

Social Trends, Psychological Predictors, and Prevention of Gambling in Kazakhstan

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Abstract: The primary objective of this study is to identify the social and psychological predictors associated with problematic gambling and to explore the potential of using a specialized online intervention based on cognitive-behavioral therapy (CBT) integrated with Gamban and BetBlocker applications. The study included an online survey of 3,000 individuals from Kazakhstan, of which 523 respondents (17.4%) exhibited signs of pathological gambling, and 218 participants (159 men and 59 women) participated in a three-month intervention. The tools employed were the Diagnostic Questionnaire for Pathological Gambling (DQPG), the Barratt Impulsivity Scale (BIS-11), and the Beck Depression Inventory (BDI). The results indicated that the observed rates of problematic gambling symptoms in the surveyed online sample were significantly higher among men, adolescents, and individuals with lower levels of education and income, highlighting the social and economic vulnerability of these groups. The highest levels of problematic gambling symptoms were observed among adolescents aged 16–18 and middle-aged adults (36–55 years), emphasizing the importance of preventive measures for these age categories. Participation in the online intervention based on cognitive-behavioral therapy (CBT), supplemented by the use of the Gamban and BetBlocker applications, was associated with reductions in symptoms related to problematic gambling behavior, impulsivity, and depression. The results may be of practical value for the development of targeted preventive programs and for further research on digital approaches to gambling-related interventions.

Keywords: Addiction, Gambling Addiction Prevention, Modern Technologies, Online Support, Psychological Interventions, Psychology.

Introduction

Due to the development of digital technologies and the rapid growth in the accessibility of the Internet, gambling has undergone significant changes over the past decade (Saran, 2024). Whereas participation in gambling previously involved physical bookmakers, casinos, and gaming halls, today online gambling offers virtually unlimited opportunities for expansion (Demireva & Iacono, 2025). Its emergence among various age and social groups is also fueled by factors such as rising stress levels, economic instability, personal issues, digital transformation of leisure activities, and others (Savolainen et al., 2024; Wardle et al., 2024). Gambling in its various forms is fundamentally based on risk—a heightened sensation in which players or participants stake money or valuables on the outcome of events determined by chance, such as lotteries, online gambling, and casinos (Deng, 2024). In the absence of pathology, that is, harmful and unhealthy cravings, gambling can be viewed as a form of recreation. However, when pathological gambling arises—when an individual loses control over their gambling behavior—it develops into gambling addiction, which requires treatment (Chamberlain et al., 2024). Gambling addiction is classified as a mental disorder primarily characterized by impaired impulse control (Stein, 2024). The negative consequences of gambling are evident, with the most destructive of them being the deterioration of mental health, the breakdown of family relationships, reduced work productivity, financial and reputational losses, and social isolation (Muggleton et al., 2021). Gambling addiction is also often accompanied by impulsive behavior, anxiety disorders, and depression (Villalba-García et al., 2025).

Furthermore, young people under the age of 25 are at heightened risk, as they are more susceptible to aggressive marketing from gambling operators, which is carried out through online advertisements, billboards, posters, and websites (Rossi & Nairn, 2024). Understanding the psychological predictors of gambling addiction is crucial in the development of effective preventive programs because if individuals at risk can be identified before addiction takes hold, preventive measures can be implemented (Lemmel & Morina, 2024). The challenge lies in the fact that psychological predictors may vary depending on the characteristics of the country, social group, and cultural specifics (Lelonek-Kuleta et al., 2025).

In the case of Kazakhstan, over the past decade, there has been an increase in youth involvement in gambling due to the opening of new betting offices and gaming halls, with global disruptions such as the pandemic further exacerbating this trend (Aliyeva, 2025; Konstantinov et al., 2024). To prevent the spread of this issue, the state has taken regulatory measures concerning gambling; however, there is still a noticeable lack of proven interventions that could help individuals avoid becoming addicted or overcome harmful dependencies (Lemmel & Morina, 2024). Given the growing threat of a wider spread of gambling addiction, there is a pressing

need to develop and implement effective prevention strategies, as well as to provide assistance to individuals already affected by gambling addiction through specialized interventions (So et al., 2024). Furthermore, it is important to consider that modern technological solutions can complement traditional psychological support programs and open new opportunities for combating gambling addiction through the use of specialized applications or programs (Raj et al., 2024). The relevance of this issue is emphasized by the need for empirical data on social trends, psychological predictors, and methods for reducing gambling addiction in Kazakhstan. The scientific value of this article lies in expanding the theoretical understanding of the variables studied in the context of this work. From a practical perspective, the results can be utilized in the development of preventive measures and/or support programs for individuals prone to problematic gambling. Social workers, psychologists, and staff from educational institutions and organizations may find the conclusions of this article valuable in their work. The research is also important to policymakers who are involved in creating more effective legislative and regulatory measures in gambling.

Literature Review

Problematic gambling is associated with serious psychological, social, and financial consequences, leading to job loss, erosion of family trust, increased debt, loneliness, depression, and the development of suicidal tendencies (So et al., 2024). This is particularly concerning given that men are more likely to engage in gambling, and the suicide rate among men is higher than that among women (Reynolds et al., 2025). According to some data, the impact of advertising for sports gambling is linked to an increase in gambling involvement across various advertising platforms, with this effect being particularly pronounced among high-risk players who are already susceptible to potential harm (McGrane et al., 2025). An additional risk comes from the development of digital gambling, which lacks physical controls, provides 24/7 access to games via smartphones or computers, and utilizes algorithms that encourage players to continue placing bets (Judijanto & Tehedi, 2024). Research often identifies youth and individuals with low financial literacy and education, as well as those already struggling with other addictions (alcohol or drugs), as particularly vulnerable groups for the development of gambling problems, although other risk factors may also contribute (Grubbs et al., 2024; Leino et al., 2021). This underscores the need not only to develop effective strategies to combat gambling addiction but also to identify its social and psychological predictors (Nedeljković et al., 2024). Globally, over the past decade, there has been a rise in gambling participation, with key trends including a reduction in the age at which individuals begin gambling, its digitization, and an increase in problematic gambling among young populations (Favieri et al., 2025; Imperatori et al., 2017). Streaming platforms, social networks, interactive advertising on websites, mobile applications, as well as influencers and esports, are all actively used by gambling developers

(Torrance et al., 2025). Many countries are working on developing tools for early identification of addicted players, supporting individuals with gambling problems, and implementing measures to regulate gambling advertisements and the gambling industry (Spångberg & Svensson, 2020).

A certain set of cognitive characteristics, individual personality traits, and emotional states constitute psychological predictors that predispose individuals to the development of gambling addiction (Rodríguez et al., 2025). These predictors include emotional instability, cognitive distortions, impulsivity, low self-esteem, a tendency to seek thrills, and high levels of anxiety (Dowling et al., 2025; Verdejo-Garcia et al., 2021). Depressive individuals may use gambling as a way to relieve stress and escape from reality (Alaba-Ekpo et al., 2025). At the same time, individuals with high impulsivity tend to place bets without evaluating the long-term consequences (Broussard et al., 2024). Many gamblers exhibit cognitive distortions, such as the belief that the next game will certainly be successful or that certain symbols or events occur for a reason, acting as signs or magical omens of victory (Tan & Tam, 2024). None of this is connected to reality, providing the gambler with only an illusion of control, where they are convinced that they can influence the random outcome of the game, thereby perpetuating an endless cycle of losses with the hope of eventual success (Forlicz et al., 2023). The current empirical scientific literature does not provide conclusive answers regarding the precise predictors of gambling addiction in Kazakhstan, emphasizing the importance of conducting the present study. Moreover, existing research has not sufficiently addressed the potential role of modern technologies in the prevention and treatment of gambling addiction (Chóliz, 2023). The gold standard for treating gambling addiction is cognitive-behavioral therapy (CBT); however, modern technologies, such as mobile applications, have not yet received adequate scientific validation for their inclusion in interventions of this nature (Higueruela-Ahijado et al., 2023). It is anticipated that the use of such tools may enhance the effectiveness of programs, but this requires further investigation, particularly regarding the effectiveness of psychological interventions aimed at helping gamblers in an online format.

Problem Statement

This study is motivated by the desire to address the aforementioned gaps in the field of knowledge on gambling addiction, offering a comprehensive analysis of the socio-psychological predictors of gambling addiction while integrating technological trends into an online intervention program for the treatment of gambling addiction. The main objective of the study is to identify the social and psychological predictors of the development of gambling addiction and to explore the potential of using specialized online interventions with the integration of digital technologies to reduce its manifestations. The article also aims to determine whether the

use of self-control applications can contribute to the reduction of gambling addiction. The following tasks were set during the study:

1. To determine the distribution of problematic gambling symptoms across different social groups within an online survey using the Diagnostic Questionnaire for Pathological Gambling (DQPG) for diagnosing gambling addiction and to assess the significance levels of intergroup differences in indicators using ANOVA.
2. To conduct a regression analysis among respondents with gambling addiction to identify the influence of social factors (gender, age, marital status, education, income level, employment type, place of residence) and psychological characteristics (depression according to BDI, impulsivity according to BIS-11) on the severity of gambling addiction (as measured by DQPG).
3. To assess the effectiveness of a psychological intervention in an online format based on cognitive-behavioral therapy (CBT), supplemented by an application that blocks access to gambling sites with self-control features on the phone (Gamban) and an application that limits time spent on gambling websites on a personal computer (BetBlocker).

Methods and Materials

The study employed the Diagnostic Questionnaire for Pathological Gambling (DQPG) – a diagnostic tool based on the criteria from the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), designed to identify problematic and pathological gambling (Jiménez-Murcia et al., 2009; Stinchfield, 2003). The DQPG is administered in the form of a written questionnaire, taking approximately 15 minutes to complete, and includes 19 questions to which respondents answer "yes" or "no" while evaluating their behavior, emotions, and the consequences of gambling. A score of 5 or more positive responses indicates the presence of pathological gambling. The questionnaire covers key aspects of gambling, including impulsivity, risk tolerance, frequency of betting, loss of control, and financial and social consequences. It is used in clinical research, psychotherapeutic practice, and rehabilitation programs (Lucas et al., 2024). Additionally, the Barratt Impulsivity Scale (BIS-11) was used in the study – a psychological questionnaire designed to measure impulsivity as a stable personality trait (Meule, 2024; Spinella, 2007). It is administered in the form of a written questionnaire, taking approximately 15 minutes. It includes 30 statements to which respondents answer on a 4-point scale (from "never" to "almost always"), assessing their behavior. The BIS-11 consists of three subscales: cognitive impulsivity (decision-making without thought), motor impulsivity (acting without planning), and inability to self-control (lack of long-term planning). The final score ranges from 30 to 120, with a normal level of around 60 points, and scores above 75 may indicate a tendency toward impulsive behavior. This tool is frequently used in addiction studies (Ayali et al., 2024; Pawlak et al., 2024). Furthermore, the Beck Depression Inventory (BDI) was used to assess the severity of

depressive symptoms in the study (Beck & Steer, 1984). It consists of 21 questions, each evaluating different aspects of depression, such as mood, pessimism, fatigue, guilt, and suicidal thoughts. Responses are rated on a 4-point scale (from 0 to 3), and the total score ranges from 0 to 63. Based on the score, depression is classified as minimal (0-13), mild (14-19), moderate (20-28), or severe (29-63). The BDI is completed in written form within 10 minutes. It is used in clinical practice for depression screening, monitoring patient status, and evaluating treatment efficacy, including in addiction contexts (Gümüştakım et al., 2024; Rachubińska et al., 2021).

Since the tools used in the study had not been previously validated in the context of Kazakhstan, they underwent a translation and validation process. The survey was conducted in Kazakh and Russian, allowing participants to select either of the two language versions. The adaptation process followed generally accepted principles of cross-cultural instrument validation, including forward and backward translation, expert review, pilot testing, and cognitive assessment of item clarity and cultural appropriateness. The instruments employed in this study were used exclusively for scientific purposes; publicly available versions were utilized in compliance with established citation and referencing standards. Two independent translators began the standard adaptation procedure by performing a double translation from English to Kazakh and a back-translation, which was carried out by two other translators. Following this, a group of three practicing psychologists, with at least 10 years of experience, reviewed the terminological accuracy and cultural relevance of the statements from the three instruments. For preliminary testing of the adapted version, a pilot test was conducted on a sample of 100 respondents with diverse socio-demographic characteristics, which allowed for the identification and correction of issues in the wording to ensure that respondents could easily understand the content. Reliability was assessed through test-retest reliability with a two-week interval on a subsample of 50 respondents. The intraclass correlation coefficients (ICC) were 0.84 for DQPG, 0.83 for BIS-11, and 0.90 for BDI, indicating high measurement stability. To confirm the factor structure, an exploratory factor analysis (EFA) was performed using the Promax rotation method. The adequacy of the sample was confirmed using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett’s test of sphericity. Decisions regarding factor retention were based on eigenvalues exceeding 1.0, examination of the scree plot, and the degree of interpretability of the resulting factor structure. The DQPG was best described by a one-factor model, explaining 57% of the variance; BIS-11 was divided into three factors (cognitive impulsivity, motor impulsivity, and inability to self-control), explaining 60% of the variance; and the BDI revealed a two-factor structure (cognitive-affective and somatic symptoms), explaining 64% of the variance. The analysis did not reveal substantial differences in internal consistency coefficients between the Kazakh-language and Russian-language versions of the instruments.

Participants

To obtain a heterogeneous online sample from different social groups in Kazakhstan, a multi-stage combined method of respondent selection was applied. The sample consisted of 3,000 individuals aged 16 to 65, including both men and women. Minor participants (aged 16–17 years) provided their assent to participate, while their legal guardians additionally signed informed consent forms in accordance with established ethical standards. Online recruitment was carried out via Facebook, Instagram, and Telegram, and information was disseminated through social media groups and communities related to betting and financial risks by means of targeted advertisements and invitations to participate in the study. Participants were asked to provide informed consent and complete the survey using Google Forms, which included the Diagnostic Questionnaire for Pathological Gambling (DQPG) for diagnosing gambling addiction, the Barratt Impulsivity Scale (BIS-11), and the Beck Depression Inventory (BDI) for assessing these two psychological characteristics. The survey link was viewed by approximately 5,200 individuals, of whom 3,488 initiated questionnaire completion. However, because responses containing incomplete data, submissions originating from duplicate IP addresses, and questionnaires completed within suspiciously short time intervals were excluded from the final analysis, the final sample comprised 3,000 participants.

Participants were also asked to fill out a personal information sheet (e.g., gender, age, education level, etc.) in accordance with the social factors being studied. To increase data reliability and prevent multiple participation, the survey included a system for unique IP address identification. Due to the broad scope of recruitment and the large number of participants involved, the sample included participants from diverse social groups, including employed professionals, students, unemployed individuals, retirees, and others. They varied in terms of income level and education and resided both in large cities of Kazakhstan (Almaty, Karaganda, Uralsk, Shymkent, Taldykorgan) and in rural areas, ensuring maximum diversity of the data. Figure 1 presents the percentage distribution between participants who showed symptoms of problematic gambling and those who did not. The data shows that 523 individuals (17.4%) exhibited symptoms of problematic gambling (DQPG > 5), while 2,477 individuals (82.6%) did not.

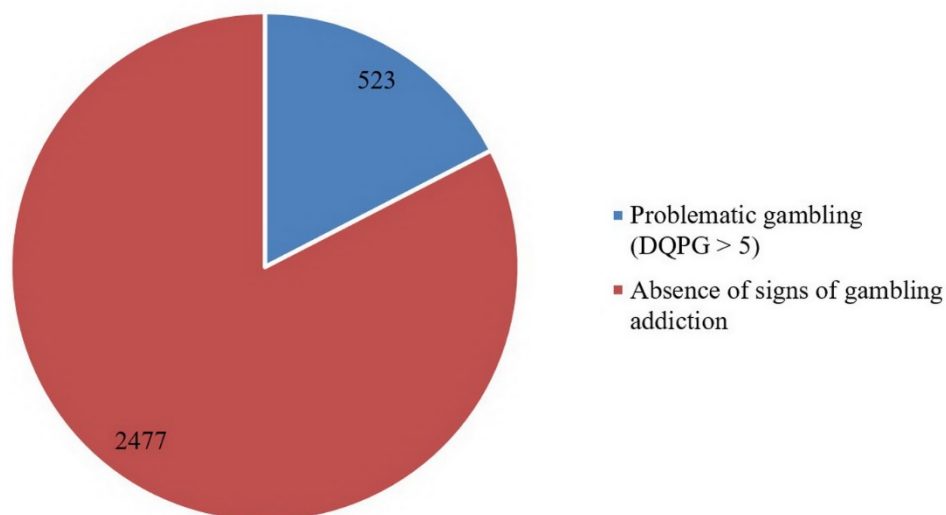


Figure 1. Percentage Distribution of Symptoms of Problematic Gambling (DQPG > 5) in the Total Sample (n=3000)

Source: Author's development

Of the total number of participants who took part in the online survey (3,000 individuals), respondents who scored more than five points on the DQPG (523 individuals – 381 men (72.8%) and 142 women (27.2%)) were invited to participate in the empirical phase of the study, which included a three-month online support program for individuals with gambling addiction. The program was based on cognitive-behavioral therapy (CBT) methods aimed at developing self-control, managing impulsive gambling behavior, and modifying dysfunctional beliefs. Additionally, the study utilized technological self-regulation tools, including the Gamban app, which blocks access to gambling websites on mobile devices, and BetBlocker, which limits the time spent on gambling websites on personal computers. These tools aimed to complement the therapeutic intervention by helping participants minimize access to triggers. As a result, 321 individuals agreed to participate in the intervention (234 men (72.9%) and 87 women (27.1%)), but only 218 participants (159 men (72.9%) and 59 women (27.1%)) completed the program, which corresponds to a 32.1% attrition rate. Of the 218 participants, 184 were engaged in online gambling, 17 were involved in sports betting, 10 preferred slot machines, and 7 played card games. Only data from participants who completed the intervention fully, with an attendance rate of at least 80%, and who participated in post-tests (DQPG, BIS-11, and BDI) were used for the analysis.

Study Design

The study began in September 2024, when an online survey of the total sample (n=3000) was conducted. The results identified 523 individuals (17.4%) exhibiting symptoms of gambling addiction. Their data were used to examine patterns of problematic gambling among various social groups and to assess the impact of social and psychological factors on the development of gambling behavior. Subsequently, participants with gambling addiction symptoms who agreed to take part in the empirical phase of the study installed the Gamban and BetBlocker applications on their digital devices and received a link to participate in the online intervention, which took place over three months from September to October 2024. After completing the intervention, participants had the option to attend online support meetings, held weekly, on a voluntary basis. Post-tests using the DQPG, BIS-11, and BDI were conducted in early March, which was three months after the intervention.

Intervention

Specialized applications for limiting access to gambling were installed on all digital devices of the intervention group. On mobile phones, Gamban, equipped with self-control features, was used to fully block gambling platforms, while on personal computers, BetBlocker was employed, which restricts the time spent on gambling websites. Although not all participants in the intervention group were online gamblers, the installation of blocking applications on their digital devices was necessary to prevent the possibility of compensating for traditional forms of gambling (such as casinos, slot machines, and sports betting) by transitioning to the online environment due to its accessibility.

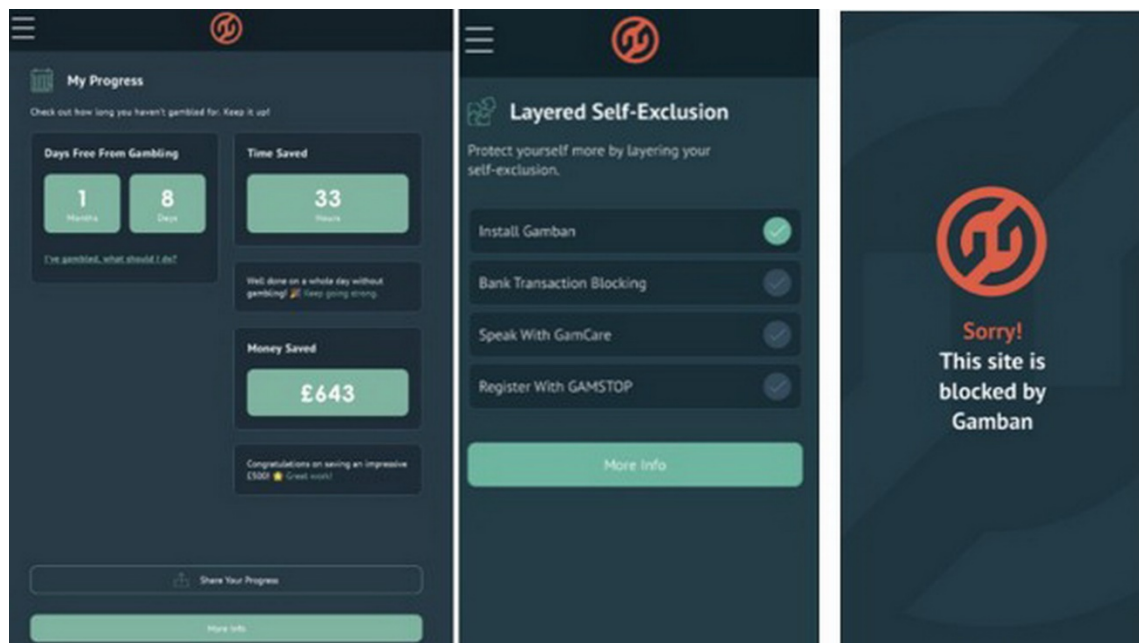


Figure 2. Example of the Gamban App Interface

Source: Gamban (2025) application interface, reproduced for illustrative purposes

Gamban (Figure 2) is an application that blocks thousands of gambling websites and apps worldwide, including gambling platforms, online casinos, sportsbooks, and gaming applications (Gamban, 2025). If a user discovers a site that is not blocked, they can submit the URL to customer support, and the resource will be added to the restricted list. The application cannot be uninstalled, preventing impulsive breaches of the restriction and enhancing self-control by creating a barrier to accessing gambling sites and forcing the user to refrain from habitual gambling behavior consciously. Gamban also provides users with a progress tracking system, displaying the number of days without gambling, the time saved from gambling, and the financial benefits, helping the user visually assess their achievements. In addition to Gamban, since this app is only for phones, BetBlocker (2025) was installed on participants' personal computers. It is designed to block gambling websites on the internet, providing users with the ability to limit their access to gambling, and is supported exclusively through charitable donations, making it independent and focused on helping individuals struggling with gambling addiction. One of its key features is the restriction calendar, which allows users to plan blocking periods in advance, especially during times of vulnerability. An example of the BetBlocker interface is shown in Figure 3.

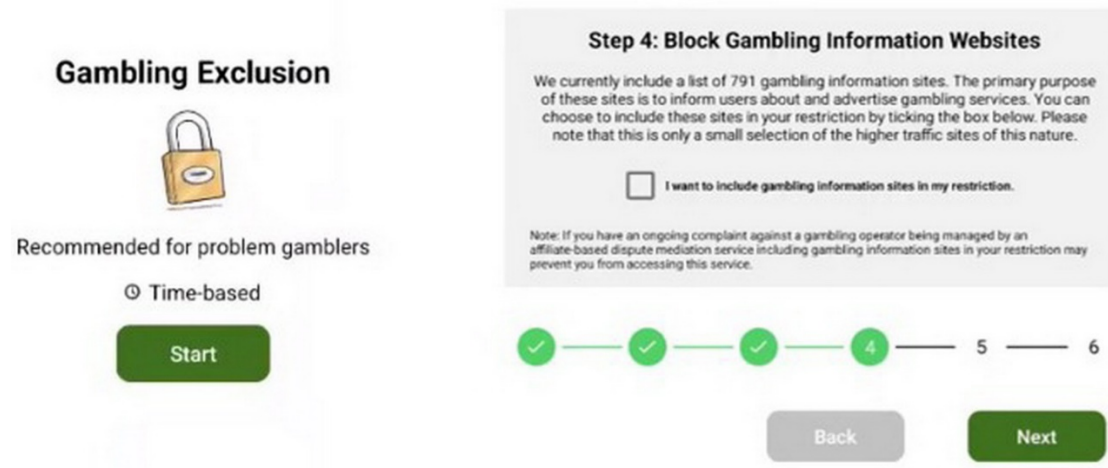


Figure 3. Example of the BetBlocker App Interface

Source: BetBlocker (2025) application interface, reproduced for illustrative purposes

The intervention itself was based on the principles of cognitive-behavioral therapy (CBT) and included key techniques aimed at problem awareness, the development of self-control skills, and addressing personal and social issues contributing to gambling. The intervention employed motivational interviewing and group support work, and participants were taught to recognize their problems and develop new strategies for overcoming addiction. Self-help was also considered - participants kept journals in which they recorded their thoughts, emotions, and triggers related to gambling, aiming to lead them to a deeper understanding of the problematic aspects of their behavior. Online counseling was conducted by eight psychotherapists with at least five years of experience working with individuals suffering from gambling addiction, following a standardized plan applicable to all participants. All sessions took place on the Zoom platform in small groups of up to 10 people, ensuring effective interaction. Sessions were held twice a week for three months, each lasting two hours, resulting in a total of 48 therapeutic meetings. Participants' attendance was recorded. After the intervention was completed, participants were offered the option to continue receiving support in open groups, available once a week, although their attendance was not monitored by the researchers and was based on their personal willingness. Post-testing was conducted in early March 2025, three months after the start, allowing for the evaluation of the intervention's effectiveness over time.

Limitations

In this study, participants were recruited through online platforms, including social media networks and communities associated with gambling and risky financial behavior, which may have introduced sampling bias by increasing the likelihood of attracting individuals already demonstrating interest or involvement in gambling activities. Consequently, the identified

rates of problematic gambling behavior should not be interpreted as nationally representative prevalence estimates for Kazakhstan, but rather as patterns characteristic of the targeted online sample examined in the present study. The tools used in the study, although they underwent multi-stage testing and validation, were applied for the first time in this context and are self-reported, which introduces some limitations. Additionally, the study focused on only a few social and psychological predictors that may influence the onset of gambling addiction, even though there are many others. Among the participants in the intervention group were individuals who did not engage in online gambling but used physical establishments (card games, sports betting, slot machines); however, Gamban and BetBlocker were also installed on their devices, and it is unclear whether this had an impact on the results, similar to those who practiced online gambling. This creates a foundation for further scientific inquiry. Future research could be directed at testing specialized interventions in offline meeting formats with the use of digital technologies.

Data Analysis

Data analysis was conducted using IBM SPSS 23 (Statistical Package for the Social Sciences). For the first task, descriptive statistics were calculated for the DQPG, BIS-11, and BDI scores among respondents with gambling addiction, and significance levels for intergroup differences were determined using ANOVA. For the second task, regression analysis was performed to identify the impact of the studied social factors and two psychological characteristics—depression and impulsivity—on the severity of gambling addiction as measured by DQPG. Categorical predictors were transformed using dummy coding prior to model estimation. A hierarchical multiple regression approach was employed in the analysis: socio-demographic variables were entered in the first block, while psychological variables were added in the second block to examine their incremental contribution. Model fit was evaluated using R^2 values, adjusted R^2 values, and the overall F-statistic. Multicollinearity diagnostics were additionally conducted using the variance inflation factor (VIF) and tolerance levels. The results indicated no evidence of multicollinearity problems among the included predictors. The ΔR^2 values reflected the proportion of additional explained variance associated with each new set of predictors introduced at the second stage of the model. For the third task, a comparison was made between pre-tests and post-tests for DQPG, BIS-11, and BDI among participants who completed the intervention, with significance levels for differences calculated using the Wilcoxon test. Additionally, Cohen's effect size was calculated.

Ethical Issues

The study was approved by the university's Ethics Committee, where the authors are employed, confirming its compliance with all required standards for this type of research. Participants were assured of

anonymity and confidentiality, and their identities were not disclosed throughout the study. For participants under the age of 18, additional safeguards were implemented, including mandatory parental or legal guardian consent. During the empirical phase, they only provided their name, and when data were processed, their responses were assigned a corresponding code number, making it impossible to identify the participants. In addition, prior to participation, respondents were informed about available psychological support services and were provided with contact information for qualified professionals prepared to offer assistance in cases of emotional distress or exacerbation of symptoms associated with problematic gambling behavior.

Results

The first objective of the study was to determine the distribution of problematic gambling symptoms across different social groups and to establish the significance levels of intergroup differences using ANOVA. The data are presented in Table 1.

Table 1. Descriptive Statistics for the Severity of Problematic and Pathological Gambling Symptoms According to DQPG, by Social Group (n=523)

Social Group	Mean Value	Standard Error of the Mean	Standard Deviation	Variance	ANOVA*
Gender					
Men	11.51	0.52	1.99	6.06	p < 0.01
Women	7.92	0.36	0.34	4.25	
Age					
Adolescents (16–18 years)	13.55	0.45	1.87	5.85	p < 0.01
Young Adults (19–35 years)	9.36	0.33	2.07	5.86	
Middle-Aged Adults (36–55 years)	10.44	0.58	0.12	3.05	
Older Adults (56+)	7.51	0.73	1.72	4.64	
Marital Status					
Single	9.51	0.45	0.55	3.26	0.748
Married	9.32	0.37	0.98	9.64	
Divorced	9.25	0.43	1.48	8.9	
Widowed	8.98	0.45	1.01	5.02	
Education					
Low (Incomplete Secondary Education)	13.61	0.75	0.7	5.41	p < 0.01
Medium (Secondary Specialized Education)	10.22	0.68	1.02	7.17	
High (Higher Education and above)	7.93	0.48	1.51	7.45	
Income Level					
Low (below the minimum wage)	12.84	0.68	1.18	7.59	p < 0.01
Medium	9.35	0.69	1.9	8.52	
High	6.76	0.56	0.66	9.22	
Employment Type					
Employed	8.07	0.83	2.02	4.41	0.147
Entrepreneurs	7.84	0.53	1.49	8.55	
Self-employed	8.19	0.75	2.28	8.79	
Unemployed	8.31	0.86	0.71	8.84	
Retired	8.61	0.64	0.3	8.44	
Students	8.72	0.84	0.98	2.91	
Place of Residence					
Residents of Megacities	10.14	0.88	1.22	7.64	0.239
Residents of Medium-Sized Cities	9.97	0.86	1.78	5.34	
Rural Population	10.01	0.54	1.37	3.62	

* significant at the level ≤ 0.001

Significant differences in the severity of problematic gambling symptoms were observed across social groups, such as gender, age, education level, and income level. Men had a significantly higher average DQPG score compared to women (11.51 vs. 7.92, $p < 0.01$), indicating their greater susceptibility. Among age groups, the highest score was observed in adolescents aged 16–18 years (13.55, $p < 0.01$) and middle-aged adults (36–55 years) (10.44, $p < 0.01$). Participants with low education levels (incomplete secondary education) had the highest DQPG score (13.61, $p < 0.01$), while those with higher education had the lowest score. A similar trend was observed in terms of income level, with respondents with low income showing a mean DQPG score of 12.84, while those with high income had a score of just 6.76 ($p < 0.01$), confirming a higher risk of gambling addiction among financially vulnerable groups. Differences in marital status, employment type, and place of residence were not statistically significant ($p > 0.01$).

The second objective of the study was to conduct a regression analysis to identify the influence of social factors (gender, age, marital status, education, income level, employment type, place of residence) and psychological characteristics (depression and impulsivity) on the severity of gambling addiction. The data are presented in Table 2.

Table 2. Regression Analysis to Determine the Impact of Social Factors and Psychological Characteristics (Depression and Impulsivity) on the Severity of Gambling Addiction (n=523)

Predictors	DQPG Level		
	ΔR^2	β (coefficients)	p-value
Gender	0.035	0.214	< 0.01
Age	0.048	-0.266	< 0.01
Marital Status	0.012	0.064	0.392
Education	0.061	-0.306	< 0.01
Income Level	0.042	-0.236	< 0.01
Employment Type	0.015	0.054	0.234
Place of Residence	0.011	0.044	0.312
Depression (according to BDI)	0.077	0.344	< 0.01
Impulsivity (according to BIS-11)	0.094	0.414	< 0.01

* significant at the level ≤ 0.001

Source: author's development

The results of the regression analysis showed that gender, age, education level, income level, depression, and impulsivity are significant predictors of the severity of gambling addiction ($p < 0.01$). The strongest influence on the DQPG score was exerted by impulsivity ($\beta = 0.414$, $\Delta R^2 = 0.094$), which confirms its role in the development of problematic gambling. Depression severity, as measured by the BDI, also made a significant contribution ($\beta = 0.344$, $\Delta R^2 = 0.077$), revealing a connection between emotional state and susceptibility to gambling. A lower level of

education ($\beta = -0.306$, $\Delta R^2 = 0.061$) and low income ($\beta = -0.236$, $\Delta R^2 = 0.042$) also indicated an increased level of problematic gambling, emphasizing the vulnerability of socioeconomically unstable groups. Marital status, employment type, and place of residence were not significant predictors.

The third objective of the study was to evaluate the effectiveness of the psychological intervention conducted online. To achieve this, the pre-tests and post-tests for DQPG, BIS-11, and BDI were compared among men and women who completed the intervention, with significance levels of differences calculated using the Wilcoxon test. The data are presented in Table 3.

Table 3. Comparison of Pre-tests and Post-tests for DQPG, BIS-11, and BDI among Men and Women Who Completed the Intervention, with Significance Level Calculation (Wilcoxon Test)

Group		DQPG pre-test	DQPG post-test	BIS-11 pre-test	BIS-11 post-test	BDI pre-test	BDI post-test
Men	Mean	14.27	9.79	89.32	74.73	21.75	17.55
	Standard Deviation	4.365	2.631	6.888	5.678	4.477	3.246
	p-value (Wilcoxon)	< 0.01		< 0.01		< 0.01	
Women	Mean	11.69	7.31	72.44	63.64	18.80	15.32
	Standard Deviation	2.269	1.694	4.829	6.022	3.352	2.224
	p-value (Wilcoxon)	< 0.01		< 0.01		< 0.01	

* significant at the level ≤ 0.001

Source: author's development

The results showed a statistically significant decrease in the indicators of problematic gambling (DQPG), impulsivity (BIS-11), and depression (BDI) ($p < 0.01$ for all values). Among men, the level of problematic gambling decreased by 4.48 points, impulsivity by 14.59 points, and the severity of depressive symptoms by 4.2 points. Among women, these indicators decreased by 4.38 points, 8.8 points, and 3.48 points, respectively. Additionally, Cohen's effect size was calculated to reflect the effectiveness of the intervention. For men, the reduction in problematic gambling (DQPG) showed a medium effect ($d = 1.24$), the reduction in impulsivity showed a very large effect ($d = 2.31$), and the reduction in depressive symptoms showed a medium effect ($d = 1.07$). For women, the reduction in problematic gambling was very significant ($d = 2.19$), the reduction in impulsivity showed a large effect ($d = 1.61$), and the reduction in depression was medium ($d = 1.22$).

Discussion

The results of the study confirm the connection between problematic gambling and the examined psychological factors, as well as some social factors, which is consistent with the findings of previous studies. In the current study, gender, age, education level, income level, depression, and

impulsivity were found to significantly influence the level of problematic gambling, which aligns with data from one study that revealed men demonstrate a higher risk of gambling addiction and age after 35 increases the likelihood of problematic gambling (Lelonek-Kuleta et al., 2025). The authors established that risk factors for destructive gambling also included an increased ability to cope with difficulties and social motivation, while financial motivation was inversely correlated with risk. Another article also found that men, young individuals, and those with lower education levels have a higher risk of gambling addiction, highlighting gender differences in susceptibility to problematic gambling (Rodríguez et al., 2025). Additionally, the connection between depression and gambling addiction identified in the current study supports data mentioning mood disorders as key risk factors for suicidal behavior among individuals dependent on gambling (Reynolds et al., 2025). Furthermore, the relationship between psychological states and problematic gambling is reflected in a study that found pathological dissociation fully mediates the impact of childhood trauma on the severity of problematic gambling (Imperatori et al., 2017). Although childhood trauma was not considered a predictor in the current context, the significant influence of depression and impulsivity ($p < 0.01$) suggests that psychological factors play an important role in the development and severity of gambling disorder.

The data from the current study align with findings regarding the regulation and social context of gambling, where the influence of national policies on the rates and severity of gambling addiction is emphasized (Spångberg & Svensson, 2020). In this study, where education level and income were identified as key predictors of gambling addiction, the importance of socio-economic status is also evident, pointing to the need for further investigation into how macroeconomic factors may influence the intensity of problematic gambling. Furthermore, depression and impulsivity were found to be significant psychological predictors of gambling addiction in the current study, which is also reflected in one of the works (Dowling et al., 2025). Their study revealed that depressive symptoms, anxiety, and substance use (alcohol and drugs) are more commonly found among individuals affected by gambling, indicating the potential psychological consequences of gambling both for the players themselves and their immediate environment. In the current study, depression ($\beta = 0.344$, $p < 0.01$) and impulsivity ($\beta = 0.414$, $p < 0.01$) were the most significant individual predictors of problematic gambling, confirming the idea that psycho-emotional states play a crucial role in the formation of addiction. Additionally, interventions aimed at reducing problematic gambling have been shown to be effective, as noted in one study, where it was found that videos designed to enhance resistance to gambling advertisements led to a significant reduction in engagement with gambling promotional offers, with 21% of participants refusing to use gambling-related advertisements after the intervention (Torrance et al., 2025).

One article emphasizes the high rates of gambling among adolescents, particularly among those who exhibit distorted cognitive beliefs about gambling (Favieri et al., 2025). This aligns with the current findings and underscores the need for early preventive programs aimed at forming accurate perceptions of the risks associated with gambling. Moreover, the high level of problematic gambling among adolescents is consistent with other data indicating a connection between impulsivity and involvement in risky gambling practices, such as purchasing loot boxes (Villalba-García et al., 2025). The connection between stress and gambling involvement in the current study agrees with the findings that stress contributes to increased spending on gambling and exacerbates gambling-related problems (Savolainen et al., 2024). Since, in the present study, the level of depression in participants significantly decreased after undergoing psychological intervention, which correlated with a reduction in problematic gambling, this confirms the appropriateness of incorporating psychotherapeutic methods into programs designed to help individuals with gambling addiction. The effectiveness of cognitive-behavioral therapy (CBT) in reducing symptoms of gambling addiction, impulsivity, and depression aligns with findings indicating significant improvements in quality of life, as well as reductions in depression, anxiety, and the amount of money lost, following CBT interventions (Higuera-Ahijado et al., 2023). This article suggested that future research should examine whether online sessions are as effective as offline ones and whether the effects are sustained over time, which the current study addresses. Furthermore, in one article, the authors found no significant differences between therapeutic support and the independent use of a chatbot within the framework of CBT (So et al., 2024). This may suggest that minimal specialist support is not always critical for the effectiveness of the intervention. Additionally, the data on impulsivity among men aligns with findings from one study, which found that young men aged 18–24 are most at risk for gambling addiction, particularly in forms of gambling such as sports betting and slots (Nedeljković et al., 2024). The authors also point out that participation in gambling is often associated with substance use, emphasizing the importance of a comprehensive approach to treating behavioral addictions, which complements the current results.

The findings of the present study provide a basis for the development of several preliminary practical recommendations. They highlight the importance of targeted preventive measures, particularly for socially vulnerable groups such as adolescents, men, and individuals with lower levels of income and education. The results also indicate the potential effectiveness of integrating psychoeducational approaches, cognitive-behavioral therapy-based support, and digital tools designed to restrict access to gambling opportunities into online prevention programs. At the same time, conclusions regarding the clinical effectiveness of these measures should be interpreted with caution due to the absence of a control group and the specific characteristics of the participant recruitment

procedure. Additional randomized controlled trials are required to confirm long-term effectiveness, clarify causal relationships, and evaluate the broader applicability of the proposed intervention model.

Conclusions

The observed rates of problematic gambling is significantly higher among men, adolescents, and individuals with lower levels of education and income, which confirms the social and economic vulnerability of these groups. The most pronounced gambling addiction was observed in adolescents aged 16–18 and middle-aged adults (36–55 years), indicating the importance of preventive measures in these age categories. Lower levels of education and income were also associated with a higher propensity for gambling. Additionally, regression analysis showed that impulsivity ($\beta = 0.414$) and depression ($\beta = 0.344$) are psychological predictors of gambling addiction. The online intervention, based on cognitive-behavioral therapy supplemented by the Gamban and BetBlocker apps, demonstrated high effectiveness, as confirmed by Cohen's effect size calculations.

From a practical perspective, this study provides valuable information about at-risk groups for gambling addiction, which can be used to develop targeted prevention programs, particularly among adolescents and socioeconomically vulnerable populations. The scientific significance of the work lies in the empirical confirmation of the role of impulsivity and depression as psychological factors in problematic gambling in Kazakhstan, enriching the field of knowledge and enabling further exploration of variables that may serve as psychological predictors. The results can be applied to adapt cognitive-behavioral therapy in an online format, including through the integration of blocking applications such as Gamban and BetBlocker into rehabilitation programs.

For vulnerable groups, social policy practitioners should implement courses to improve financial literacy and educate adolescents about the risks of gambling. The prospects for further research include an in-depth analysis of the influence of social factors, such as family environment and financial literacy, on the development of gambling addiction, as well as the study of the long-term effectiveness of online interventions using digital technologies. Future studies may also focus on the development of personalized prevention and therapy programs that consider the individual psychological characteristics and addiction levels of gamblers.

STATEMENT OF COMPETING INTERESTS

None declared.

ETHICS APPROVAL

The Abai Kazakh National Pedagogical University Ethics Review Committee for Human Research approved the project, “Social Trends, Psychological Predictors, and Prevention of Gambling in Kazakhstan,” on May 20, 2024 (approval # 8989).

RELATIVE CONTRIBUTIONS

All authors conceived of the study. ZA conducted the analyses and wrote the first draft of the paper. NZ and OT revised the first draft. All authors approved of the final version.

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RESEARCH PROMOTION

The primary objective of this study is to identify the social and psychological predictors associated with problematic gambling and to explore the potential of using a specialized online intervention based on cognitive-behavioral therapy (CBT) integrated with Gamban and BetBlocker applications. The study included an online survey of 3,000 individuals from Kazakhstan, of which 523 respondents (17.4%) exhibited signs of pathological gambling, and 218 participants (159 men and 59 women) participated in a three-month intervention. The tools employed were the Diagnostic Questionnaire for Pathological Gambling (DQPG), the Barratt Impulsivity Scale (BIS-11), and the Beck Depression Inventory (BDI). The results indicated that the observed rates of problematic gambling symptoms in the surveyed online sample were significantly higher among men, adolescents, and individuals with lower levels of education and income, highlighting the social and economic vulnerability of these groups. The highest levels of problematic gambling symptoms were observed among adolescents aged 16–18 and middle-aged adults (36–55 years), emphasizing the importance of preventive measures for these age categories. Participation in the online intervention based on cognitive-behavioral therapy (CBT), supplemented by the use of the Gamban and BetBlocker applications, was associated with reductions in symptoms related to problematic gambling behavior, impulsivity, and depression. The results may be of practical value for the development of targeted preventive programs and for further research on digital approaches to gambling-related interventions.

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