



Gambling Disorder in Türkiye: A Systematic Review and Meta-Analysis Study

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Abstract

Purpose of Review Gambling disorder is recognized as a behavioral addiction characterized by persistent and recurrent problematic gambling behavior that leads to clinically significant impairment or distress. Despite growing international research, comprehensive evidence on gambling disorder in Türkiye remains limited. This study aims to systematically review existing research on gambling disorder in Türkiye and provide a pooled prevalence estimate based on available studies.

Recent Findings A systematic search was conducted in March 2025 across Web of Science, PubMed, and Scopus databases using MeSH-based keywords. A total of 182 records were identified, and 35 studies met the inclusion criteria for systematic review. Among these, 14 studies reported prevalence data and were included in the meta-analysis. Due to high heterogeneity ($I^2 = 97.7\%$), a random-effects model was applied. The pooled prevalence of gambling disorder across included studies was estimated at 4.0% (95% CI: 2.0%–8.0%). However, this estimate is derived from heterogeneous, predominantly non-representative samples (e.g., students and clinical populations) and should not be interpreted as a nationally representative prevalence estimate. While several studies proposed prevention and intervention strategies, none of these approaches have been formally evaluated within the Turkish context.

Summary The findings suggest that gambling disorder represents an emerging public health concern in Türkiye. Targeted prevention strategies focusing on high-risk groups, particularly young individuals and males, are needed. Public awareness campaigns, screening strategies, and improved access to counseling and treatment services may contribute to reducing gambling-related harm.

Keywords Gambling disorder · Addiction · Systematic review · Meta-analysis · Türkiye

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Introduction

According to the International Classification of Diseases, 11th Revision (ICD-11), published by the World Health Organization (WHO), non-substance addictions are classified under “disorders associated with addictive behaviors.” Within this category, only gaming and gambling disorders are currently recognized as behavioral addictions [1]. Gambling disorder is characterized by impaired control over gambling behavior and is associated with substantial economic, psychological, and social consequences for individuals, families, and society [2]. It is therefore increasingly recognized as a global public health issue. Global gambling losses rose from approximately \$250 billion in 2003 to \$450 billion in 2013, yet research on gambling-related problems remains insufficient in many countries [3].

Most forms of gambling are prohibited in Türkiye by legal regulations [4]. However, some betting and games of chance are permitted through state-authorized institutions, including the National Lottery, lottery-type games and sports-related betting games. The increase in internet use has also expanded access to betting activities, particularly in virtual environments and across different age groups. In Türkiye, lottery games are generally not perceived as negatively as other forms of gambling.

In addition to land-based gambling restrictions, the regulatory environment surrounding online gambling in Türkiye presents significant challenges. Although unauthorized online gambling platforms are illegal, enforcement remains complex due to the transnational nature of digital services and the widespread use of virtual private networks and offshore betting websites. Regulatory authorities have implemented measures such as website blocking, restrictions on financial transactions, and legal sanctions against illegal operators. However, the rapid expansion of digital technologies, mobile applications, and cryptocurrency-based transactions has facilitated continued access to online gambling platforms, particularly among younger populations. This evolving digital landscape complicates regulatory oversight and increases the risk of unmonitored and potentially harmful gambling behaviors [5–7].

Türkiye’s predominantly Muslim population also plays an important role in shaping public attitudes toward gambling. In Islamic doctrine, gambling is explicitly prohibited (haram), which contributes to a generally negative moral and social perception of gambling behaviors. This cultural and religious context may act as a protective factor by discouraging participation in gambling activities and reinforcing social stigma. However, this normative disapproval may also lead to the underreporting of gambling behaviors and related problems, thereby limiting the visibility of the issue in both research and policy contexts. Furthermore, the coexistence

of religious norms with increasing exposure to globalized digital gambling environments creates a complex socio-cultural dynamic, in which traditional values and modern behavioral patterns may conflict. Previous research suggests that such contexts can influence both participation patterns and help-seeking behaviors related to gambling [8, 9].

Although gambling disorder has emerged as a growing public health concern worldwide, nationally representative evidence on gambling disorder in Türkiye remains limited. A previous systematic review of gambling addiction in Türkiye summarized national research in this field and emphasized important gaps in the available evidence, including the limited number of intervention-oriented and longitudinal studies [10]. However, that review did not provide a pooled prevalence estimate and did not integrate prevalence estimates, correlates, and intervention-related findings within a meta-analytic framework. Therefore, the present study aims to systematically review empirical research on gambling disorder in Türkiye, provide a pooled prevalence estimate based on available studies, and synthesize evidence on correlates and intervention-related findings. Beyond mapping the available national evidence, this study may also provide useful context for future cross-country research on gambling and behavioral addictions by considering Türkiye’s cultural norms, regulatory framework, and rapidly changing digital gambling environment.

Methods

Search Strategy

This study aimed to review empirical research on gambling disorder in Türkiye and summarize the literature. Accordingly, a systematic search was conducted in March 2025 across the Web of Science (WoS), PubMed, and Scopus databases using English and Turkish keywords based on MeSH (Medical Subject Headings) terms, combined with Boolean operators. Studies published through 2024 were considered, with no lower-year limit imposed. The search strategy was developed in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The study protocol was registered with PROSPERO before the initiation of the literature search (registration number: CRD420261424620). No deviations from the registered protocol were made. Details regarding the keywords used for the searches and the predefined inclusion and exclusion criteria are presented in Fig. 1. The PRISMA flow diagram in Fig. 2 reports the number of records identified, screened at the title/abstract level, assessed at the full-text level, excluded with reasons, included in the systematic review, and included in the meta-analysis.

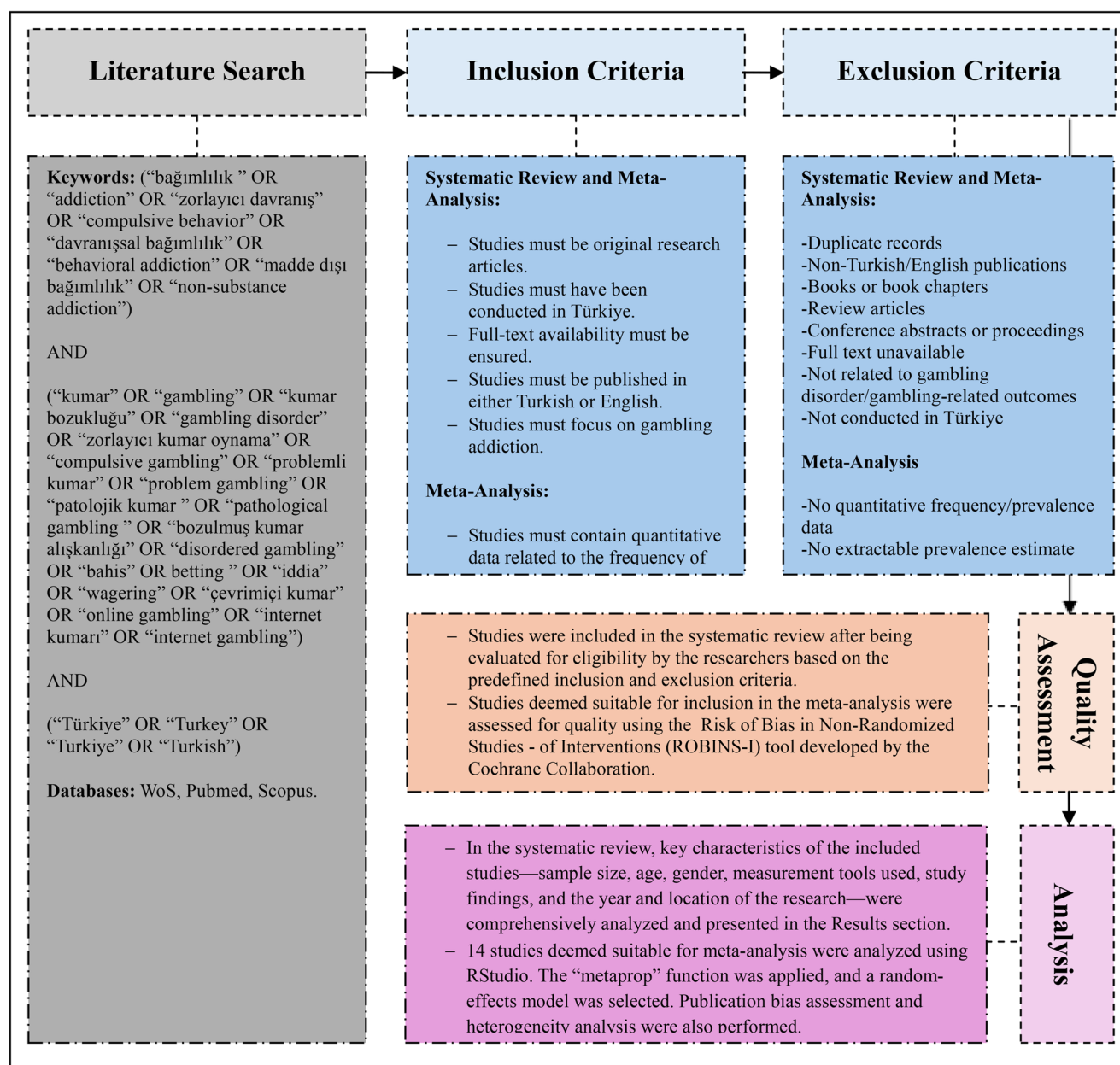


Fig. 1 Workflow, search strategy, and predefined inclusion and exclusion criteria

Study Selection and Data Extraction

After removal of duplicates and records that were ineligible at the initial screening stage, titles and abstracts of the remaining records were independently screened by at least three reviewers. Studies deemed potentially eligible were retrieved in full text and assessed independently by the same reviewers against the predefined inclusion and exclusion criteria. In cases of disagreement, reviewers were asked to re-evaluate the studies and reach consensus; when consensus could not be achieved, decisions were made based on majority vote. Data extraction was performed

using a standardized form that included information on study characteristics, sample size, population type, study design, measurement tools, measurement timeframe, cut-off scores, prevalence estimates, and key findings. Studies were categorized according to their contribution to the synthesis using three predefined classification levels: prevalence estimates, correlates of gambling disorder, and intervention-related findings.

A total of 182 studies related to gambling problems in Türkiye were identified through searches conducted using the specified keywords. Of these studies, 81 were retrieved from the WoS, 68 from Scopus, and 33 from PubMed. The

retrieved studies were assessed for eligibility based on pre-defined inclusion criteria. Studies were included if they reported empirical findings on gambling disorder or gambling-related outcomes using validated measurement tools or established diagnostic criteria (e.g., DSM-IV, DSM-5, ICD-11). Validity and reliability-assured scales, gambling disorder measurement questionnaires, quantitative studies based on DSM-IV or DSM-5 criteria, and ICD-11 codes, as well as qualitative studies, were also included in this systematic review. For the meta-analysis, only studies that provided data on the frequency of gambling disorders were included.

PRISMA Flow

After database searching, 182 records were identified. Following the initial screening stage, 74 records were excluded, including duplicate records ($n=60$), studies published in languages other than Turkish or English ($n=2$), book or book chapters ($n=4$), review articles ($n=5$), and conference abstracts or proceedings ($n=3$). The titles and abstracts of 108 records were screened. Potentially eligible studies were then assessed at the full-text level. After full-text screening, 73 records were excluded because the full text was not available ($n=5$), the study was not related to gambling addiction ($n=44$), or the study was not conducted in Türkiye ($n=24$). Finally, 35 studies were included in the systematic review. Among these, 14 studies reported data on the frequency of gambling disorder and were included in the meta-analysis, while 21 studies contributed only to the narrative synthesis. The PRISMA flow diagram in Fig. 2 reports the number of records identified, screened at the title/abstract level, assessed at the full-text level, excluded with reasons, included in the systematic review, and included in the meta-analysis.

Statistical Analysis

The studies included in this systematic review were assessed according to the inclusion and exclusion criteria outlined in Fig. 1 and systematically classified. The classification considered individual and demographic variables such as sample size, age group, and gender, as well as the measurement instruments, and the key findings reported. Reported correlates, commonly described motivations, and intervention-related recommendations concerning gambling disorder in Türkiye were examined. Among the included studies, 14 provided statistical data on gambling disorders. For these studies, the measurement instrument, reported measurement timeframe, cut-off score or case definition, and prevalence estimate were extracted and summarized in Table 2. These studies were subjected to meta-analysis using the “meta”

and “metafor” packages in RStudio. To estimate the frequency of gambling disorder in Türkiye, the “metaprop” function was employed. To determine the appropriate meta-analytic model (fixed-effect or random-effects), a test for homogeneity was conducted using the I^2 statistic. Based on the test results, substantial heterogeneity was detected ($I^2 = 97.7\%$), prompting the use of a random-effects model for the analysis. Given the limited number of studies on gambling problems in Türkiye and the heterogeneity of samples, the aim was to provide an overall pooled estimate based on available data, while recognizing that such diversity may contribute to variability in the results.

Risk of Bias Assessment

The methodological quality of the studies included in the meta-analysis was assessed using the ROBINS-I tool developed by the Cochrane Collaboration. The results of this assessment are presented in the Supplementary Materials (Supplementary Figs. 1 and 2). Risk-of-bias assessment was conducted only for studies included in the meta-analysis, as these studies directly contributed to the pooled quantitative estimates. Studies included solely in the narrative synthesis were not formally assessed using ROBINS-I due to heterogeneity in study designs and outcomes, which limited the applicability of a standardized risk-of-bias tool. However, methodological differences among these studies were considered in the synthesis and interpretation of the data.

Publication Bias

Potential publication bias was evaluated using funnel plots and Kendall's Tau test. Given the limited number of included studies and the observed heterogeneity, these findings should be interpreted with caution.

Results

Study Selection and Characteristics

A total of 182 studies on gambling disorder in Türkiye were identified through a systematic search; however, only 35 were deemed eligible for inclusion in the systematic review (Fig. 2). Among these, 14 studies also reported the frequency of gambling disorder and were thus included in the meta-analysis. This estimate should be interpreted with caution because it includes diverse populations (e.g., students, clinical groups), which may partially account for the observed heterogeneity. The included studies were highly heterogeneous in sample characteristics and study designs. Among the 14 studies included in the meta-analysis, samples

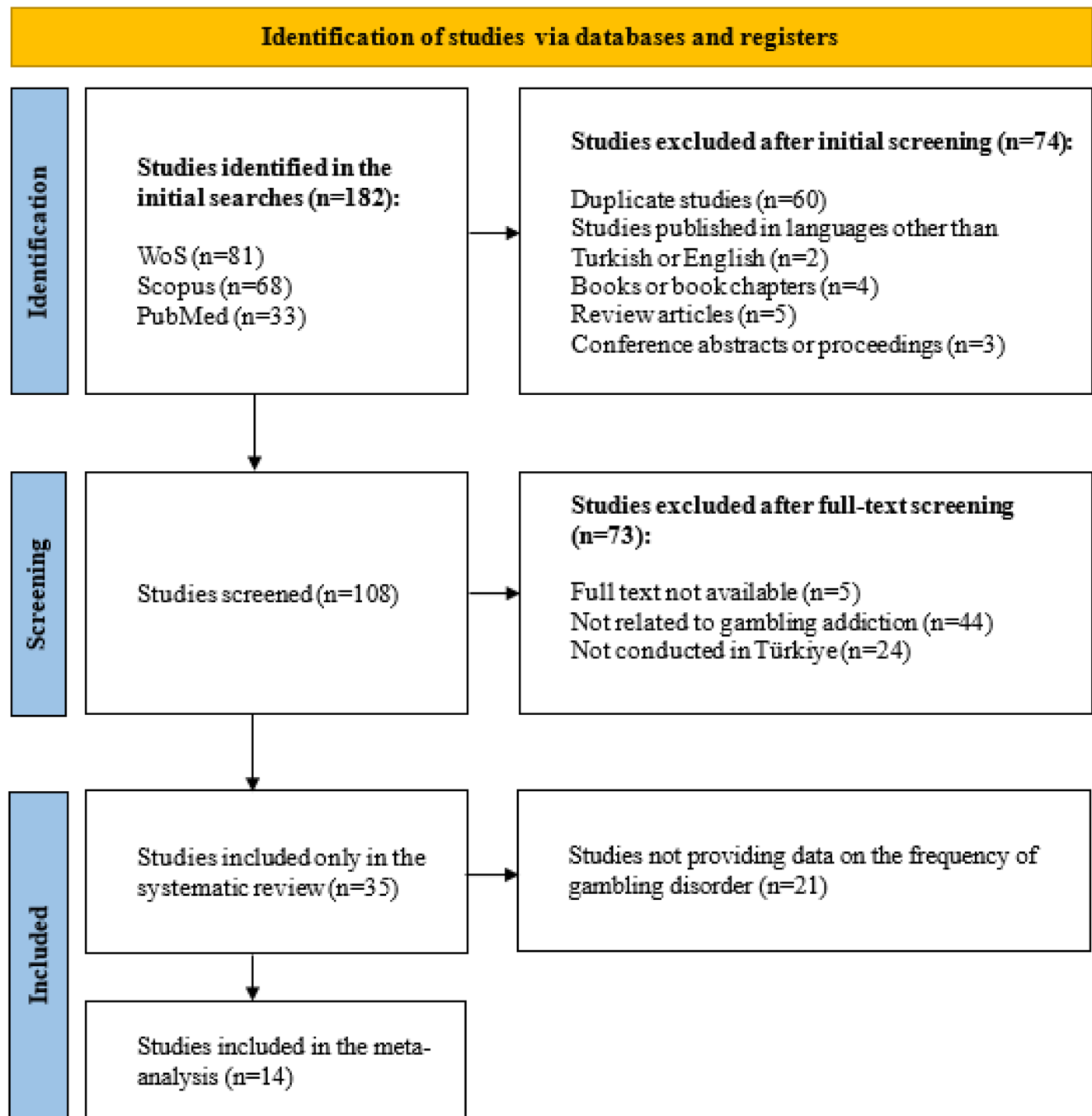


Fig. 2 PRISMA flow diagram showing record identification, title/abstract screening, full-text assessment, exclusion reasons, and studies included in the systematic review and meta-analysis

comprised university students ($n=6$), clinical or patient populations (e.g., Parkinson's disease, prolactinoma; $n=2$), cryptocurrency investors ($n=2$), vocational school students ($n=1$), and other specific gambling populations ($n=3$). This diversity limits the generalizability of the pooled estimate to the general population.

The studies reviewed in this research are summarized in Table 1. The earliest study on gambling in Türkiye was

published in 2000 [11], followed by a validation study in 2015 [12]. Research activity increased markedly after 2019, with recent examples including studies among university students [13, 14]. Ten studies targeted university students, while smaller numbers examined vocational school [15] and high school populations [16]. Fourteen studies directly assessed clinical or treatment-seeking individuals [17–19], while others explored specific subgroups such as

Table 1 Studies included in the systematic review and/or meta-analysis

Authors, Year	Sample	<i>n</i>	Study design	Gambling (%)	Classification
(Duvarci and Varan, 2000) [11]	Male pathological gamblers (<i>n</i> =31) and regular male gamblers as controls (<i>n</i> =42)	73	Descriptive and Cross-sectional	-	Correlates of gambling disorder
(Kenangil et al., 2010) [25]	Patients with Parkinson's disease	554	Descriptive and Cross-sectional	-	Correlates of gambling disorder
(Arcan and Karanci, 2015)* [12]	Male gamblers	354	Validity and Reliability Study	11.6	Prevalence estimates; Correlates of gambling disorder
(Elmas et al., 2017)* [26]	Male gamblers	246	Relational and Cross-sectional	34.6	Prevalence estimates; Correlates of gambling disorder
(Kuru et al., 2017) [27]	Individuals with gambling addiction	1	Case Study	-	Intervention-related findings
(Altıntaş, 2018) [18]	30 male patients and 30 male controls	60	Case-Control Study	-	Correlates of gambling disorder
(Kircaburun and Griffiths, 2018) [28]	University students	772	Relational and Cross-sectional	-	Correlates of gambling disorder
(Arıcak, 2019) [29]	Adolescents	6,116	Relational and Cross-sectional	-	Correlates of gambling disorder
(Dogansen et al., 2019)* [23]	Patients with prolactinoma	308	Descriptive and Cross-sectional	2.9	Prevalence estimates; Correlates of gambling disorder
(Erdoğan, 2019) [30]	Adults with gambling disorders	3	Phenomenological Study	-	Correlates of gambling disorder
(Soyata et al., 2019) [31]	Individuals with gambling addiction	20	Clinical Study	-	Intervention-related findings
(Vayısoğlu et al., 2019)* [32]	University students	339	Relational and Cross-sectional	1.2	Prevalence estimates; Correlates of gambling disorder
(Dinc et al., 2020) [16]	High school students	716	Relational and Cross-sectional	-	Correlates of gambling disorder
(Tekin et al., 2020) [33]	Patients with gambling complaints	128	Validity and Reliability Study	-	-
(Akpınar-Aslan et al., 2021)* [17]	University students	612	Descriptive and Cross-sectional	2.0	Prevalence estimates; Correlates of gambling disorder; Intervention-related findings
(Aslan et al., 2021) [34]	Young Adults	232	Relational and Cross-sectional	-	Correlates of gambling disorder
(Karaibrahimoğlu et al., 2021) [35]	University students	650	Descriptive and Cross-sectional	-	-
(Oruç et al., 2021) [36]	Individuals with gambling disorder	34	Retrospective Data Analysis	-	Correlates of gambling disorder
(Sonkurt and Altınöz, 2021)* [20]	Cryptocurrency investors	300	Relational and Cross-sectional	2.0	Prevalence estimates; Correlates of gambling disorder
(Celik et al., 2022)* [37]	University students	650	Relational and Cross-sectional	1.2	Prevalence estimates; Correlates of gambling disorder; Intervention-related findings
(Gökce-Yüce et al., 2022) [38]	Gamblers	643	Relational and Cross-sectional	-	Correlates of gambling disorder
(Kaya and Deveci, 2022) [39]	53 gambling disorders and 57 controls	110	Case-Control Study	-	Correlates of gambling disorder
(Ünal et al., 2022)* [15]	Vocational school students	315	Methodological Study	2.2	Prevalence estimates; Correlates of gambling disorder
(Bodur et al., 2023) [22]	Patients (<i>n</i> =60) and Controls (<i>n</i> =60)	120	Descriptive and Cross-sectional	-	Correlates of gambling disorder
(Çıtak, 2023)* [19]	Gamblers	317	Latent Profile Analysis	24.6	Prevalence estimates; Correlates of gambling disorder; Intervention-related findings
(Gunduz et al., 2024)* [24]	Patients with Parkinson's disease	1,824	Descriptive and Cross-sectional	0.7	Prevalence estimates; Correlates of gambling disorder
(Güney et al., 2023) [40]	Husbands of married women	5,553	Relational and Cross-sectional	-	Correlates of gambling disorder

Table 1 (continued)

Authors, Year	Sample	<i>n</i>	Study design	Gambling (%)	Classification
(Koç et al., 2023)* [41]	University students	232	Relational and Cross-sectional	14.2	Prevalence estimates; Correlates of gambling disorder
(Yığman et al., 2023)* [21]	Cryptocurrency investors	654	Relational and Cross-sectional	15.7	Prevalence estimates; Correlates of gambling disorder
(Altıntaş et al., 2024) [8]	Individuals aged 15 and above	5,008	Cross-sectional Study	-	Correlates of gambling disorder; Intervention-related findings
(Başoğlu et al., 2024) [13]	University students	1,051	Relational and Cross-sectional	-	Correlates of gambling disorder
(Duran et al., 2024)* [42]	University students	229	Descriptive and Cross-sectional	4.8	Prevalence estimates; Correlates of gambling disorder; Intervention-related findings
(Karafil, 2024) [43]	University students	29	Methodological Study	-	Correlates of gambling disorder
(Rezoug et al., 2024) [44]	100 patients and 100 healthy volunteers	200	Case-Control Study	-	Correlates of gambling disorder
(Şen and Pirincci, 2024)* [14]	University students	1,724	Descriptive and Cross-sectional	1.0	Prevalence estimates; Correlates of gambling disorder; Intervention-related findings

* Studies included in the meta-analysis

cryptocurrency investors [20, 21] or patients with conditions like Parkinson's disease and opioid dependence [22–24].

Prevalence Estimates

Among the studies summarized in Tables 1, 14 reported statistics on the frequency of gambling disorder and were included in the meta-analysis. The measurement instruments, measurement timeframes, cut-off scores, and prevalence estimates used in these studies are presented in Table 2. Most studies used the South Oaks Gambling Screen (SOGS) or its revised version, although some studies relied on other instruments or diagnostic/clinical criteria, including QUIP, DSM-5/OGD-Q, ICD-based clinical diagnosis, or latent profile analysis. This variation in measurement approaches should be considered when interpreting the pooled estimate.

The frequency of gambling disorder varied across different sample groups. For instance, in a study conducted by Duran et al. [42] among university students ($n = 229$), the risk of gambling disorder was reported as 4.8%. Other studies have identified either notably lower [14, 17, 32, 37] or considerably higher frequency within similar populations [41]. In contrast, among individuals who had engaged in gambling at least once in their lifetime, the risk of gambling disorder was found to be relatively higher [19, 26]. Based on the meta-analysis conducted in this study (Fig. 3), the pooled frequency of gambling disorder among individuals aged 14 years and older in Türkiye was estimated at 4.0% (95% CI: 2.0%–8.0%). This estimate should be interpreted with caution due to substantial heterogeneity across studies. Notably, prevalence estimates varied markedly across studies, with lower rates observed in student and broader

population samples and higher rates reported in selected or high-risk groups, reaching up to 24.6%. These differences may partly reflect variation in measurement tools and cut-off thresholds (e.g., DSM-based criteria versus screening instruments such as SOGS), which limit direct comparability across studies. Subgroup analyses by population type, measurement tool, and study year were planned but not conducted due to insufficient numbers of studies in each subgroup. In general, at least 10 studies per subgroup are recommended to obtain reliable estimates; this threshold was not met in the present dataset. Therefore, subgroup-specific pooled analyses were not performed. Additionally, no significant risk of publication bias was detected in the analysis (Kendall's Tau: -0.385 , $p: 0.062$). When examined by study type, estimates in student and general population samples were typically lower, while higher rates were reported in clinical and high-risk groups. However, due to the limited number of studies in each subgroup, a separate pooled analysis could not be performed.

Correlates of Gambling Disorder

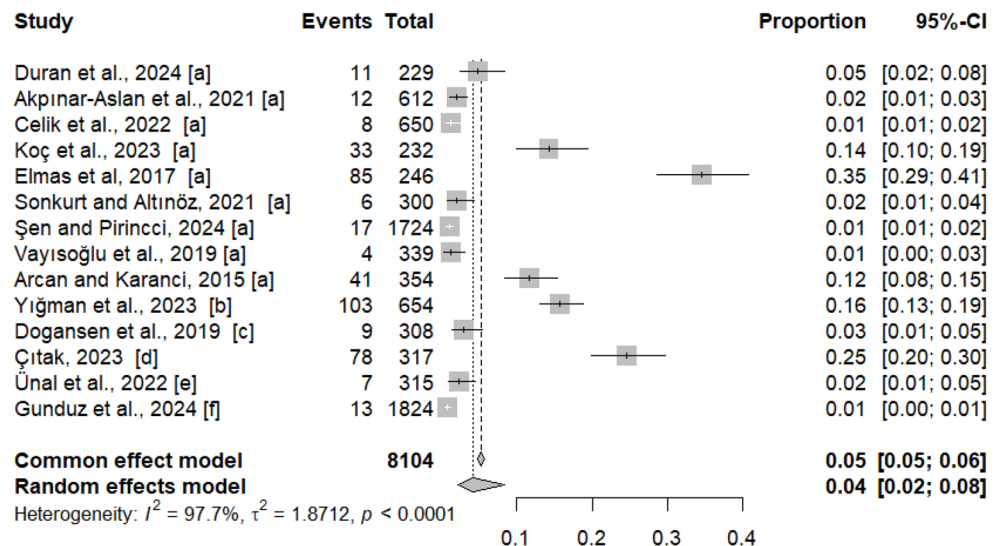
A total of 31 studies contributed evidence on correlates of gambling disorder or gambling-related behaviors in Türkiye. Common motivations include the desire to earn money, the pursuit of excitement, and the hope of recovering losses [18, 32]. Among students, gambling was often linked to entertainment, socialization, or loneliness [13, 14, 43]. Psychological vulnerabilities, such as mood disorders, insecure attachment, and adverse childhood experiences, were also associated with gambling risk [26, 34, 39]. In addition, peer and family influences were found to play a significant role, particularly among adolescents [29].

Table 2 Measures, measurement timeframes, cut-off scores, and prevalence estimates in studies included in the meta-analysis

Authors, Year	Population/Sample	<i>n</i>	Measure	Measurement timeframe	Cut-off	Prevalence (95% CI)
(Duran et al., 2024) [42]	University students	229	SOGS	Not clearly reported; data collected between April and June 2023	SOGS ≥ 8	4.8% (2.0–8.0)
(Akpınar-Aslan et al., 2021) [17]	University students	612	SOGS	Not clearly reported	SOGS ≥ 8	2.0% (1.0–3.0)
(Celik et al., 2022) [37]	University students	650	SOGS	Not clearly reported	SOGS ≥ 8	1.2% (1.0–2.0)
(Koç et al., 2023) [41]	University students	232	SOGS	Not clearly reported; data collected in October–November 2022	SOGS ≥ 8	14.2% (10.0–19.0)
(Elmas et al., 2017) [26]	Male gamblers;	246	SOGS	Not clearly reported	SOGS > 8	34.6% (29.0–41.0)
(Sonkurt and Altınöz, 2021) [20]	Cryptocurrency investors	300	SOGS	Not clearly reported for SOGS; inclusion required being a cryptocurrency investor for more than 6 months	SOGS ≥ 8	2.0% (1.0–4.0)
(Şen and Pirincci, 2024) [14]	University students	1,724	SOGS	Lifetime gambling; SOGS timeframe not clearly reported	SOGS ≥ 8	1.0% (1.0–2.0)
(Vayisoğlu et al., 2019) [32]	University students	339	SOGS	Lifetime, past-month and online gambling behavior were reported; SOGS timeframe not clearly reported	SOGS ≥ 8	1.2% (0.0–3.0)
(Arcan and Karanci, 2015) [12]	Male gamblers	354	SOGS and GRCS-T	Gambling involvement history was collected	SOGS ≥ 8	11.6% (8.0–15.0)
(Yığman et al., 2023) [21]	Cryptocurrency investors	654	SOGS-R	Not clearly reported; data collected between June and August 2022	SOGS- <i>r</i> ≥ 8	15.7% (13.0–19.0)
(Dogansen et al., 2019) [23]	Patients with prolactinoma	308	QUIP	After onset of dopamine agonist therapy; patients had received dopamine agonist therapy for at least 3 months	QUIP questionnaire criteria	2.9% (1.0–5.0)
(Çıtak, 2023) [19]	Gamblers	317	GMS and LPA	Not clearly reported; data collected June 2020–December 2022	Latent profile memberships	24.6% (20.0–30.0)
(Ünal et al., 2022) [15]	Vocational school students	315	DSM-5 and OGD-Q	12 months or more for online gambling disorder; 6–12 months for problematic online gambling	OGD-Q ≥ 4	2.2% (1.0–5.0)
(Gunduz et al., 2024) [24]	Patients with Parkinson's disease	1,824	Clinical record-based assessment of ICD	During clinical follow-up/2010–2022 retrospective period	Clinical diagnosis	0.7% (0.0–1.0)

QUIP: Questionnaire for Impulsive-Compulsive Disorders in Parkinson's Disease; SOGS: South Oaks Gambling Screen; GMS: Gambling Motives Scale; LPA: latent profile analysis; OGD-Q: Online Gambling Disorder Questionnaire, Diagnostic and Statistical Manual of Mental Disorders-V; GRCS-T: Gambling Related Cognitions Scale-Turkish; ICD: impulse control disorder

Fig. 3 Frequency of gambling disorder in Türkiye: Meta-analysis results. **a:** South Oaks Gambling Screen; **b:** South Oaks Gambling Screen – Revised; **c:** Questionnaire for Impulsive-Compulsive Disorders in Parkinson's Disease; **d:** Gambling Motives Scale/Latent Profile Analysis; **e:** Diagnostic and Statistical Manual of Mental Disorders-V; **f:** Clinical record-based assessment of impulse control disorder



The review indicates that gambling disorders in Türkiye are more prevalent among specific groups. Studies consistently show higher rates among males and younger individuals [29, 41]. Substance use is another key correlate: tobacco and alcohol consumption were strongly linked to elevated gambling risk [18, 42]. In addition, psychological problems such as depression, anxiety, and stress were more frequently observed among individuals with a gambling disorder [30, 32].

Intervention-Related Findings

A total of 8 studies contributed intervention-related findings or recommendations. These studies proposed a range of strategies to address gambling disorder in Türkiye, although none of the proposed approaches had been formally evaluated as an intervention study within the included evidence base. Key recommendations include preventive education programs, especially targeting university students [37, 42], and the creation of safe recreational environments [32]. Some authors emphasized directing at-risk groups toward sports or leisure activities, combined with family awareness and psychosocial support [13]. Others highlighted the need for screening strategies, targeted interventions, and considering socio-demographic factors [17], and treatment programs that address common psychological comorbidities such as anxiety and depression [18]. However, none of these proposed strategies have been empirically evaluated within the included studies.

Discussion

This study aimed to synthesize empirical research on gambling disorder in Türkiye and to summarize available evidence on prevalence estimates, correlates, and intervention-related findings. To achieve this goal, a systematic review and meta-analysis were performed. A total of 35 studies met the eligibility criteria and were included in the systematic review.

The earliest study on gambling disorder in Türkiye was conducted by Duvarci and Varan in 2000 [11], using the SOGS. However, research on this topic in Türkiye gained notable momentum after 2019, likely influenced by several factors. Gambling disorder has increasingly emerged as a public health concern among children and adolescents in countries with higher per capita income levels. Moreover, the COVID-19 pandemic has been associated with an increase in online gambling behaviors, particularly among high-risk groups [45, 46].

Prevalence Estimates

It was observed that only 14 studies in Türkiye reported statistical data on gambling disorder. Reported gambling

disorder prevalence varies, ranging from 1% in a large student sample to over 14% in smaller groups [14, 41]. Studies including individuals with prior gambling experience have also reported higher risks [19, 26]. These findings suggest that the risk of gambling disorder varies considerably across different populations. This variability is likely attributable to differences in sample characteristics and/or temporal factors. In this context, a meta-analysis conducted as part of this study estimated the pooled frequency of gambling disorder in Türkiye at 4.0% (95% CI: 2.0%–8.0%). However, considering the high level of heterogeneity, this figure should be regarded as a general indicator. Comparative international meta-analyses have reported lower rates than those from Türkiye, such as 3% in New Zealand and the United States samples [47] and 1.29% globally [48].

Correlates of Gambling Disorder

In this systematic review, several factors were identified as correlates or commonly reported motivations related to gambling disorder in Türkiye, including social and economic motivations such as the desire for new experiences, sensation seeking, entertainment, socialization, loneliness, spending time, peer and family effects, and the desire to earn or recover money [14, 18, 29, 32, 43]. Moreover, psychosocial factors such as mood disorders, maladaptive personality traits like resentment, insecure attachment styles, and childhood trauma were also associated with an increased risk of gambling disorder [26, 28, 34, 39]. This study also observed that gambling behavior in Türkiye appears to be more frequent among certain subgroups of the population, such as males, younger individuals, and those who use tobacco or alcohol [15, 24, 36, 41, 42]. Psychological issues were more frequent among individuals with a gambling disorder [18, 32]. However, the relationship between psychological disorders and gambling disorders has not been sufficiently studied in Türkiye. Thus, future studies should place greater emphasis on investigating the psychological comorbidities associated with gambling disorder. These findings have important clinical and policy implications. From a clinical perspective, the strong association between gambling disorder and psychological comorbidities suggests the need for integrated screening and treatment approaches within mental health services. From a policy perspective, the identification of high-risk groups—such as young individuals, males, and those with substance use—highlights the importance of targeted prevention strategies, early intervention programs, and population-level awareness initiatives.

Intervention-Related Findings

In the Turkish context, gambling disorder presents both strengths and significant challenges. The country's advanced

health infrastructure and well-established human resources in psychiatry, psychology, and public health provide a strong basis for addressing gambling disorder. This is further reinforced by experience in managing other addictions such as substance and tobacco use [49]. Also, Türkiye's centralized healthcare system provides a notable advantage by enabling the coordination of prevention, treatment, and monitoring [50]. This organizational capacity creates favorable conditions for developing and scaling effective interventions against gambling disorder. Despite these strengths, Türkiye faces significant challenges posed by rapidly evolving digital technologies, as in other countries [51]. Although private gambling and the operation of independent gambling establishments are not legally permitted in Türkiye (state-controlled gambling is allowed through a single central authority), advances in technology and increased internet use have led to the rapid expansion of online gambling, cryptocurrency-based betting, and virtual gaming platforms among the population [4, 32]. Moreover, the integration of gambling into sports betting, social media, and popular gaming applications poses a significant risk, particularly for the younger population. While legal gambling activities in Türkiye are under a state monopoly [29], the accessibility of digital gambling is causing a rapid proliferation of risky behaviors, making it increasingly difficult to regulate and oversee this sector. A comprehensive national strategy that integrates existing capacities and strengths with innovative approaches is needed to address these challenges. This strategy may include developing a digital monitoring system to monitor online and cryptocurrency-based gambling activities, implementing stricter regulations and sanctions on targeting virtual betting platforms, and integrating gambling disorder screenings into both primary care and mental health services. Universities and research centers could play a critical role by conducting real-time studies on gambling disorder, whereas public awareness campaigns should emphasize the risks of digital gambling. Türkiye may be well positioned to develop more coordinated policies against gambling-related harms by utilizing its existing health infrastructure and experience in addiction management.

Future research should aim to address the current knowledge gaps in the field of gambling disorder. Studies need to prioritize the use of nationally representative samples, the application of standardized diagnostic tools, and the adoption of longitudinal designs to allow for a more comprehensive understanding of the progression of gambling behaviors. Additionally, subgroup analyses focusing on variables such as age, gender, and socioeconomic status are essential for generating more nuanced insights regarding risk and protective factors. Given the rapid growth of digital gambling activities, real-time monitoring studies supported by strategic collaborations with technology providers could

facilitate the early detection of emerging trends and problematic behaviors. Qualitative research examining cultural and psychological dimensions would complement and enrich the predominantly quantitative evidence base. To further strengthen this field, cross-national comparative studies in the region would help situate the Turkish experience within a broader international context, offering valuable insights for policymaking by highlighting both similarities and differences.

Limitations

In this study, 35 studies on gambling disorder conducted in Türkiye were identified through systematic searches. Based on the results of the meta-analysis, an evaluation of the frequency of gambling disorder in Türkiye was provided. However, subgroup analyses by variables such as age, gender, education level, employment status, or occupation could not be conducted due to the limited number of observations. Although exploratory subgroup analyses were attempted, the limited number of existing studies prevented reliable results and underscored the need for future research using more homogeneous data. In addition, differences in the definitions and diagnostic thresholds of gambling disorder across studies may have contributed to heterogeneity. While some studies used screening tools such as the SOGS or SOGS-Revised, others relied on DSM-5 or ICD-11 diagnostic criteria. Although these differences were considered in the meta-analysis, variations in terminology and cut-off points limit direct comparability. For clarity, the term "gambling disorder" was used throughout this paper; however, it should be noted that the included studies relied on related but not identical constructs. Such variations may contribute to heterogeneity and should be considered when interpreting the results. Future research that expands the scope of databases, enhances the representation of diverse population groups, and conducts subgroup analyses will yield more specific findings and inform the development of targeted recommendations to address the problem. Additionally, focusing on different country groups and extending the scope to other types of behavioral addictions beyond gambling could offer a more comprehensive approach and support the development of more effective solutions.

Conclusion

The findings of this study indicate that the pooled estimate of gambling disorder across included studies is 4.0% (95% CI: 2.0%–8.0%), based on available and heterogeneous data sources. Based on these findings, gambling

disorder should be considered an emerging public health concern in Türkiye, particularly among specific high-risk groups. Therefore, coordinated prevention, screening, and treatment-oriented policies should be considered to address gambling-related harms, with particular attention to the role of healthcare services. In this context, awareness campaigns should be organized, and public service announcements should emphasize the negative consequences of gambling. Additionally, secondary prevention efforts should be developed, particularly targeting high-risk groups such as males and young individuals. Establishing counseling centers could facilitate the assessment of gambling risks in these groups and provide psychosocial support. Furthermore, establishing gambling helplines that provide professional counseling could be beneficial. Improving access to treatment centers for individuals diagnosed with gambling disorder is also crucial. Also, digital platforms and mobile applications could be used to monitor gambling behavior continuously. These recommendations provide a framework for developing effective strategies to prevent gambling in Türkiye and improve the quality of life among at-risk populations. Importantly, it should be noted that gambling-related harm often extends beyond individuals who meet the diagnostic criteria for gambling disorder, affecting a broader segment of the population. This further supports the need to consider gambling-related harms within public health and prevention strategies. Evidence from other countries suggests that comprehensive approaches, including regulatory measures, public awareness campaigns, and accessible treatment services, can be effective in reducing gambling-related harm [52–54].

Key References

- Gabellini E, Lucchini F, Gattoni ME. Prevalence of problem gambling: A meta-analysis of recent empirical research (2016–2022). *Journal of Gambling Studies*. 2023; 39:1027–1057.
 - This recent meta-analysis provides a comprehensive estimate of global problem gambling prevalence and highlights substantial cross-country variability, offering an important benchmark for interpreting national prevalence estimates such as those reported in Türkiye.
- Roberts A, Rogers J, Sharman S, Melendez-Torres GJ, Cowlishaw S. Gambling problems in primary care: A systematic review and meta-analysis. *Addiction Research & Theory*. 2021; 29:454–468.
 - This study synthesizes evidence on gambling problems identified in primary care settings and emphasizes the importance of integrating screening and early detection into healthcare services.
- Başoğlu UD, Yağcı İ, Seydioglu C. Reasons for gambling in university students: loneliness? *Research in Sport Education and Sciences*. 2024; 26:139–150.
 - This study examines motivations behind gambling behaviors among university students in Türkiye and highlights the role of loneliness and social factors in gambling participation.
- Duran S, Demirci Ö, Akgenç F. Investigation of gambling behavior, self-confidence and psychological resilience levels of university students. *Journal of Gambling Studies*. 2024; 40:1937–1949.
 - Provides recent evidence on gambling behavior and psychological correlates among university students in Türkiye, demonstrating the importance of psychological resilience and self-confidence in gambling risk.
- Bitanirwe BKY, Adebisi T, Bunn C, Ssewanyana D, Darby P, Kitchin P. Gambling in Sub-Saharan Africa: Traditional forms and emerging technologies. *Current Addiction Reports*. 2022; 9:373–384.
 - Highlights how technological developments and online platforms are transforming gambling behaviors globally, offering relevant insights into the digital expansion of gambling observed in Türkiye.

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Data Availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Human and animal rights and informed consent This study did not involve the collection of data from human participants or animals. All data used in this study were obtained from previously published studies and publicly available sources.

Generative AI statement During the preparation of this manuscript, generative AI-assisted tools, including ChatGPT, DeepL, and QuillBot, were used solely for language editing and improving readability. The authors reviewed and edited all AI-assisted outputs and take full responsibility.

Competing interests The authors declare no competing interests.

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