedinca može ohrabriti da ponovno zaigra igru koja mu je prethodno donijela dobitak. Iako se ovakav sistem igranja teško može smatrati uzrokom nastanka i održavanja ponavljajućeg kockarskog obrasca ponašanja, ipak utječe na veću prevalenciju društvenog kockanja u zajednici (22). Od okolišnih predisponirajućih čimbenika važna je obiteljska struktura pogođenog pojedinca pri čemu je zamijećeno da neuspjeh roditelja u uspostavljanju discipline i visoko vrednovanje materijalnih stvari u obitelji pridonose patološkom razvitku (12).

Također, *specifične osobine ličnosti* povećavaju vjerojatnost nastanka ovisnosti (12). Osobe s poremećajem kockanja sklonije su impulzivnim reakcijama i traženju uzbuđenja te teško izbjegavaju za njih štetne situacije (10,22). Impulzivnost se opisuje kao težnja za što bržim nagrađivanjem

gambling have a higher prevalence of gambling disorder (22). *Availability* hereby implies that places for gambling are available in a certain area whereas *accessibility* points to the possibility of using gambling content, e.g., adults are legally allowed to gamble. The above stated environmental factors are crucial for the development of gambling disorder because without them even biologically predisposed individuals do not have the possibility of developing a pathological behavioural pattern. *Availability* and *accessibility* are emphasized by public policies and legislation that directly and indirectly create an environment in which gambling is accepted, encouraged and promoted at the societal level (23). Also, it has been shown that the prevalence of gambling is higher in areas where alcohol consumption is more available, which is associated with reduced self-control under the influence of alcohol (22), but also indicates a comorbid relationship between alcohol use disorder and gambling disorder (9,10,22). Furthermore, the very nature of gambling contributes to the development of other problems in vulnerable individuals. Almost all forms of gambling function according to a direct payout system which might encourage an individual to gamble again. Although this system of gambling can hardly be considered the cause of the emergence and maintenance of repetitive gambling patterns of behaviour, it still affects the higher prevalence of social gambling in a community (22). The family structure of the affected individual is a significant environmental predisposing factor as it has been observed that the failure of parents to establish discipline and high valuation of material things in the family contribute to pathological development (12).

In addition to that, *specific personality traits* increase the likelihood of addiction (12). Individuals with gambling disorder are more likely to have impulsive reactions and seek excitement as they find it difficult to avoid situations that can cause them harm (10,22). Impulsiveness is described as a desire to receive a reward as quickly as possible - an individual finds it difficult to endure delayed gratification, acts without thinking about

i teškim podnošenjem odgođene gratifikacije, djelovanje bez promišljanja o posljedicama, neosjetljivost na negativne posljedice te teško podnošenje zabrana (12,22). Osobe s poremećajem kockanja pokazuju veću razinu uzbuđenja pri kockanju od ostalih igrača što se manifestira i tjelesnim znakovima kao npr. ubrzanim pulsom (22). Ovi pacijenti skloni su i kompulzivnosti što je težnja za ponavljanjem izvođenjem neke radnje kako bi se smanjile teorijski negativne posljedice iako sama ta radnja može imati štetne posljedice. Zbog navedenog poremećaj kockanja i opsesivno-kompulzivni poremećaj (OKP) sličniji su, nego što se inače spominje u literaturi (10).

Prema *psihoanalitičkoj* teoriji poremećaj kockanja posljedica je poremećaja u procesu razvoja privrženosti (engl. *attachment*). Neadekvatno razvijena privrženost dovodi do emocionalne disregulacije koja se manifestira patološkim kockarskim ponašanjem (24). Pervazivni razvojni gubitak je temeljna odrednica kompulzivnog kockara što rezultira netolerancijom za predviđanjem budućih gubitaka, a žudnja za neprekidnim kockanjem je obrana od psihičke boli prouzročene razvojnim gubitkom prije samog početka kockanja (25). Također je aleksitimija, kao nedostatak razumijevanja, opisivanja i prepoznavanja vlastitih emocija (12), prisutna u osoba s poremećajem kockanja više nego u općoj populaciji (24). Navedeni je poremećaj, prema psihoanalitičarima, prisutan i u ostalim bolestima ovisnosti (26).

Kognitivno-bihevioralna teorija također nastoji objasniti podrijetlo poremećaja kockanja, koristeći se trima bitnim postavkama početka sudjelovanja u kockarskoj aktivnosti: negativnim emocionalnim stanjem, ponašajnim obrascima poput izbjegavanja suočavanja i kognitivnim zabudama o kockanju. Navedene postavke potvrđene su brojnim istraživanjima uzroka kockarskog ponašanja, a čini se da se navedene varijable međusobno isprepliću i da sve imaju podjednaku ulogu u nastanku poremećaja kockanja (22,27). Također, temelj su brojnim preventivnim programima namijenjenima adolescentima (28).

the consequences, has no sensitivity to negative consequences and finds it difficult to accept prohibitions (12,22). When gambling, individuals with gambling disorder express a higher level of excitement than other players, which is also manifested in physical signs such as rapid heart rate (22). These patients are also more inclined to compulsiveness, or the tendency to perform an action repeatedly in order to reduce consequences that are negative in theory, although the action itself might result in harmful consequences. Due to the above considerations, gambling disorder and obsessive-compulsive disorder (OCD) are more similar than it has been described in the literature (10).

According to *psychoanalytic* theory, gambling disorder is the result of a disorder in the process of attachment development. Inadequately developed attachment leads to emotional dysregulation manifested in pathological gambling behaviour (24). Pervasive developmental loss is a fundamental determinant of compulsive gambling resulting in intolerance to predict future losses whereas the craving for continuous gambling is a defence against the psychological pain caused by the developmental loss before gambling starts (25). Alexithymia, or the inability to understand, describe, and identify emotions experienced by oneself (12), is also more present in individuals with gambling disorder than in the general population (24). According to psychoanalysts, this disorder is also present in other addiction diseases (26).

Cognitive-behavioural theory also seeks to explain the origins of gambling disorder using three essential preconditions for early involvement in gambling activity: negative emotional state, behavioural patterns such as avoiding confrontation, and cognitive misconception about gambling. These assumptions have been confirmed by numerous studies on the causes of gambling behaviour. It appears that these variables are interlinked and all play an equally important role in the development of gambling disorder (22,27). They also form the basis for a number of prevention programmes for adolescents (28).

EPIDEMIOLOGIJA POREMEĆAJA KOCKANJA

Kockanje tisućljećima prožima različite kulture i društva. Osamdesetih godina prošlog stoljeća povećava se popularnost kockanja i značajno raste ukupni svjetski novčani dug nastao kockanjem (9). Zbog navedenog je kockanje 1980. godine uključeno u DSM. Tadašnji porast broja ovisnika posljedica je sve većeg prihvaćanja kockanja kao dijela stila života, širenja kockanja u područja gdje dotad kockarnice nisu postojale i globalizacijskih procesa čiji je primarni cilj zarada bez promišljanja o negativnom utjecaju na čovjeka (9). Bitan je čimbenik porasta broja ovisnika o kockanju razvoj tehnologije i novih proizvoda poput elektroničkih automata za kockanje koji su sve zastupljeniji od devedesetih godina prošlog stoljeća te omogućuju kockanje s početnim nižim novčanim ulozima (9). No, svakako se veliki doprinos širenju kockanja u posljednjem desetljeću mora pripisati mogućnosti *online* načina kockanja (9,29). Tako je u većini zemalja svijeta velika većina odraslih barem jednom sudjelovala u kockarskoj aktivnosti (30). Broj osoba koje pate od ovisnosti o kockanju posljednjih desetljeća još više raste te je današnja prosječna svjetska prevalencija u odrasloj populaciji 0,6 % (14), a prema nekim istraživanjima seže i do 10,6 % (5). Navedena diskrepanca između rezultata različitih epidemioloških istraživanja nastaje zbog zaista različite prevalencije kockanja u različitim dijelovima svijeta, ali i još uvijek nedovoljno usuglašenog instrumentarija i metodologije u procjeni učestalosti ove ovisnosti (14).

Muškarci češće imaju probleme s kockanjem od žena, međutim pojavnost i povezanost komorbiditetnih psihičkih poremećaja je izraženija kod žena. Naime, anksiozni i afektivni poremećaji češći su kod žena koje se javljaju na liječenje, dok kod ovisnosti o alkoholu i drugim PAT nema razlike između žena i muškaraca (14,32). Nadalje, studije provedene u zajednici pokazale su kako postojanje afektivnog ili anksioznog poremećaja može povećati rizik za kasniji razvoj poreme-

EPIDEMIOLOGY OF GAMBLING DISORDER

Gambling has been permeating different cultures and societies for millennia. In the 1980s, the popularity of gambling was on the rise and the total global monetary debt created by gambling increased significantly (9). Due to the above, gambling was included in the DSM in 1980. The increase in the number of addicts at the time was a consequence of the growing acceptance of gambling as part of lifestyle, the spread of gambling in areas where casinos had not existed before together with globalization processes whose primary goal was making profit without thinking about the negative impact on human lives (9). Another important factor related to the increase in the number of gambling addicts is the development of technology and new products such as electronic gambling machines, which have become more common since the 1990s and enable gambling with lower stakes initially paid (9). An even greater contributor to the spread of gambling over the past decade is definitely the possibility of online gambling (9,29). In most countries of the world, the vast majority of adults have participated in one of gambling activities at least once (30). The number of people suffering from gambling addiction has been growing even more in recent decades, and the current average global prevalence in the adult population is estimated to be 0.6% (14), and according to some studies it reaches as much as 10.6% (5). This discrepancy between the results of different epidemiological studies is due to a differing prevalence of gambling in different parts of the world but also to insufficiently harmonized tools and methodologies in estimating the frequency of this form of addiction (14).

Men are more likely to have gambling problems than women, however, the incidence and the association between comorbid mental disorders is more pronounced in women. To be specific, anxiety and affective disorders are more common in women who apply for treatment whereas alcohol use disorder and other PAS use disorders indicate no difference between women and men (14,32). Furthermore, community studies have shown that the presence of affective or anxiety disorder may

ćaja kockanja kod žena, ali ne i kod muškaraca (31,33,34).

Sve igre na sreću imaju određeni ovisnički ili adiktivni potencijal, ali taj je potencijal najveći kod igranja na aparatima, sportskog klađenja i ruleta. Obilježja ovih igara poput frekvencije događaja, mogućnosti manipuliranja ulozima, osjećaja da je dobitak blizu utječu na razvoj ovisnosti. Također, za sportsko klađenje potrebna je vještina što ovu igru čini iznimno popularnom. Nasuprot tome najmanje je ovisnika proizašlo iz ponavljajućeg igranja lutrijskih igara koje imaju niži adiktivni potencijal u odnosu na ostale igre na sreću (30).

Broj štetnih posljedica poremećaja kockanja je velik te približno jednak onima kod depresije i ovisnosti o alkoholu (9). Štetne su posljedice većinom uzrokovane financijskim problemima, utjecajem na emocionalne i obiteljske veze, oštećenjem zdravlja, nemogućnošću izvršavanja svakodnevnih aktivnosti (9,12). Nadalje, kao što je rečeno u uvodu, poremećaj kockanja je povezan s brojnim psihijatrijskim i organskim komorbiditetima (9), a suicidalne misli i ponašanje su 15 puta češći nego u općoj populaciji (35). Suicidne ideacije česte su u fazi gubitaka i u fazi oćaja te kao posljedica reaktivnih depresivnih dekompenzacija ovisnika o kockanju (32,35). Štetne se posljedice vrlo često prenose transgeneracijski (31), a njihov teret većinom nose marginalizirane socijalne skupine te kockanje pridonosi socioekonomskoj bipolarnosti društva (5). Unatoć brojnim negativnim utjecajima, problem kockanja u većem dijelu svijeta nije dovoljno prepoznat kao javnozdravstveni problem (9).

EPIDEMIOLOGIJA PROBLEMATIČNOG KOCKANJA MEĐU ADOLESCENTIMA

Kockarska je aktivnost učestalija među adolescentima nego među odraslima pa je tako prosječna europska prevalencija problematićnog kocka-

increase the risk of later development of gambling disorder in women but not in men (31,33,34).

All games of chance have a certain addictive potential, however, this potential is highest in the case of gaming machines, sports betting and roulette. Some characteristics of these games, such as the frequency of events, the ability to manipulate stakes, and the feeling that the gain is close at hand strongly affect the development of addiction. Also, sports betting requires skill which makes this game extremely popular. In contrast to that, the smallest number of addicts is associated with repetitive playing of lottery games as they have lower addictive potential compared to other games of chance (30).

The number of harmful consequences related to gambling disorder is high and approximately equal to the number of consequences related to depression and alcohol use disorder and PAS use disorders (9). Harmful consequences are mostly caused by financial problems, the impact on emotional and family relationships, impaired health, and the inability to perform regular daily activities (9,12). As stated in the introduction, gambling disorder is associated with a number of psychiatric and organic comorbidities (9) and suicidal thoughts and behaviours are 15 times more common in this group than in the general population (35). Suicidal ideations are common in the losing phase and in the phase of despair and as a consequence of reactive depressive decompensation of gambling addicts (32,35). Harmful consequences are very often transmitted transgenerationally (31) and their burden is mostly borne by marginalized social groups. In that way, gambling contributes to the socio-economic bipolarity of society (5). Despite numerous negative impacts, the problem of gambling has not been sufficiently recognized as a public health problem in most of the world (9).

EPIDEMIOLOGY OF ADOLESCENT PROBLEM GAMBLING

Gambling is an activity that is more common among adolescents than among adults and the average prevalence of problem gambling in Eu-

nja (zbog neurorazvojnih karakteristika za poremećaj kockanja u adolescentno doba koristi se termin *problematično kockanje*) 4 % (36), dok je u jugoistočnoj i istočnoj Europi prevalencija i veća. Provedena istraživanja pokazala su kako 12,9 % adolescenata u Hrvatskoj ima ozbiljne psihosocijalne probleme uzrokovane kockanjem te isto toliko u Bosni i Hercegovini (28,37). Osamdesetih godina prošlog stoljeća igranje igara na sreću postaje sve popularnije među adolescentima pa je Lesieurovo istraživanje tada pokazalo da je 5,7 % adolescenata patoloških kockara (tadašnji DSM III upotrebljava termin *patološko kockanje*) (38). Slično ranije navedenoj studiji presječno istraživanje koje je obuhvatilo 1313 španjolskih adolescenata pokazalo je da je 4 % adolescenata rizičnih kockara, i da je 1,2 % problematičnih kockara (39). Najpogođeniji adolescenti pripadnici su etničkih manjina pa su u Sjedinjenim Američkim Državama najčešći adolescenti problematični kockari Afro-Amerikanci (40,41) i Hispanci (41), što između ostalog ide i u prilog pretpostavkama da kockanje može pridonijeti separaciji i bipolarnosti društva (5). Kockari adolescenti mogu se razvrstati u tri skupine s obzirom na frekvenciju kockanja i razvijene psihosocijalne posljedice: društveni kockari, kockari pod rizikom i problematični kockari. Muški adolescenti čine većinu u svim skupinama (28). Kao i kod odraslih, najzastupljenije su igre vještine poput sportskog kladjenja (42). Adolescenti koji kockaju *online* imaju 1,5 puta veći rizik razviti problematično kockanje nego oni koji kockaju uživo u kockarnicama i kladionicama. Razlozi toga su veća dostupnost i anonimnost kod *online* kockanja. Nadalje, *online* se kockanje većinom provodi putem mobilnih aplikacija koje slabo ili nikako provjeravaju punoljetnost igrača (43), što potvrđuje manjkavu zakonsku regulativu ove ovisnosti za razliku od ovisnosti o alkoholu i ovisnosti o PAT (10). Nadalje, na društvenim mrežama postoje skupine podrške kockara (većinu na tim platformama čine mladi kockari) koje služe kao platforma za razmjenu savjeta o uspjehu u kockarskim igrama i pronalazak partnera u tim igrama (44).

rope (due to neurodevelopmental characteristics of adolescent gambling disorder the term “problem gambling” is used) is at 4% (36) with an even higher prevalence in Southeast and Eastern Europe. Research has shown that 12.9% of adolescents in Croatia and the same number of adolescents in Bosnia and Herzegovina have serious psychosocial problems caused by gambling (28,37). In the 1980s, gambling became increasingly popular among adolescents and Lesieur’s research indicated that 5.7% of adolescents were pathological gamblers (at the time, DSM-III used the term “pathological gambling”) (38). Similar to the previous study, a cross-sectional study of 1,313 Spanish adolescents found that 4% of adolescents were at-risk gamblers, and 1.2% were problem gamblers (39). Ethnic minorities are the most affected group among adolescents. In the United States, the most common problem gamblers are African-American (40, 41) and Hispanic adolescents (41), which supports the assumption that gambling can contribute to separation and bipolarity of society (5). Adolescent gamblers can be divided into three groups according to the frequency of gambling and the developed psychosocial consequences, i.e., social gamblers, risk gamblers and problem gamblers. Male adolescents make up the majority in all groups (28). As with adults, skill games such as sports betting are the most common (42). Adolescents who gamble online have a 1.5 times higher risk of developing problem gambling than those who gamble live in casinos or betting shops. This can be explained by greater availability and anonymity in online gambling. Furthermore, online gambling mostly takes place via mobile applications that check the age of players poorly or not at all (43), indicating that there is a lack of legislation on gambling addiction in contrast to the existing legislation on alcohol use disorder and PAS use disorders (10). Furthermore, there are gambling support groups on social media (the majority on these platforms are young gamblers) that serve as platforms for the exchange of tips on successful gambling practices and for finding partners in gambling games (44).

VULNERABILNE SKUPINE

Veći rizik za nastanak poremećaja kockanja imaju muškarci (dva puta veći rizik od žena), mlađe odrasle osobe i adolescenti, osobe s manjim prihodima i samci (9,14). Dodatni rizični čimbenici su život u visoko depriviranoj okolini, nedostatak osnovnog obrazovanja i nezaposlenost (9). Većina rizičnih skupina živi u naseljima s velikim brojem prodajnih mjesta (9). Protektivni čimbenici su roditeljski nadzor, pripadnost religiji (14) i razvijene vještine donošenja odluka i rješavanja problema (45).

OBILJEŽJA KOCKANJA ADOLESCENATA – SITUACIJA U HRVATSKOJ

Kockanje adolescenata razlikuje se od kockanja odraslih zbog razvojne specifičnosti adolescentne dobi. To je razdoblje povećanog traženja uzbuđenja i rizika kako bi se preuzela kontrola nad životom što stvara osjećaj ugone i veću vršnjačku prihvaćenost. Budući da je kockanje ponašajna ovisnost u kojoj su jedni od glavnih obilježja traženje uzbuđenja i sklonost riziku, ne iznenađuje činjenica da su adolescenti rizična skupina za razvoj ovog poremećaja (46).

Istraživanje u Hrvatskoj koje je obuhvatilo 261 srednjoškoluca dobi između 13 i 19 godina pokazalo je da je 75 % adolescenata kockalo barem jednom u životu (46). Navedeno istraživanje pokazalo je i da kockanje više pogađa muške adolescente što je u skladu sa svjetskim podacima. Oni više igraju one kockarske igre koje su povezane s rizikom razvoja problematičnog kockanja kao što su klađenje u sportskim kladionicama, kartanje, igre na elektronskim automatima, rulet, poker i klađenje na utrke konja. Razlike između djevojaka i mladića ne postoje u frekvenciji igranja onih igara koje ne dovode do razvoja problematičnog kockanja kao što su Loto, Bingo i jednokratne srećke (46). Prema dobivenim podacima u ovoj studiji u Hrvatskoj

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Men are exposed to a higher risk of gambling disorder (the risk is twice higher than in women), followed by younger adults, adolescents, low-income individuals and single persons (9, 14). Additional risk factors are associated with living in a highly deprived environment, lack of primary education and unemployment (9). Most at-risk groups live in settlements with a large number of outlets (9). Protective factors include parental control, religious affiliation (14) and developed decision-making and problem-solving skills (45).

CHARACTERISTICS OF ADOLESCENT GAMBLING - SITUATION IN CROATIA

Adolescent gambling differs from adult gambling due to the uniqueness of the development in adolescence. Adolescence is a period marked with an increased interest for excitement and risk in order to gain control over one's life and this creates a sense of comfort and better acceptance by peers. Taking into account that gambling is a behavioural addiction, the main features of which are seeking excitement and an appetite for risk, it is not surprising that adolescents are one of the main risk groups for developing this disorder (46).

A study conducted in Croatia comprising 261 high school students between the ages of 13 and 19 found that 75% of adolescents had gambled at least once in their lifetime (46). This study also indicated that gambling affects male adolescents more, which is in line with the international evidence. Adolescents are more interested in the gambling games associated with the risk of developing problem gambling, such as sports betting, card games, slot machines, roulette, poker and horse race betting. There are no differences between girls and boys related to the frequency of playing the games that do not result in problem gambling, such as lotto, bingo and lottery tickets (46). The data obtained in the above mentioned

je između 20 % i 25 % rizičnih te između 7 % i 11 % problematičnih kockara adolescenata, što je značajno više nego u općoj populaciji, ali i više nego u zemljama u okruženju. Iako je ovo istraživanje pokazalo da ne postoji razlika u rizičnosti za razvoj problema povezanih s kockanjem između strukovnih škola i gimnazija (46), druga je studija također iz 2011. g. na 403 srednjoškolaca trećih razreda pokazala da učenici strukovnih škola češće kockaju od učenika u gimnazijama (8). Prosječna dob društvenih, rizičnih i problematičnih kockara je 16,5 godina što pokazuje veliko značenje provođenja prevencije već u osnovnoj školi. Najznačajniji je prediktor rizičnosti kockanja, prema navedenom istraživanju, sklonost uključivanju u druga rizična ponašanja, npr. krađe, razbojništva i rizično seksualno ponašanje. Iz toga proizlazi teza da različite vrste rizičnog ponašanja ne možemo promatrati zasebno, nego da postoji sindrom problematičnog ponašanja. Iz priloženog se vidi širina problema (čiji je dio i kockanje) te su potrebne sveobuhvatne terapijske i preventivne intervencije, koje će uključiti ne samo vulnerabilne skupine nego i roditelje te širu zajednicu (8,47).

Recentnije istraživanje u Hrvatskoj s puno većim uzorkom od 2702 srednjoškolaca iz sedam hrvatskih gradova potvrdilo je zaključke ranijeg istraživanja (48). I ovdje je najčešća vrsta kockanja među hrvatskim adolescentima sportsko klađenje, te je registrirano da kod čak 12,9 % adolescenata postoje ozbiljni psihosocijalni problemi povezani s kockanjem (28,42,48) što je svakako alarmantan i zabrinjavajući podatak (48). Rezultati navedenog istraživanja pokazuju da je čak 72,9 % učenika kockalo barem jednom u životu, što ukazuje u prilog značajnoj dostupnosti i pristupačnosti igara na sreću što pokazuje da se zakonska regulativa u RH nedovoljno poštuje. Nadalje, ova je studija pokazala da je zastupljenost problematičnog kockanja podjednaka u svim razredima. Dakle, mladi počinju intenzivno kockati i prije srednjoškolskog obrazovanja te njihovo kockanje vrlo brzo iz društvenog prelazi u problematično. Navede-

study indicate that between 20% and 25% of adolescents in Croatia are at-risk gamblers while between 7% and 11% are problem gamblers, which is significantly higher than in the general population and the neighbouring countries. Although this study pointed out that there is no difference in terms of risk of developing gambling-related problems between vocational schools and gymnasiums (46), another study from the year 2011 comprising 403 third-grade high school students found that vocational school students gambled more often than high school students (8). The average age of social, at-risk and problem gamblers is 16.5 years, indicating the importance of prevention already in primary schools. According to that study, the most important predictor of gambling risk is the inclination to engage in other risky behaviours, such as theft, robbery and risky sexual behaviour. Hence the thesis that different types of risky behaviour cannot be observed separately but that there is a syndrome of problematic behaviour. The presented findings point to the scope of the problem (part of which is gambling) and require comprehensive therapeutic and preventive interventions, including not only vulnerable groups but also parents and the broader community (8,47).

A more recent study conducted in Croatia on a much larger sample of 2,702 high school students from seven Croatian cities confirmed the conclusions of the earlier study (48). It also found that the most common type of gambling among Croatian adolescents is sports betting and that as many as 12.9% of adolescents have serious psychosocial problems related to gambling (28,42,48), which is certainly very alarming and worrying (48). The results of this study indicate that as many as 72.9% of students gambled at least once in their lives, confirming significant availability and accessibility of games of chance on the one hand, and an inadequate application of legislation in Croatia on the other. Furthermore, this study showed that the prevalence of problem gambling is the same in all school grades. Thus, young people start gambling intensively even before starting high school, and their gambling

no je zaista zabrinjavajuće, budući da je rani početak kockanja značajan rizični čimbenik za razvoj poremećaja kockanja u odrasloj dobi (48).

Smatra se kako bitnu ulogu u prevenciji nastanka problematičnog kockanja u adolescenata imaju stručni suradnici (pedagozi, psiholozi, knjižničari, rehabilitatori, logopedi, socijalni pedagozi) zaposleni u srednjim školama. Istraživanje u Hrvatskoj objavljeno 2020. godine pokazalo je da stručni suradnici podcjenjuju veličinu problema kockanja i da je njihova procjena prevalencije problematičnog kockanja daleko ispod one utvrđene u istraživanjima. To se može pripisati činjenici da se stručni suradnici rjeđe susreću s problematičnim kockanjem jer puno više radnog vremena provode s problemima kao što su konzumacija cigareta, ovisnosti o internetu i video-igricama, specifične teškoće učenja, konzumiranje alkohola, poremećaj s prkošenjem i suprotstavljanjem, depresija, vršnjačko nasilje, poremećaji ponašanja i ovisnost o PAT. Nadalje, profesionalci koji rade s mladima u školama više obraćaju pažnju na ona ponašanja koja su veći problem u školama s obzirom na njihov učinak na razrednu i školsku atmosferu, dok je poremećaj kockanja više skriven te postane vidljiv tek kada nastanu značajne posljedice. Također, problematično kockanje ne uzrokuje tjelesne simptome za razliku od ovisnosti o PAT-u (49). Puno češće od zaposlenika škole problematično kockanje otkriju članovi obitelji, budući da kockanje značajno narušava obiteljsku dinamiku (50). Iz navedenog proizlazi da je stručnjake zaposlene u školama potrebno dodatno educirati o karakteristikama i posljedicama poremećaja kockanja, budući da su oni ti koji imaju snažan utjecaj na psihosocijalni razvoj mladih (49).

Najznačajniji prediktori za težinu problematičnog kockanja adolescenata su učestalost kockanja, ustrajanje u kockanju zbog dobitka, iskustvo ranog dobitka većeg iznosa novca, specifična motivacija za kockanjem, kao npr. postizanje većeg zadovoljstva, zarađivanje,

very quickly turns from social to problem gambling. This is indeed worrying, as early gambling is a significant risk factor for the development of gambling disorder in adult age (48).

It is considered that other professionals (pedagogues, psychologists, librarians, rehabilitators, speech therapists, social pedagogues) employed in secondary schools have a very important role in preventing the occurrence of problem gambling in adolescents. A study conducted in Croatia and published in 2020 found that professional associates underestimate the size of the gambling problem and that their assessment of the prevalence of problem gambling is far below what the research has found. This can be attributed to the fact that professional associates are less likely to encounter problem gambling because they dedicate much more of their working time to problems such as cigarette consumption, internet and video gaming addiction, specific learning difficulties, alcohol consumption, oppositional defiant disorder, depression, peer violence, behavioural disorders and addiction to PAS. Furthermore, professionals working with young people in schools pay more attention to the behaviours that represent a big problem because of their impact on the atmosphere in classrooms and schools. Thus, gambling disorder remains concealed and emerges only when significant consequences occur. Furthermore, problem gambling does not cause physical symptoms unlike the addiction to PAS (49). Family members can discover problem gambling much more often than school employees because gambling significantly disrupts family dynamics (50). It follows from the above that professionals employed in schools need to be further educated about the characteristics and consequences of gambling disorder since they are the ones who can have a strong impact on the psychosocial development of young people (49).

The most important predictors of the severity of adolescent gambling problems are gambling frequency, persistence in gambling for gains, experience of earning more money early on in life, specific motivation to gamble, such as accomplishing greater satisfaction, earning, and

unaprjeđenje vještina kockanja (51). Nadalje, lošiji školski i akademski uspjeh, slabiji stupanj obrazovanja roditelja, postojanje psihijatrijskih komorbiditeta također su prediktori razvoja i težine problematičnog kockanja (52).

PSIHOSOCIJALNE POSLJEDICE KOCKANJA ADOLESCENATA

Životni ciljevi adolescenata koji kockaju i onih koji ne kockaju se razlikuju. Adolescenti koji ne kockaju više cijene osobni rast i razvoj, međuljudske odnose, životnu zajednicu i zdravlje. Oni skloni kockanju više cijene bogatstvo i životnu slavu (53).

Kockanje uzrokuje brojne posljedice za adolescenta, a najizraženije su one psihološke, socijalne i financijske. Najznačajnija je pozitivna korelacija prisutna između navedenih posljedica i adolescenata koji spadaju u skupinu problematičnih kockara, a manje kod rizičnih kockara. Kockanje ostavlja trag na psihičko zdravlje pa tako što je više vremena provedeno kockajući, to je veća pojavnost depresije i drugih bolesti ovisnosti. Adolescenti kockari su i lošijeg fizičkog zdravlja budući da su češće intoksicirani alkoholom i drugim PAT (51, 52). Kockanje promiče antisocijalno ponašanje pa su tako adolescenti kockari skloniji delinkventnom ponašanju i kršenju zakona (51). Iz navedenog je vidljivo da su posljedice adolescentnog kockanja slične posljedicama kockanja u odrasloj dobi (12).

LIJEČENJE POREMEĆAJA KOCKANJA

Liječenje poremećaja kockanja odraslih

Otprilike 10 % osoba koje boluju od poremećaja kockanja potraži nekakav oblik stručne pomoći (14). Muškarci potraže stručnu pomoć nakon duljeg razdoblja kockanja i u ranijoj životnoj

improving gambling skills (51). Furthermore, poorer school and academic performance, lower level of parent's education, and presence of psychiatric comorbidities are also important predictors of the development and severity of problem gambling (52).

PSYCHOSOCIAL CONSEQUENCES OF ADOLESCENT GAMBLING

Adolescents who gamble and those who do not gamble have very different life goals. Adolescents who do not gamble value personal growth and development, interpersonal relationships, community they live in and health. Adolescents prone to gambling value wealth and fame more (53).

Gambling results in many consequences for the adolescent, the most pronounced being psychological, social and financial. The most significant is the positive correlation between the above stated consequences and adolescents belonging to the group of problem gamblers, which is less expressed with at-risk gamblers. Gambling impacts mental health and the more time an individual spends gambling, the higher the incidence of depression and other addictive diseases. Adolescent gamblers are also in poorer physical health as they are more often intoxicated with alcohol and other PAS (51, 52). Gambling promotes antisocial behaviour and adolescent gamblers are thus more prone to delinquent behaviour and breaking the law (51). The above that the consequences of adolescent gambling are similar to the consequences of gambling at adult age (12).

TREATMENT OF GAMBLING DISORDER

Treatment of gambling disorder in adults

Approximately 10% of individuals with gambling disorder seek some form of professional help (14). Men seek professional help after a long period of

dobi nego žene (14). Razlozi traženja stručne pomoći su raznoliki, no kao najčešći su financijski i obiteljski razlozi ali i sukob sa zakonom (14,47). Provedena istraživanja pokazala su da su psihološke terapijske intervencije najučinkovitija metoda liječenja ove skupine bolesnika te da dovode do značajnog poboljšanja u kliničkoj slici. Unutar kategorije psiholoških terapijskih intervencija studije provedene u posljednjih nekoliko godina pokazuju najveću učinkovitost kognitivno-bihevioralnih tretmana (54-59), ali i učinkovitost tretmana temeljenih na motivacijskom intervjuu (60-62, 59).

Liječenje problematičnog kockanja adolescenata

Trenutno ne postoje znanstveno potvrđene smjernice za liječenje adolescenata koji su problematični kockari. Ipak, zabilježeni su uspjesi s programima temeljenima na kognitivnoj terapiji, budući da su kognitivne distorzije o kockarskom ponašanju značajan prediktor težine kockanja u adolescenata (36). Kognitivno-bihevioralna teorija pretpostavlja da pogrešna uvjerenja adolescenata (npr. nedostatak razumijevanja nezavisnosti događaja, percepcija vještine u uspješnom predviđanju slučajnih ishoda i događaja te druge iluzije kontrole) potiču njihovo ponavljajuće i kontinuirano kockarsko ponašanje. Međutim, za razliku od odraslih ovisnika o kockanju adolescenti su manje skloni potražiti stručnu pomoć, a kada potraže pomoć već su suočeni s teškim psihosocijalnim posljedicama kockanja (36). S obzirom na to da značajan postotak adolescenata najprije potraži pomoć *online*, grupe podrške koje bi se provodile *online* mogu biti vrlo korisne kao dodatna terapijska intervencija ove populacije bolesnika, ali samo kao dodatak strukturiranim terapijskim protokolima (36).

Istraživanja su pokazala da mnogi adolescenti počinju kockati zbog utjecaja vršnjaka pa su vještine otpornosti vršnjačkom pritisku i vje-

gambling and at an earlier age than women (14). The reasons for seeking professional help are varied, but the most common include financial and family reasons as well as conflict with the law (14,47). Research has shown that psychological therapeutic interventions are the most effective method of treating this group of patients as they lead to a significant improvement in the clinical picture. In the category of psychological therapeutic interventions, studies conducted in recent years indicate the greatest effectiveness of cognitive-behavioural treatments (54-59) as well as the effectiveness of treatments based on motivational interviews (60-62, 59).

Treatment of problem gambling in adolescents

There are currently no scientifically accepted guidelines for treating adolescent problem gamblers. Nevertheless, successes have been reported with programmes based on cognitive therapy, as cognitive distortions about gambling behaviour are a significant predictor of the severity of gambling disorder in adolescents (36). Cognitive-behavioural theory assumes that misconceptions among adolescents (e.g., lack of understanding of event independence, perception of skill in successfully predicting random outcomes and events, and other illusions of control) encourage their repetitive and continuous gambling behaviour. However, unlike adult gambling addicts, adolescents are less likely to seek professional help, and when they do seek help, they are already faced with the severe psychosocial consequences of gambling (36). Given that a significant percentage of adolescents first seek help online, support groups that would provide counselling online could be very useful as an additional therapeutic intervention for this patient population but only as an addition to the structured treatment protocols (36).

Research has found that many adolescents start to gamble because of peer influence and thus resistance to peer pressure and decision making and problem solving skills are the foundation of

štine poput donošenja adekvatnih odluka te rješavanja problema temelj efikasnim preventivnim i terapijskim programima za adolescente koji su problematični kockari (45, 28, 63).

PREVENCIJA RAZVOJA POREMEĆAJA KOCKANJA MEĐU ADOLESCENTIMA

Uzimajući u obzir visoku prevalenciju problematičnog kockanja u adolescentskoj dobi (36, 38,39) te rezultate istraživanja prema kojima je dob početka kockanja povezana s težinom kliničke slike (14,64), važno je preventivne programe provoditi u adolescenciji (28).

Postoje dvije osnovne vrste preventivnih modela poremećaja kockanja, a to su model smanjenja štetnih posljedica i model odgovornog kockanja. Model smanjenja štetnih posljedica je primarni preventivni program, koji se temelji na identificiranju rizičnih i protektivnih čimbenika te njihovoj redukciji odnosno jačanju. Najznačajniji protektivni faktor koji je u modelu naglašen je edukacija o rizičnom ponašanju i dugoročnim štetnim posljedicama kockanja. S druge strane, model odgovornog kockanja uključuje programe i strategije koji podižu svjesnost o štetnosti kockanja u zajednici i omogućuju lakši pristup liječenju. Ovaj model većinom obuhvaća osobe koje već imaju probleme s poremećajem kockanja te djeluje na razini sekundarne i tercijarne prevencije. U ovom modelu postoje smjernice koje ukazuju na to kada kockanje prestaje biti aktivnost iz zabave (rekreativno kockanje) i postaje poremećaj (tablica 1) (65).

Brojni su preventivni programi dizajnirani prema modelu smanjenja štetnih posljedica, ali tek malobrojni uzrokuju pozitivne promjene u ponašanju. Prvi program koji je to uspio bio je kanadski program „Naslagani špil” (engl. *Stacked Deck*) Williamsa i suradnika. Sadržaj programa, sastavljen od 6 lekcija, kreirao je interdiscipli-

effective prevention and treatment programmes for adolescent problem gamblers (45, 28, 63).

PREVENTION OF THE DEVELOPMENT OF GAMBLING DISORDER IN ADOLESCENTS

Given the high prevalence of problem gambling in adolescence (36,38,39) and the results of research according to which the age of onset of gambling is associated with the severity of the clinical picture (14,64), it is important to implement prevention programmes in adolescence (28).

There are two basic types of gambling disorder prevention models, i.e., the harm reduction model and the responsible gambling model. The harm reduction model is a primary prevention programme based on the identification of risks and protective factors and their reduction or strengthening. The most significant protective factor highlighted in this model is education on risky behaviour and long-term harmful effects of gambling. On the other hand, the responsible gambling model comprises programmes and strategies that raise awareness about harmful consequences of gambling in the community and facilitate access to treatment. This model mostly includes people who are already faced with problems associated with gambling disorder and functions at the level of secondary and tertiary prevention. This model also provides guidelines explaining when gambling ceases to be a fun activity (recreational gambling) and becomes a disorder (Table 1) (65).

Numerous prevention programmes have been designed according to the harm reduction model but only a few cause positive changes in behaviour. The first programme to do so was the Canadian Stacked Deck programme created by Williams *et al.* The content of the programme consisting of 6 lessons was created by an interdisciplinary team and the aim was to implement the programme in the form of interactive discussions and multimedia lectures. In addition

TABLICA 1. Smjernice odgovornog kockanja s ciljem prevencije relapsa poremećaja kockanja (65).
TABLE 1. Responsible gambling guidelines aimed at preventing gambling disorder relapse (65).

SMJERNICE ODGOVORNOG KOCKANJA / RESPONSIBLE GAMBLING GUIDELINES
1. Ne posuđuj novac za kockanje. / Don't borrow money for gambling.
2. Kockaj samo s viškom novca, ne kockaj s novcem koji je namijenjen za svakodnevne troškove. Ograniči kockarske troškove na 1 % od ukupnih prihoda. / Gamble only with excess money, do not gamble with money that is intended for everyday expenses. Limit gambling costs to 1% of total revenue.
3. Imaj i druge aktivnosti u slobodno vrijeme osim kockanja. / Have other leisure activities besides gambling.
4. Odredi si budžet novca namijenjen kockanju i nemoj ga prekoračiti. / Set yourself a budget of money designed for gambling and don't overspend it.
5. Ne koristi automate za kockanje kako bi nabavio dodatan novac za kockanje. / Don't use slot machines to get extra money to gamble.
6. Nemoj ganjati gubitke. Prihvati ih kao sastavni dio zabave. / Don't chase losses. Accept them as an integral part of the fun.
7. Kockaj zbog zabave. Ne shvaćaj kockanje kao izvor prihoda. / Gamble for fun. Don't perceive gambling as a source of income.
8. Zadađ si vremensko ograničenje za kockarske aktivnosti. Nemoj kockati više od tri puta mjesečno. / Give yourself a time limit on gambling activities. Don't gamble more than three times a month.
9. Ograniči si izloženost kontinuiranom načinu kockanja, npr. <i>online</i> načinima. / Limit your exposure to continuous gambling, e.g. online gambling.
Kockaj manje od navedenog ili ne kockaj uopće, ako: / Gamble less than the above stated or don't gamble at all, if: <ul style="list-style-type: none"> • se trenutno liječiš od poremećaja kockanja. / you're currently being treated for gambling disorder, • si depresivan/na ili imaš druge psihičke tegobe. / you're depressed or have other mental health problems, • si u financijskim problemima. / you're in financial trouble.

narni tim, a težnja je bila na samoj provedbi programa, odnosno na interaktivnim diskusijama i multimedijским predavanjima. Osim što je cilj programa bio poboljšati znanje o kockanju i otkloniti kognitivne zablude o kockanju, program je nastojao poboljšati interpersonalne i intrapersonalne vještine koje su pokazane kao značajan protektivni čimbenik poput jačanja otpornosti nad vršnjačkim pritiskom, vještine rješavanja problema i vještine donošenja odluka. Evaluacija programa 2010. obuhvatila je 1686 kanadska srednjoškolca, a nastojalo se obuhvatiti sve učenike jedne generacije kako bi se kontrolirao i smanjio vršnjački pritisak za sudjelovanjem u kockarskim aktivnostima. Svaka lekcija trajala je jedan sat i trideset minuta te se program provodio kroz više tjedana (zadnja *booster* lekcija bila je nakon mjesec dana od pete lekcije), jer je učenje tijekom duljeg razdoblja bolje od opetovanih lekcija koje slijede jedna za drugom u kraćem vremenskom razdoblju. Evaluacija programa pokazala je statistički značajno bolje znanje, ispravljene kognitivne zablude, bolje interpersonalne i intrapersonalne vještine četiri mjeseca nakon

to improving knowledge and removing cognitive misconceptions about gambling, the objective of the programme was to improve interpersonal and intrapersonal skills, which have been found to be significant protective factors such as strengthening resilience to peer pressure, problem-solving and decision-making skills. The evaluation of the programme conducted in 2010 included 1,686 Canadian high school students. Its aim was to cover all students of one generation in order to control and reduce peer pressure related to participating in gambling activities. Each lesson lasted one hour and thirty minutes and the duration of the whole programme was several weeks (the last "booster" lesson took place one month after the fifth lesson) because learning over a longer period of time produces better results than repeated consecutive lessons over a shorter period of time. The evaluation of the programme showed statistically significantly improved knowledge, corrected cognitive misconceptions, and better interpersonal and intrapersonal skills four months after the implementation of the programme in comparison with the results of the pretest. However, the importance of this programme results from a statistically

provedbe programa u odnosu na rezultate pretestiranja. Međutim, važnost je ovog programa u statistički značajnom smanjenju frekvencije kockanja četiri mjeseca nakon provedbe programa i statistički značajnom smanjenju broja problematičnih kockara u *booster* grupi u odnosu na kontrolu (45).

Nadalje, hrvatski preventivni program „Tko zapravo pobjeđuje” također je kvalitetan program prevencije namijenjen srednjoškolicima. Program se razvijao od 2012. do 2015., a tijekom tog vremena brojni stručnjaci su educirani za samu provedbu intervencije te je 2016. godine implementiran u hrvatske srednje škole obuhvaćajući 190 hrvatskih srednjoškolaca, njihove roditelje i profesore u školama. Cilj i sadržaj isti su kao i u kanadskom programu te je program učinkovit u statistički značajnom poboljšanju znanja i redukciji kognitivnih zabluda vezanih uz kockanje. Međutim, program tada nije uspio smanjiti broj problematičnih kockara (28, 37). Nakon ove pilot implementacije sadržaj programa modificiran je tako da je prilagođen uskom školskom kurikulumu te je raspoređen u kraće, ali brojnije radionice. Modificirani program obuhvatio je 629 srednjoškolaca iz 18 hrvatskih gradova. Rezultati pokazuju da program statistički značajno povećava znanje o kockanju, statistički značajno smanjuje kognitivne zablude o kockanju, npr. iluziju kontrole, praznovjerje i netočne koncepte vjerojatnosti. Međutim, mali je statistički značajan pozitivan učinak programa na smanjenje učestalosti sudjelovanja u sportskom kladenju i igranju lutrije, a drugi učinak na ponašanje nije zabilježen (66). No, svakako je ovaj projekt temelj pozitivnim promjenama u kockarskim navikama hrvatskih srednjoškolaca, budući da na njemu radi interdisciplinarni tim koji kontinuirano unaprjeđuje sadržaj i metode provedbe programa (28,37).

Talijanski stručnjaci predlažu jeftin i efikasan preventivni program, koji bi provodili posebno educirani učitelji u srednjim školama. Glavni

significant reduction in gambling frequency four months after the programme implementation and a statistically significantly reduced number of problem gamblers in the booster group compared to the control group (45).

Furthermore, the Croatian prevention programme entitled “Who Actually Wins” is a quality prevention programme intended for high school students. The programme was developed from 2012 to 2015, and during that period many experts were trained to implement the intervention. In 2016, it was implemented in Croatian high schools with the participation of 190 Croatian high school students, their parents and teachers. The objective and content of the programme were the same as in the Canadian programme. The programme proved to be effective as it led to statistically significant improvement of knowledge and reduction of cognitive misconceptions related to gambling. However, at the time the programme failed to reduce the number of problem gamblers (28, 37). After the pilot implementation, the content of the programme was modified and adapted to a restricted school curriculum and divided into a series of shorter but more frequent workshops. The modified programme included 629 high school students from 18 Croatian cities. The results indicate that the programme statistically significantly increases knowledge about gambling and reduces cognitive misconceptions about gambling such as the illusion of control, superstition, and incorrect concepts of probability. However, there is a limited statistically significant positive effect of the programme on reducing the frequency of participation in sports betting and playing lotteries. No other effect on behaviour was found (66). However, this project is certainly the basis for positive changes in the gambling habits in Croatian high school students since an interdisciplinary team has been working on it continuously to improve the content and methods for its implementation (28,37).

Italian experts suggest a cheap and effective prevention programme, the implementation of which would be in the hands of specially educated high school teachers. The main objective of the programme is to influence knowledge about

cilj programa je utjecati na znanje o kockanju i promijeniti ponašanje vezano uz to isto. Stručnjaci smatraju da pozitivna interakcija između učitelja i učenika može tome pridonijeti više nego javnozdravstvene kampanje. Proveli su istraživanje o učinkovitosti navedenog programa koje je obuhvatilo 33 učitelja i 393 učenika. Program se odvijao u dva stupnja. Prvi je stupanj obuhvatio edukaciju učitelja koji će provoditi program. Edukacija je bila podijeljena na četiri modula koncipirana u obliku predavanja i diskusija s ciljem poboljšanja znanja o kockanju, spoznaje o štetnim posljedicama oglašavanja kockarskih aktivnosti, razrješenja zabluda vezanih uz kockanje. Četvrti je modul najvažniji, jer uči učitelje kako prepoznati problematično kockanje među njihovim učenicima. Idući stupanj je bio provjera kvalitete edukativnog programa za učitelje, odnosno primjena naučenog u praksu. Istraživanje je pokazalo da je preventivni program snažno pozitivno promijenio znanje i ponašanje učenika vezano uz kockanje, a najveći rezultat programa je što je zaista smanjio broj učenika u grupi problematičnih kockara i osoba pod rizikom. Program ima dugotrajan učinak budući da je završno ispitivanje provedeno sedam mjeseci nakon zadnjeg dana programa. Učenici koji su prošli program pokazuju i manji stupanj kognitivnih distorzija i uvjerenja u zablude o kockanju. Ovaj je program drugačiji od drugih, jer ističe važnost edukacije učitelja kao glavnih nositelja borbe protiv ovisnosti adolescenata. Ograničenje ovog programa jest to što je manjina učitelja prihvatila rad u ovom projektu što znači da se mora poraditi na motiviranosti učitelja kako bi program bio još učinkovitiji. Nadalje, potrebno je uključiti i educirati druge bitne osobe u životima adolescenata, npr. roditelje, kako bi prevencija bila kompletna. Međutim, unatoč ograničenjima ovaj program je pokazao da se ne mora težiti skupim programima kako bi se postigla učinkovita prevencija već je potrebno educirati osobe koje su svaki dan u kontaktu s mladima pa samim

gambling and change the behaviour related to gambling. Experts believe the positive interaction between teachers and students can contribute to this more than public health campaigns. A study on the effectiveness of this programme was conducted including 33 teachers and 393 students. The programme was organized in two stages. The first stage included the education of teachers who would implement the programme. The training was divided into four modules in the form of lectures and discussions with the aim of improving knowledge about gambling, harmful effects of advertising gambling activities, and resolving misconceptions related to gambling. The fourth module is the most important because it educates teachers how to recognize problem gambling among their students. The next stage involves checking the quality of the training programme for teachers, i.e., the application of what has been learnt in practice. The study found that the prevention programme had a strong positive impact on the knowledge and behaviour of students in relation to gambling. The most important result of the programme is the fact that it in fact reduced the number of students in the group of problem gamblers and at-risk individuals. The programme has a long-lasting effect, which was evidenced in the final evaluation conducted seven months after the last day of the programme. Students who had passed the programme also showed a lower degree of cognitive distortions and beliefs in gambling misconceptions. This programme is different from other programmes because it emphasizes the importance of educating teachers as the main actors in the fight against adolescent addiction. The limitation of this programme is related to the fact that a minority of teachers have accepted to participate in the project, leading to a conclusion that the motivation of teachers should be further developed in order to make the programme even more effective. Furthermore, it is necessary to involve and train other individuals that play an important role in the lives of adolescents, e.g., parents, to make the prevention complete. However, despite its limitations, this programme showed that programmes do not have to be expensive in order to achieve effective prevention. Instead, it

time mogu najviše promijeniti njihove navike i razmišljanja (67).

Većina programa za ciljnu skupinu ima srednjoškolce, a malobrojni programi imaju studente na fakultetima. Međutim, i takvi programi imaju potencijal biti učinkoviti. Program Kinga i Hardyja temelji se na osnivanju tima zvanog Akcijski tim za kockanje (engl. *Gambling Action Team*, GAT) koji je sastavljen od brojnih stručnjaka koji organiziraju simpozije o kockanju, grupe savjetovanja za studente s poremećajem kockanja, kreiraju internetske stranice s ciljem podizanja svijesti o štetnosti kockanja, surađuju s medijima i predstavnicima vlasti. Ovakvi su programi obećavajući jer obuhvaćaju gotovo sve aspekte povezane s razvojem ovisnosti: samo-osvješćivanje, razvoj vještina, edukaciju, medijski utjecaj. Međutim, koliko je autoricama dostupno, ne postoji evaluacija ovog programa u literaturi, što je ograničavajući čimbenik u daljnjoj implementaciji ovog programa (63).

ZAKLJUČAK

Poremećaj je kockanja od velikog javnozdravstvenog značenja zbog visoke prevalencije i psihosocijalnih posljedica koje uzrokuje. Osobe s poremećajem kockanja zapostavljene su u usporedbi s ostalim ovisnicima. Naime, puno je manje literature o poremećaju kockanja nego literature o ovisnosti o alkoholu ili PAT. Naravno, to je s jedne strane opravdano jer je puno više ovisnika o alkoholu, zatim drugi oblici ovisnosti uzrokuju teške fizičke simptome te je ova ovisnost puno manje zanimljiva s forenzičkog aspekta. Međutim, ako problem sagledamo s perspektive u kojoj je poremećaj kockanja komorbiditetan s drugim psihičkim i tjelesnim bolestima, da su brojni adolescenti problematični kockari, da broj ovisnika o kockanju raste zbog kontinuiranog razvijanja načina kockanja *online*, da zakonski okvir u RH koji zabranjuje maloljetnicima sudjelovanje u igrama na sreću nije adekvatan, onda uviđamo da su potrebne

is necessary to educate those who are in everyday contact with young people and can thus have the biggest impact on young people's habits and ways of thinking (67).

Most programmes are targeted at high school students and only a few programmes focus on college students. However, those programmes have the potential to be effective as well. King and Hardy introduced a programme based on the establishment of a team called the Gambling Action Team (GAT) that consists of a number of experts who organize gambling symposia, counselling groups for students with gambling disorder, create websites to raise awareness about the dangers of gambling and collaborate with the media and government officials. Programmes like this are promising as they cover almost all aspects related to the development of addiction: self-awareness, development of skills, education, and media influence. However, as far as the authors of this paper know, there is no evaluation of this programme in the literature, which is a limiting factor for its further implementation (63).

CONCLUSION

Gambling disorder is a matter of great public health concern due to its high prevalence and the psychosocial consequences it causes. Individuals with gambling disorder are neglected compared to other groups of addicts. Namely, there is much less literature available on gambling disorder than on alcohol use disorder or PAS. Of course, this is to a certain degree justified, as there are many more alcohol addicts. Also, other forms of addiction cause severe physical symptoms, which makes this addiction much less interesting from a forensic point of view. Nevertheless, if we look at the problem from the perspective according to which gambling disorder is comorbid with other mental and physical illnesses, that many adolescents are problem gamblers, that the number of gambling addicts is growing due to the continuous development of online gambling, that the legal framework in the Republic of Croatia gambling is not adequate, we come to a conclusion

jasne javnozdravstvene strategije koje će spriječiti daljnju eskalaciju problema. U budućnosti je potrebno staviti naglasak na razvijanje kvalitetnih preventivnih programa koji će biti usmjereni prema vulnerabilnim skupinama podložnima razvoju problematičnog kockanja i poremećaja kockanja. Kao što je rečeno, stvaranje preventivnog programa složen je proces. Dugotrajni i sveobuhvatni programi (primjer su kanadski preventivni program „Naslagani špil” te hrvatski preventivni program „Tko zapravo pobjeđuje”) temelj su kvalitetne primarne prevencije (68). Na temelju spoznaja iz spomenutih programa potrebno je u budućnosti razvijati preventivne intervencije koje će obuhvatiti sve aspekte razvoja ovisnosti – od individualnog razvoja pojedinca, obiteljskog i socijalnog okruženja do zakonodavstva uz multidisciplinsku i interdisciplinsku suradnju raznih profesionalaca te podršku politike.

that distinct public health strategies are needed to prevent further escalation of the problem. In the future, it is necessary to emphasize the development of quality prevention programmes aimed at vulnerable groups susceptible to the development of problem gambling and gambling disorder. As mentioned above, creation of a prevention programme is a complex process. Long-term and comprehensive programmes (e.g., the Canadian prevention programme named “Stacked Deck” and the Croatian prevention programme named “Who Actually Wins”) are the foundations of quality primary prevention (68). Based on the knowledge gained from the above mentioned programmes, it is necessary to develop preventive interventions in the future that will include all aspects of addiction development, ranging from individual development, family and social environment to legislation together with multidisciplinary and interdisciplinary cooperation between various professionals and policy support.

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