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## **Risk Factors of Gambling Disorder Among Adults – Research Report**

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### **Abstract**

The aim of the article is to present the results of research conducted in 2021 in Poland, the subject of which were risk factors of gambling disorder in selected age groups. The research was carried out by means of a systematic review of the literature on the subject, while maintaining the necessary elements of the PRISMA standard. The research material consisted of English-language articles selected in a systematic review, published in high-rated scientific journals. The conclusions from the research, including the most common risk factors for gambling dis-

order, allowed for the formulation of proposals and recommendations in the field of universal and selective prophylaxis addressed to adults.<sup>1</sup>

**Keywords:** risk factors, gambling disorders, gambling addiction, adults, systematic review.

## Introduction

Gambling disorder is, among other addictive behaviours, a frequent consequence of risky gambling by people of different ages. The scale of this phenomenon in various age groups is the subject of many Polish and foreign studies. In the 2019 report, entitled “The estimation of the prevalence and the identification of risk factors and protective factors of gambling and other addictive behaviours, it showed that gambling is perceived by a significant part of the society as behaviour with not the highest addictive potential. One-fourth of respondents do not fully believe that cash games are harmful. The perception of the low harmfulness of gambling, minimising the risk and misconceptions about the random nature of the game are important risk factors for gambling disorders” (Moskalewicz et al., 2019, p. 177). Poles play the game mainly for financial and entertainment reasons: to improve their financial situation, have the pleasure of winning even a small amount, they count on a big win, or just want to have fun (Moskalewicz et al., 2019, p. 166). Research shows that about 2–3% of the population has gambling problems, and 1% suffer from so-called abnormal gambling tendencies. The data contained in the report indicate that people aged over 15 who played for money at least once in the year preceding the survey, accounted for 37.1% of all Poles. 4.5% of the respondents played in a way that could lead to addiction, in the case of 3.7% we can talk about the risk of addiction, addicts constituted 0.9% of the population. Most often, gambling problems are experienced by young peo-

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<sup>1</sup> The article presents selected results of research carried out by the systematic review method, while the research assumptions and overall research results have been published in a monograph, which is the result of a research project entitled “Prevention of gambling disorder based on the results of scientific research,” which was published in 2021 by the Publishing House of the Jagiellonian University in Krakow. The publication of the monograph was financed by the Fund for Solving Gambling Problems at the disposal of the Minister of Health, which is at the disposal of the National Centre for Counteracting Addictions.

ple, men aged 18–24, with primary or lower secondary education, declaring a low satisfaction with their financial situation (Moskalewicz et al., 2019, pp. 153–160). The vast majority of cash gamers define themselves as people who “do not feel compulsive in any way” (97.0%). Comparing this percentage with the percentage of those who gamble without a gambling problem according to the Canadian Gambling Index (88.6%), it turns out that 8.4% of players are unaware that the way they gamble can be classified as a risky or pathological style of gambling (Moskalewicz et al., 2019, p. 164).

In the light of such disturbing data on the scale of the phenomenon of addiction to gambling or gambling in a harmful way, it is justified to undertake research on the risk factors of gambling disorder in various age groups. This article presents some of the research results and focuses on a group of adult gambling users.

Among the research categories that require definition, one should first of all indicate gambling, described by the term gambling. The games of chance are games of chance, mutual wagering, card games and slot machine games (Act on gambling, 2009).

Gambling disorder is a disease entity characterised by: impaired control over gambling; increasing the priority of gambling over other daily activities and life interests; continuation or escalation of gambling despite the occurrence of negative consequences resulting from it. Such a pattern of behaviour leads to significant stress or impairment of personal, family, social, educational, and professional functioning or other important areas in human life (ICD-11, 2021).

In the light of the analysis of empirical research and the literature on the subject in the field of gambling disorders, it should be stated that there is no one comprehensive theoretical model that takes into account the interacting risk factors explaining the emergence, development and persistence of gambling disorders. Risk factors are ecological, psychophysiological, developmental, cognitive, and behavioural, and all of them should form the basis of effective strategies for the prevention and treatment of gambling disorders (Błaszczynski et al., 1995, p. 196). Addiction to gambling/gambling disorders – like other disorders – is conditioned by many factors, such as biological, genetic, mental predispositions and factors from the social environment, but gambling disorders also have specific conditions, such as the technology

itself and technological progress, as it significantly affects the availability or advertising and marketing defined as situational and structural factors. Situational factors are primarily environmental characteristics such as the location and number of gambling points in a given area and the omnipresence of advertising in encouraging people to gamble. These factors can trigger the impulse to gamble.

Structural features play a role in enhancing gambling and are: the payout ratio and the frequency of gambling events (the number of opportunities to gamble within a given period of time). The higher the frequency of events, the more likely the activity in question is to cause problems with one's gambling. Gambling disorders/addiction to gambling is also conditioned by external factors such as: the amount of the stake, the frequency of winnings, the amount of losses in a given time, rewards (number and value of prizes), probability of winning, elements of skills and perceptions of skills (actual and only perceived skills and knowledge), number of situations close to winning, lighting and colour effects (e.g. use of red lights on slot machines), sound effects (e.g. use of buzzers or melodies indicating winning), the social or anti-social nature of the game (individual and/or group), the availability (opening hours, membership rules, number of points of sale), the location of the gambling place, the type of gambling place, the advertising, and the rules of the game. Many structural features depend on individual psychological factors, they are interrelated, and therefore the structural approach is useful in preventive and therapeutic research and practice (Griffiths, 1999, pp. 266–272).

According to Raylu and Tian Po Oei, three groups of risk factors for gambling disorders can be distinguished: 1) family (including environmental: social learning and genetic factors), 2) individual personality traits of an individual, such as sensation seeking, impulsivity, psychoticism, neuroticism; antisocial personality disorder, narcissistic personality disorder, and attention deficit hyperactivity disorder; cognitive factors, negative psychological states; biological and biochemical factors; and 3) sociological (social factors, including environmental and cultural factors) (Raylu & Oei, 2019, pp. 29–37). At the same time, these groups of factors are a model of factors that predispose, cause and persist in gambling disorders. The former determine the susceptibility to experiencing problems related to gambling. Triggering factors push for excessive gambling and lead to the development of

problem gambling, while persistent factors support gambling disorders (Raylu & Oei, 2019, pp. 29–37).

### **A method of research on the risk factors of gambling disorders in adults**

This research was conducted using a systematic review method and corresponds to the research approach defined as evidence-based practice (Sackett et al., 1997, p. 71). A systematic review is “a review of the scientific literature using a well-defined set of methods to reduce systematic errors (biases) by identifying, evaluating and synthesising the results of all relevant basic research (regardless of the study design) to obtain an answer to a specific research question (or a set of research questions)” (Petticrew et al., 2006, p. 10). The systematic review method enables the collection and presentation of reliable and credible scientific evidence. The cognitive goal of the systematic review method was to identify risk factors in the area of adult gambling disorder prevention. The practical goal of the research was to formulate recommendations for the creation of a gambling disorder prevention programme, taking into account the most important risk factors in the area of preventing gambling disorder adequately to adulthood.

A systematic review, depending on the type of review research, follows a strictly defined scheme. In this study, the database was defined using the EBSCO multi-search engine for scientific publications, and then the sources were selected according to the adopted inclusion/exclusion criteria. This database contains a wide range of publications in the field of social sciences, and its usefulness in research is based, *inter alia*, on the high relevance factor to balance the importance of individual search results and has rich metadata for the application of this algorithm, such as subject terms, abstracts provided by authors, keywords provided by authors, article titles, and other metadata elements. The high relevance index, *i.e.*, the level of compliance of a given article with the search terms, is: compliance with the subject terms of the controlled dictionaries, compliance with the title of the article, compliance with the keywords provided by the author, compliance with the keywords in the abstract, compliance of the search term with the words in full text (EBSCO, 2021). This database collects full-text multi-domain publications, including the re-

sources of the most popular specialist databases, such as Taylor & Francis, SAGE Premier, Wiley Online Library and Springer Link. The research was conducted in accordance with the PRISMA 2020 methodological standards, which means the recommended reporting elements for systematic reviews and meta-analyses, and these standards are still discussed and optimised in the scientific community, due to the goal of methodological quality and credibility of the obtained and developed empirical data (Moher et al., 2015, p. 1).

This review uses formal and content-related selection criteria. The formal criteria are: articles in English only, contained only in peer-reviewed journals, from 2013–2021 (the year of publication of DSM 5 – Diagnostic and Statistical Manual of Mental Disorders, the next edition of the American Psychiatric Association’s classification of mental disorders, which was published on 18 May, 2013). The following criteria were used as substantive inclusion/exclusion criteria: compliance with the problem of risk factors of gambling disorders in adulthood; taking into account the results of quantitative or qualitative research in the text; the principle that a research report is not a meta-analysis or a systematic review; the principle that the article does not apply to ethnic minorities or specific social groups, i.e. (migrants, refugees, people with disabilities) and professional (health services, war veterans, sportsmen).

First, abstracts were selected, and after their relationship with the key words was positively verified, full-text databases were analysed. It is essential that each step in a systematic review is properly reported to replicate studies and maintain transparency of each phase of the study. The research question in accordance with the PRISMA standards was formulated based on the PICO research formula – population (target group), phenomena of interest (intervention), context (research context) – and it was a question of risk factors in preventing gambling disorder in adulthood. For the key words “risk factor gambling adult,” using the formal criteria for on/off, full texts were selected mainly from journals such as: Journal of Gambling Issues, International Gambling Studies, Journal of Gambling Studies, International Journal of Mental Health and Addiction, Journal of the International Neuropsychological Society, Psychology of Addictive Behaviors. After organising the collected sources and performing a thematic analysis, the obtained data, prepared in accordance with the principles of methodological correctness, allowed for the

identification of risk factors for gambling disorder among adults and for the formulation of conclusions and recommendations for the creation of prophylactic programmes and the broader support and prophylactic practice in the field of preventing adult gambling disorder. The results of studies obtained by the method of systematic review may also constitute the first step to conduct meta-analyses or empirical field studies towards the search for the most effective preventive or therapeutic interventions in the field of gambling disorders.

### **Risk factors of gambling disorder in adults – analysis of the collected material**

68 full-text scientific articles were included in the full analysis and synthesis. Most of the research underlying the reports was of a correlational nature. 5 of the selected studies are longitudinal studies, some of the reports concern quantitative experimental studies or qualitative studies (Martins et al., 2013, pp. 657–668; Carbonneau et al., 2018, pp. 1203–1215; Morvannou et al., 2018, pp. 379–391; Binde et al., 2019, pp. 709–724). In studies involving adults, three inseparable subcategories were distinguished: students, young adults and adults up to the age of 55 (See, for example, the research group in the report of P. Binde et al., 2019, it is a group aged 30–49).

In general, the objectives of the studies included in the synthesis focused on the study of the scale of the phenomenon and selected risk factors of gambling disorder. Moreover, research reports focused on behaviours or factors co-occurring with gambling disorder.

The theoretical foundations of the analysed research reports were interdisciplinary, dominated by the cognitive-behavioural approach (Mathieu et al., 2020, pp. 1–15) and theories of generational transmission (Lang et al., 2013, pp. 551–573), as well as mental resilience (Monacis et al., 2014, pp. 622–627). The theoretical foundations in most of the analysed reports are eclectic, referring to social learning, the theory of parental attitudes, generation transmission, psychopathological factors and health problems in the studied families of addicts (Poole et al., 2017, pp. 1187–1200). In their research reports, the authors refer to post-traumatic stress disorder, the importance of childhood trauma, and cognitive distortions in compulsive gamblers. Most research reports are the diagnosis of the state or phase of the phenomenon of gambling

disorder, based on a pathogenetic model, often reports concerned the factors causing and sustaining gambling, and these reports refer in the interpretative layer to the concepts and models explaining gambling disorders.

Risk factors of addiction/gambling disorders are generally not defined in the introduction to research reports, rather they are mentioned or described in the context of the chosen concept/theory underlying the theoretical basis of the research. In the narrative synthesis of research reports, it is not possible to separately describe a specific risk factor; the reports identify many factors, both individual and environmental, most often related synergistically.

Conclusions from the analysis of research reports allow for the identification of **individual risk factors** of gambling disorder in the group of adults surveyed. These are factors of a biological, genetic or personality nature that can be classified in the light of the models described above as factors predisposing, triggering and maintaining gambling disorders in adults.

The results of studies presented in selected reports indicate that risk factors are specific depending on the sex of the respondents. Several analysed research reports indicated that the risk of exposure to risk factors for gambling disorder was greater in young men than in women, while older women gambled more often than older men (Russell et al. 2019, p. 6). The risk factors of female gambling disorder were: age: 18–24 years old, ethnic origin, living in an extended family or with other families, unemployment, private betting, preference to play scratch cards or bingo, and engaging in gambling behaviour for reasons other than social reasons such as a financial incentive to simply win money or the motive was the need for general entertainment. On the other hand, significant predictors of gambling risk among men were: age 18–24, using a language other than English at home, lower level of education, living in a larger household, unemployed or non-working person status (compared to full-time employment), betting on races, sports or lottery games (as compared to not betting on these forms) and engaging in gambling behaviour motivated by financial or entertainment (Russell et al., 2019, p. 6).

Individual personality risk factors include: mental stress, gambling motives, cognitive distortions (Mathieu et al., 2020, pp. 1–14), as well as fluid/unstable self-esteem of an individual (measured on the scale: stability vs. fluidity of self-esteem (McGrath et al., 2018, pp. 21–38).



Individual personality risk factors that play the role of moderators in the research on the right to gamble are: impulsivity (McGrath et al., 2018, pp. 21–38) sensation-seeking and addictive behaviours (Ginley et al., 2014, pp. 521–536; Caldeira et al., 2017, pp. 280–290; Otisa et al., 2021, p. 11040 (1–11)), susceptibility to anxiety, anxiety and depression occurring simultaneously (Chen et al., 2018, p. 2774), gambling alone (Bristow et al., 2018, pp. 689–696), low sense of coherence (Langham et al., 2016, pp. 1–25), financial motivation, gambling urges, as well as lying on the individual side, problems with alcohol, nicotine or drugs and reduced self-control (Russell et al., 2019, p. 6; Hing et al., 2020, pp. 277–295). Moreover, reports indicate aggressive/destructive behaviour, childhood anxiety (Lister et al., 2015, pp. 995–1003), exposure to independent stressful life events (Lister et al., 2015, pp. 995–1003), as well as problems with nicotine along with cannabis use and criminal acts are (Ahuja et al., 2008, pp. 1–15). Individual risk factors also include cognitive disorders, such as “magic thinking” and maladaptive decision-making strategies, such as procrastination. (Passanisi et al., 2017, pp. 51–58), as well as a maladaptive coping style, a sense of hopelessness (Goghari, 2020, pp. 767–782; Otisa et al., 2021, pp. 110–400), identified with emotional regulation deficits in conjunction with the motivation to escape negative emotions, the gambling motive is therefore an escape from life problems (Marchica et al., 2020, pp. 1–9).

Research on risk factors or factors protecting gambling disorder almost always emphasises the relationships between individual, environmental or situational-structural factors and confirms the theses about the multidimensionality of gambling and the existence of factors causing and supporting/perpetuating gambling behaviour and the role of such factors as related to each other: male gender, cognitive distortions and coping with emotions, because “the basic function of interpersonal attachment is the regulation of emotions” (Calado et al., 2017, pp. 648–657).

The gambling behaviour of parents (or their gambling disorder) or other close relatives such as siblings or grandparents, as well as close relatives outside the family, such as friends, and their drinking and smoking habits, are common risk factors for generation transmission. Adult subjects reported a family history of gambling disorders, substance use disorders, mental dis-

orders, and depression (Fortune et al., 2013, pp. 329–342; Lang et al., 2013, pp. 551–573; Lister et al., 2015, pp. 995–1003; Dowling et al., 2018, pp. 16–20).

Research reports can identify a set of factors that contribute to “neglect in childhood,” such as: contact with a violent home, separation of parents or divorce, and living with a family member who has been reported to have problems with substance abuse, criminal behaviour or mental illness), childhood trauma or negative life experiences in childhood (Ahuja et al., 2008, pp. 1–8; Poole et al., 2017, pp. 1187–1200; Goghari, 2020, pp. 767–782; Hearn et al., 2021, pp. 1–26). The risk factors were parental attitudes towards gambling and the perception of gambling by families and peers (Gay et al., 2016, pp. 30–51). Accepting gambling behaviour in the family home, in TV advertisements, in shops, on billboards or during sports events makes the child consider gambling as a social norm and something that is not stigmatised or considered incorrect or deviant. Such attitudes of parents were strongly correlated in studies with problem gambling in adulthood (Hood et al., 2015, pp. 497–505).

Retrospective studies of adults indicated the role of school and the lack of educational success during school education in engaging in gambling behaviour, and there is no direct relationship between low grades at school and risky gambling. Among the hypotheses explaining this relationship, there is a line of development: from low grades in subsequent classes to low final grades, lower socio-economic status as a result of performing lower paid jobs with a lower social status, which in turn may lead to resorting to gambling due to motive of wanting to get rich, covering debts or even boredom in a life perceived as unattractive (Froberg et al., 2015, pp. 420–428; Latvala et al., 2018, pp. 505–513).

Surrounding oneself with simulation social games, the availability of various gambling games such as internet games and at the same time playing in casinos or hot spots play a special role among the situational and structural factors in the analysed reports – the more types and the greater the frequency of gambling activities, the greater is the risk (Gainsbury, 2015, pp. 136–153; King et al., 2016, pp. 401–409; Welte et al., 2017, pp. 327–342; Carboneau et al., 2018, pp. 1203–1215).

Participation in online gaming groups, i.e., the use of online gambling communities, appeared in the research as a separate risk factor. One indi-

cator of the use of these communities was the number of online gambling accounts, and the more such accounts, the stronger the link with problem gambling (Gainsbury, 2015, pp. 723–728). Another factor of a situational and structural nature is the amount of the prize money, and research results indicate that higher amounts of payouts correlate with the frequency of gambling disorders, regardless of the type of game and the player's individual motivation to participate in gambling (Quilty et al., 2016, pp. 481–499).

### **Research conclusions and recommendations for preventive practice**

The fact that as a result of the systematic review there were few research reports from the Central European cultural circle, and rather Australian, Canadian or Asian studies dominate, does not allow to consider the identified risk factors as universal. Gambling itself as a social phenomenon appears in the research as internally diverse, heterogeneous, and depending on the cultural context. The social context also affects the type of gambling, e.g., in Canada and the United States, unlike in Europe, bingo is popular, and the research focuses on the most frequently chosen form of gambling and the specifics of a given game.

Students and young adults prevail among the surveyed adults. Most often, the research identifies individual risk factors (temperamental, personality). As for the type of test, there are often screening tests or longitudinal tests, where the first measurement took place during adolescence. Gambling disorders in longitudinal studies are the result of generation transmission (models of parents' (especially mother's) gambling behaviour or parental attitudes that accept gambling) or are correlated with neglect, violence or a traumatic childhood.

The analysis of research reports allows for the formulation of recommendations for the design and implementation of gambling disorders prevention programmes. Among them should be indicated for:

- the need to comprehensively treat preventive measures as educational and, at the same time, political or legislative (in terms of preventing excessive exposure to gambling and gambling advertising, which is omnipresent in the child's educational environment),

- taking into account the results of empirical research in planning preventive measures targeted at specific age groups characterised by specific risk factors,
- taking into account the socio-cultural context in which solutions are designed and implemented to reduce the disturbed pattern of gambling,
- the need to cover children and adolescents with educational and prophylactic programmes and programmes for the prevention of gambling disorders, not only the prevention of aggressive behaviour or addiction to psychoactive substances,
- the need to cover young adults with educational activities in the field of responsible parenthood, raising parents' health awareness, and educational competences to prevent the transfer of positive attitudes towards gambling onto children in the family,
- the validity of designing and implementing preventive measures based on scientific evidence and adapted to the socio-cultural context, directed not only at children and adolescents, but also at adults in order to reduce the influence of factors predisposing, causing or perpetuating a disturbed gambling pattern.

### **Recommendations in the area of conducting empirical research**

The aim of the article is to present the results of studies conducted using the systematic review method, concerning risk factors for gambling addiction among adults. Bearing in mind the research results presented above, and the conclusions and recommendations for preventive practice derived from them, the implications for conducting research in the area of gambling addiction prevention should be pointed out. A systematic review can lead not only to qualitative syntheses, but also allows to design meta-analytical studies and – based on the conclusions of meta-analyses – build theoretical concepts explaining the phenomenon of gambling addiction. On the basis of these concepts, effective preventive actions can be planned. Identification of risk factors and their correlates allows for effective prevention programmes to be conducted.

The indicated research limitation, such as having research conducted outside the native cultural circle, may be an inspiration to undertake research in the Polish or European cultural and civilisation area. Addictive behaviours related to gambling and social problems resulting from them are intensifying nowadays, as shown by the above-mentioned studies.

Contemporary diagnostic research built on a complementary approach should also include the diagnosis of protective factors (resources), hence the postulate of conducting review studies, meta-analyses and designing empirical field studies aimed at diagnosing protective factors against gambling addiction.

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