



Problem gambling severity and personal and family financial harm among students in Kazakhstan: The mediating role of psychological distress

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Abstract

Gambling-related financial harm may affect both students and the families who share or support their finances. Drawing on Conservation of Resources theory and the gambling-harm literature, this study examines whether psychological distress mediates the relationships between problem gambling severity and personal and family financial impact among students in Kazakhstan. Cross-sectional data were drawn from a student subsample of 449 respondents within a larger survey conducted across 20 regions. The proposed model was assessed using partial least squares structural equation modelling with 5,000 bootstrap resamples. Problem gambling severity was positively associated with psychological distress ($\beta = .712, p < .001$) and retained significant direct associations with personal financial impact ($\beta = .516, p < .001$) and family financial impact ($\beta = .553, p < .001$). The indirect associations through distress were also significant for personal financial impact ($\beta = .088, p = .034$) and family financial impact ($\beta = .104, p = .015$), indicating complementary partial mediation. These indirect components represented 14.6% and 15.8% of the respective total estimates. The findings distinguish personal from student-reported family financial consequences and identify a modest distress-related component alongside substantial direct associations. They suggest the relevance of coordinated gambling-related, psychological, and financial support for students. The cross-sectional design does not establish temporal or causal ordering.

Keywords: Family financial impact; Kazakhstan; Personal financial impact; Problem gambling; Psychological distress; Students

1. Introduction

Gambling-related financial harm can extend beyond the person who gambles to those who share or support their finances. Expenditure, borrowing, and difficulties meeting financial obligations may affect personal savings and essential consumption while creating additional demands on household resources. These consequences also have a relational dimension when financial assistance becomes a source of disagreement or uncertainty. Langham et al. (2016) identify financial difficulties and relationship disruption as interconnected domains of gambling-related harm experienced by individuals and affected others. Evidence from banking transactions further demonstrates that greater gambling expenditure relative to income is associated with financial distress and reduced financial planning (Moreira et al., 2023; Muggleton et al., 2021). Together, these perspectives suggest that understanding gambling-related financial harm requires attention to both personal circumstances and the wider financial relationships in which gambling occurs.

Students constitute a relevant population for examining these relationships because their access to financial resources may involve stipends, paid employment, savings, and support from relatives. Where resources are limited or irregular, gambling expenditure may compete with everyday needs and reduce the capacity to absorb unexpected costs. The relevance of these circumstances extends beyond gambling research: a cross-sectional study of college students identified associations between financial problems and subjective well-being, highlighting the importance of considering financial circumstances alongside psychological experiences (Yu, 2024). Nevertheless, students should not be treated as uniformly dependent on their families. In the present sample, 65.9% identified state or institutional stipends as their main income source, illustrating the importance of considering different financial arrangements. A primary income

source also does not establish whether additional assistance is available or requested during financial difficulty. Research among university students in Portugal identified relatives, household funds, and personal or family assets as sources of money used to finance gambling or repay gambling debts (Azevedo et al., 2023). These findings highlight the value of examining students' own financial difficulties alongside perceived consequences for their families, without assuming that the two necessarily coincide.

Existing research provides evidence of connections between gambling involvement, psychological difficulties, and adverse financial circumstances, but an integrated analysis can clarify how these domains relate to one another (Allen et al., 2025). Distinguishing personal from family financial impact allows financial consequences involving the respondent to be considered separately from perceived household burdens and financial conflict. Psychological distress may help explain part of these associations, while direct relationships may remain because gambling expenditure and debt need not depend entirely on emotional or cognitive difficulties. Research has examined gambling and distress among students (Agbenorxevi et al., 2023), but longitudinal evidence also identifies psychological symptoms as possible antecedents of gambling problems (Dowling et al., 2019). This uncertainty makes it important to examine a theoretically specified indirect pathway without assuming complete mediation or a confirmed causal sequence. The question addressed here is therefore whether psychological distress accounts for an additional component of the relationships between gambling severity and two distinguishable financial outcomes.

Kazakhstan provides a relevant setting for this investigation. A recent adult survey reported gambling participation and financial exposure, including expenditure beyond affordable limits, alongside public support for stronger harm-reduction measures (Buribayev & Khamzina, 2025). These findings establish the relevance of gambling-related financial difficulties in the national context, while leaving questions about their psychological and family dimensions within particular population groups. Examining students can complement this broader evidence by considering the financial circumstances of people whose main reported occupation is studying (Buribayev & Khamzina, 2025; Buribayev et al., 2025). The present analysis draws on a student subsample from a survey conducted across 20 regions of Kazakhstan. This geographical coverage provides contextual breadth but does not establish that the subsample represents all students nationally. Its purpose is to examine relationships within the available data rather than estimate national student gambling prevalence. The educational context is also relevant. Analyses of Kazakhstan's higher education reforms describe an evolving combination of centralised governance, market mechanisms, and international influences, while research on university strategy formulation identifies variation in planning practices across institutional settings (Makatova et al., 2026; Yergaliyev et al., 2026). These studies provide background for considering institutional responses to student difficulties, although they do not establish the circumstances of the respondents examined here.

This study examines the relationships between problem gambling severity, psychological distress, personal financial impact, and family financial impact among students in Kazakhstan. Drawing on Conservation of Resources theory and the gambling-harm literature, it proposes that gambling severity is associated with adverse financial consequences both directly and indirectly through psychological distress. The study draws on survey data from 449 respondents who identified their main occupational status as student and uses partial least squares structural equation modelling to examine the proposed relationships. It addresses the following research question: to what extent does psychological distress statistically mediate the associations between problem gambling severity and personal and family financial impact? By distinguishing personal from perceived family consequences and estimating direct and indirect paths together, the study offers a differentiated account of gambling-related financial difficulties in students' lives. Its cross-sectional design supports examination of these associations while leaving their temporal and causal ordering open to further investigation.

2. Literature Review and Theoretical Framework

2.1. Gambling-related Harm and Students' Financial Circumstances

Understanding the consequences of gambling requires attention to both the severity of gambling problems and the circumstances in which harm is experienced. Problem gambling severity concerns the extent of problematic gambling behaviour and associated adverse experiences. Gambling-related harm encompasses the negative consequences affecting individuals and people connected to them (American Psychiatric Association, 2013). Langham et al. (2016) distinguish financial, emotional, relational, and other domains of harm, demonstrating the importance of examining consequences beyond the individual gambler. Their framework provides a basis for considering personal and family financial consequences as connected but distinguishable outcomes.

This distinction is relevant to students, whose financial circumstances may involve varying combinations of stipends, employment, savings, and family assistance (Allami et al., 2021). Gambling expenditure may place pressure on their own resources while also creating demands on those who provide financial support. Evidence from university students in Portugal illustrates these connections: respondents who borrowed to gamble or cover gambling debts reported obtaining resources from relatives, household funds, and the sale of personal or family assets (Azevedo et al., 2023). Although these findings cannot be assumed to apply uniformly across student populations, they demonstrate why an exclusively individual account may overlook important financial consequences. Educational research also illustrates how students draw on different sources of assistance when resources are constrained. In a qualitative study of remote learning during the COVID-19 pandemic, Filipino university students described borrowing learning resources, seeking peer and teacher support, and taking additional jobs as coping strategies (Rotas & Cahapay, 2021). Although the stressor differs from gambling, the study illustrates the varied practical and relational resources available to students.

The present study distinguishes personal financial impact from family financial impact. Personal financial impact refers to perceived adverse consequences for the respondent's financial circumstances and related economic functioning, including disposable income, savings, debt, basic expenditure, and employment or productivity. Family financial impact concerns perceived adverse consequences involving household finances, assistance with gambling debts, and financial conflict within the family. Family assistance itself is not necessarily harmful; its relevance here concerns assistance connected to gambling-related financial difficulties and the burdens surrounding it (Nurgabdeshev et al., 2018).

Psychological distress constitutes a third domain relevant to these relationships (Moreira et al., 2023). In this study, it refers to negative emotional and cognitive experiences assessed in relation to a gambling-related stressful event. This construct represents a narrower set of adverse psychological experiences than the multidimensional concept of psychological well-being discussed in educational research, which also encompasses cognitive-emotional capacities, supportive relationships, and institutional conditions (Sarzhanova & Nurgabdeshev, 2025). Accordingly, the present study examines gambling-related distress rather than students' overall psychological well-being. The model therefore examines whether such distress helps account for the associations between gambling severity and the two financial outcomes. Because family consequences are reported by students, the family construct represents perceived impact rather than an independent assessment of family members' experiences.

2.2. Conservation of Resources Theory

Conservation of Resources (COR) theory provides the principal explanatory framework for the proposed relationships. Hobfoll (1989) argues that people seek to acquire and protect valued resources and experience stress when those resources are threatened, lost, or inadequately replenished following investment. Financial security, valued possessions, and supportive relationships are relevant resources in the present context. Gambling problems may threaten

several of these simultaneously, providing a theoretical basis for examining their association with distress.

Subsequent COR scholarship emphasises the importance of resource investment in protecting against loss and the possibility that initial losses leave individuals more vulnerable to further difficulties (Hobfoll et al., 2018). Applied to gambling, this perspective suggests that threats to financial security may be accompanied by psychological strain, while strained individuals may encounter additional difficulties protecting their remaining resources. This is an application of COR to the proposed model, rather than a claim that the study directly measures a temporal resource-loss process.

Conceptual precision is important when applying COR. Resources should be distinguished from the responses associated with their threat or actual loss (Halbesleben et al., 2014). Accordingly, psychological distress is treated here as a response to adverse circumstances that may also be associated with difficulties managing them; it is not equated with a directly measured depletion of self-control or coping resources. Financial impact likewise represents perceived adverse consequences rather than a complete inventory of resource losses.

This framework accommodates both direct and indirect associations. Financial consequences may arise from gambling expenditure and debt without being fully explained by distress. At the same time, negative emotional and cognitive experiences may provide an additional connection between gambling severity and financial difficulties. The model consequently retains direct paths to both financial outcomes alongside the proposed distress-mediated paths.

2.3. Problem Gambling Severity and Psychological Distress

Greater gambling severity may be accompanied by repeated experiences of financial uncertainty, unsuccessful attempts to control gambling, and concern about its consequences. Within COR interpretation, these experiences threaten financial security and valued relationships, making distress a plausible correlate of gambling problems. Anticipated losses may also be psychologically significant: concern about meeting obligations or disclosing gambling difficulties can arise before an individual's financial circumstances deteriorate further.

Student research has examined gambling problems and psychological distress together with cognitive and economic motives. Agbenorxevi et al. (2023) investigated these relationships among university students in Ghana, illustrating the relevance of considering financial motivations and psychological experiences within the same explanatory model. Such research provides a basis for examining distress in student gambling, while differences in measures and settings require caution when transferring specific explanations across populations.

The temporal relationship nevertheless remains open to competing explanations. Dowling et al. (2019) found that depression and generalised anxiety predicted subsequent at-risk gambling in an Australian longitudinal sample, whereas the reverse paths were not supported. This evidence cautions against assuming that distress invariably follows gambling problems. The present study examines the proposed gambling-severity-to-distress pathway as a theoretically motivated association within a cross-sectional model, without excluding distress as an antecedent or part of a reciprocal relationship.

Hypothesis 1: Problem gambling severity is positively associated with psychological distress.

2.4. Psychological Distress and Personal and Family Financial Impact

Psychological distress may be relevant to financial circumstances beyond its association with gambling severity. Negative emotional and cognitive experiences may make it more difficult to address financial demands, sustain productive activity, or communicate about emerging problems (Allen et al., 2025). In the proposed model, these possibilities provide a rationale for expecting an association between distress and financial impact after accounting for gambling severity. They are explanatory propositions rather than separately measured mechanisms.

For personal financial impact, persistent preoccupation with an adverse experience may compete with attention to everyday financial responsibilities. Withdrawal or reduced engagement

may also make it harder to seek assistance or respond promptly to debts and spending pressures. Students experiencing greater distress may consequently report more difficulty maintaining savings, meeting basic expenses, or protecting their economic functioning. These difficulties need not occur in every case, and distress is not assumed to explain all financial consequences (Ferris & Wynne, 2001).

The proposed association with family financial impact involves an additional relational dimension. When students struggle to manage their financial circumstances, family members may be asked to provide assistance, assume obligations, or participate in difficult financial decisions. Distress may complicate these interactions through withdrawal, reluctance to disclose difficulties, or conflict. The theoretical expectation is therefore that greater student distress will be associated with more adverse perceived family financial circumstances, even among respondents with comparable levels of gambling severity (Baumeister & Vonasch, 2015).

Qualitative evidence demonstrates that financial and psychological difficulties can coexist within gambling-affected families. Azemi et al. (2023), drawing on interviews with nine female family members in the United Kingdom, documented financial hardship alongside emotional and relational difficulties. Their findings establish the relevance of interconnected family consequences, although they do not demonstrate that the gambler's distress causes family financial harm. The present model tests a more specific association using the student's own distress and perceptions of family financial impact.

Hypothesis 2: Psychological distress is positively associated with personal financial impact, controlling problem gambling severity.

Hypothesis 3: Psychological distress is positively associated with family financial impact, controlling for problem gambling severity.

2.5. Direct Associations between Problem Gambling Severity and Financial Impact

A psychological pathway does not fully describe the relationship between gambling problems and financial circumstances. Gambling can absorb money that would otherwise be available for consumption, saving, or debt repayment. Continued expenditure and attempts to recover losses may increase financial exposure, while borrowing can extend obligations beyond the immediate gambling episode. These processes provide a rationale for retaining direct associations between gambling severity and both financial outcomes (Baumeister & Heatherton, 1996; Moreira et al., 2023).

Evidence based on financial transactions supports the relevance of this connection. Using banking data covering up to 6.5 million individuals, Muggleton et al. (2021) found that higher gambling expenditure relative to income was associated with greater financial distress and lower financial inclusion and planning. Their measure of gambling expenditure differs from the severity construct used here, but the findings provide independent evidence that gambling involvement is associated with adverse financial circumstances beyond self-reported psychological symptoms.

For students, reduced disposable resources may create difficulties in maintaining savings and meeting ordinary expenses. These consequences need not depend on substantial psychological distress: financial commitments can remain difficult to meet even when emotional responses are limited, unreported, or managed through other forms of support. A direct association with personal financial impact is therefore expected after accounting for distress (Reilly et al., 1993).

Financial consequences may also extend to families when resources are shared or relatives provide assistance. Covering gambling debts, replacing money intended for essential expenditure, or repeatedly responding to requests for support may place pressure on household finances. Financial disagreements may arise over the use of shared resources or the conditions attached to assistance. These possibilities are consistent with the gambling-harm framework's recognition that consequences may be experienced by affected others as well as by the person who gambles (Langham et al., 2016).

The two direct paths represent associations remaining after accounting for the measured distress construct. They should not be interpreted as identifying a single mechanism or proving

that psychological processes are absent.

Hypothesis 4: Problem gambling severity is positively associated with personal financial impact, controlling for psychological distress.

Hypothesis 5: Problem gambling severity is positively associated with family financial impact, controlling psychological distress.

2.6. The Mediating Role of Psychological Distress

The preceding arguments suggest that psychological distress may account for part of the relationship between gambling severity and financial impact. Greater gambling severity may be associated with threatening or adverse experiences that involve negative emotions and cognitions. Those experiences may, in turn, accompany difficulties managing personal financial demands and negotiating financial relationships with family members (Baumeister et al., 1998). The proposed indirect paths connect these arguments within a single model.

For personal financial impact, the hypothesized pathway links gambling severity to distress and then to adverse personal financial circumstances. For family financial impact, it links gambling severity to distress and then to perceived household burdens and gambling-related financial conflict (Moreira et al., 2023). The distinction between the outcomes allows the study to examine whether the proposed indirect association extends beyond the respondent's own finances.

The model does not assume that distress accounts for the entire association with either outcome. Direct financial consequences can coexist with psychological difficulties, and the relative contribution of each pathway is an empirical question. Retaining both direct paths therefore permits assessment of whether distress provides additional explanatory value without imposing complete mediation.

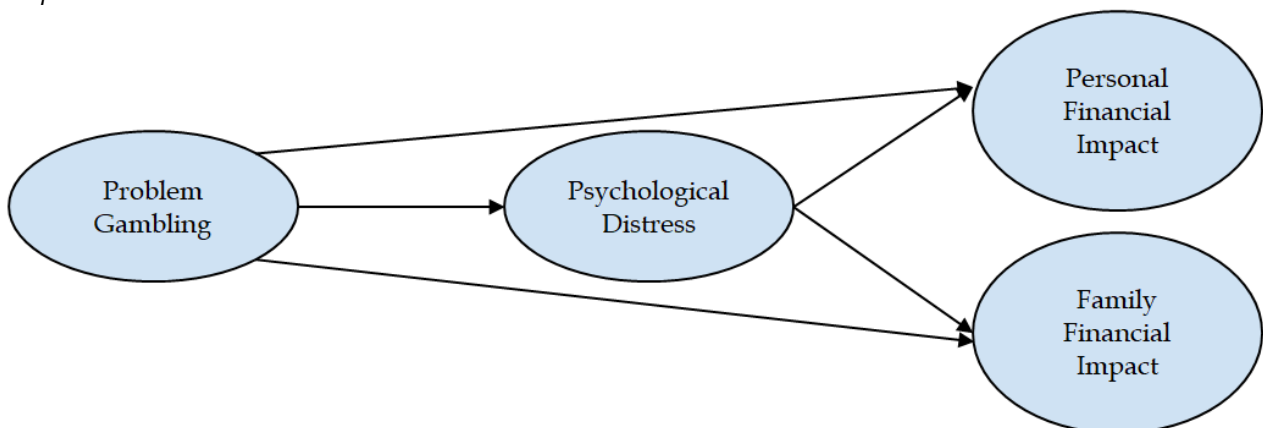
Financial difficulties may also contribute to distress, and unmeasured factors may influence both. The cross-sectional analysis cannot distinguish these possibilities conclusively. The hypotheses consequently concern positive statistical indirect associations consistent with the proposed theoretical ordering, rather than a demonstrated causal sequence.

Hypothesis 6: Problem gambling severity has a positive indirect association with personal financial impact through psychological distress.

Hypothesis 7: Problem gambling severity has a positive indirect association with family financial impact through psychological distress.

Figure 1 presents the proposed model, comprising the five direct relationships and the two indirect pathways through psychological distress.

Figure 1
Proposed Research Model



3. Methodology

3.1. Research Design and Survey Context

This study employed a quantitative, cross-sectional survey design to examine the relationships between problem gambling severity, psychological distress, personal financial impact, and family financial impact among students in Kazakhstan. The data were drawn from a larger national survey of gambling behaviour conducted across 20 regions. The present study focused on respondents who identified their main occupational status as student.

The proposed model included direct associations between problem gambling severity and both financial outcomes, together with indirect associations through psychological distress. Partial least squares structural equation modelling (PLS-SEM) was used to estimate the measurement and structural models following established reporting guidance (Hair et al., 2019, 2022; Ringle et al., 2024). The analysis examined a theoretically specified model of associations; the cross-sectional design did not permit conclusions about temporal ordering or causality.

3.2. Participants and Data Collection

The student subsample comprised 449 respondents selected on the basis of their reported main occupational status. The sample of the analytic study was selected from a larger national survey of gambling behavior conducted in 20 regions of Kazakhstan. The source survey did not record the type of educational institution attended by respondents identifying as students. Accordingly, participants were described as students rather than university students. Reported educational attainment was treated as a demographic characteristic and was not used to infer current institutional enrolment. Most respondents were aged 18–20 years ($n = 399$, 88.9%), followed by those aged 21–30 ($n = 45$, 10.0%) and 31–40 ($n = 5$, 1.1%). The sample included 341 men (75.9%) and 108 women (24.1%), and 439 respondents (97.8%) were single or never married. Most identified as Kazakh ($n = 310$, 69.0%) or Russian ($n = 100$, 22.3%); the remaining 39 respondents (8.7%) belonged to other ethnic groups or did not report their ethnicity. State or institutional stipends were the most frequently reported main income source ($n = 296$, 65.9%). Table 1 presents the demographic characteristics of the student subsample. The questionnaire was administered in Kazakh and Russian languages.

3.3. Measures

Four constructs were included in the model: problem gambling severity, psychological distress, personal financial impact, and family financial impact. All were specified as reflective constructs in the reported analysis. Higher item scores indicated greater gambling severity, distress, or adverse financial impact, respectively. Although the financial constructs retained the term “impact,” their indicators concerned negative consequences.

Problem gambling severity was assessed using nine items based on the Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001). The items addressed gambling beyond affordable limits, increasing amounts wagered, chasing losses, borrowing or selling possessions to finance gambling, and adverse experiences associated with gambling. Responses were recorded on a four-point frequency scale ranging from 0 (never) to 3 (almost always). The nine indicators were entered into the measurement model to represent gambling severity. Because the measure includes indicators concerning health and financial difficulties, potential conceptual overlap with the mediator and financial outcomes was considered when interpreting the estimated relationships.

Psychological distress was assessed using seven items concerning negative emotional and cognitive experiences. Responses ranged from 0 (not at all) to 4 (extremely). The measure was administered only to respondents who identified their most stressful experience during the preceding year as attributable to gambling or its consequences. The construct therefore represented distress assessed in relation to a gambling-related stressful experience (Weathers et al., 2013).

Personal financial impact was measured using six items addressing adverse consequences for respondents' financial and economic circumstances. These covered employment or productivity,

Table 1
Demographic Profile of the Student Sample (N = 449)

Characteristic	<i>n</i>	%
Age		
18–20	399	88.9
21–30	45	10.0
31–40	5	1.1
Sex		
Male	341	75.9
Female	108	24.1
Marital status		
Single/never married	439	97.8
Married/cohabiting/other	10	2.2
Ethnicity		
Kazakh	310	69.0
Russian	100	22.3
Other/missing	39	8.7
Educational attainment		
Secondary	181	40.3
Incomplete higher education	134	29.8
Technical/vocational college	72	16.0
Higher education (bachelor's)	40	8.9
Incomplete secondary	22	4.9
Main income source		
State/institutional stipend	296	65.9
Informal earnings	42	9.4
Family financial support	40	8.9
No steady income	33	7.3
Formal wages	10	2.2
Business/self-employment	6	1.3
Not reported	22	4.9

disposable income, debt, savings, and reduced expenditure on basic needs. Responses were recorded on a four-point agreement scale ranging from 1 (strongly disagree) to 4 (strongly agree). The construct captured perceived adverse personal financial consequences, including related economic functioning, rather than an objective monetary estimate of gambling losses.

Family financial impact was assessed using four items concerning household financial circumstances, reliance on others to cover gambling debts, financial assistance from family members, and conflict over gambling-related financial issues. Responses ranged from 1 (strongly disagree) to 4 (strongly agree). This construct represented respondents' perceptions of adverse financial consequences involving their families. Family members were not surveyed independently; consequently, the measure was interpreted as student-reported family financial impact.

3.4. Analytical Strategy

The analysis followed a two-stage procedure comprising assessment of the measurement model and estimation of the structural relationships (Hair et al., 2019, 2022). Analyses were conducted using SPSS and SmartPLS. The measurement model was evaluated using indicator loadings, Cronbach's alpha, composite reliability coefficients (ρ_A and ρ_C), and average variance extracted [AVE]. Loadings of approximately .70 or above, reliability coefficients of .70 or above, and AVE values exceeding .50 were used as reference criteria, alongside consideration of indicator content (Hair et al., 2019, 2022). Discriminant validity was assessed using the heterotrait–monotrait ratio of correlations [HTMT], with .85 adopted as the conservative reference threshold (Henseler et al., 2015). Indicator collinearity was examined using variance inflation factors [VIFs]. Reliability and

validity statistics were interpreted together rather than as substitutes for conceptual assessment of the measures.

The structural model included five direct paths: problem gambling severity to psychological distress; psychological distress to personal and family financial impact; and problem gambling severity to each financial outcome. Including the direct paths allowed the indirect associations through distress to be estimated while retaining associations not accounted for by the mediator.

Structural relationships were assessed using standardised path coefficients (β), coefficients of determination (R^2), effect sizes (f^2), and predictor collinearity statistics. The conventional f^2 benchmarks of .02, .15, and .35 were used as reference points for small, medium, and large effects, respectively (Cohen, 1988). Statistical significance and effect magnitude were considered separately.

Inference for the direct and specific indirect effects used 5,000 bootstrap resamples and bias-corrected 95% confidence intervals. Effects were considered statistically significant when their confidence intervals excluded zero. For each financial outcome, the specific indirect effect was estimated as the product of the gambling-severity-to-distress path and the corresponding distress-to-outcome path. Total effects were calculated as the sum of the direct and indirect effects.

Mediation was interpreted by considering the significance and direction of the direct and indirect estimates together. The indirect effect divided by the total effect was also reported as a descriptive measure of the mediated share. This ratio was not treated as evidence of causal mediation or as a substitute for bootstrap inference (Kock, 2015).

Because all constructs were measured through a single self-report survey, common-method variance remained a potential source of bias (Podsakoff et al., 2003).

4. Results

4.1. Measurement Model Assessment

The measurement model comprised four constructs: problem gambling severity [PGS], psychological distress [PD], personal financial impact [PFI], and family financial impact [FFI]. Internal consistency and convergent validity statistics are presented in Table 2. Cronbach's alpha ranged from .904 to .956, while composite reliability coefficients ranged from .906 to .956 for ρ_A and from .926 to .964 for ρ_C . All values exceeded the conventional .70 threshold. However, the reliability coefficients above .95 for psychological distress warrant caution concerning possible indicator redundancy.

Average variance extracted ranged from .632 to .806, exceeding the .50 reference threshold for all constructs. Standardised outer loadings for the 26 indicators ranged from .742 to .916. All indicators were retained because their loadings exceeded .70. Together, these results supported internal consistency and convergent validity, subject to the qualification concerning the high reliability of psychological distress.

Table 2

Construct Reliability and Convergent Validity

<i>Construct</i>	<i>Items</i>	<i>Cronbach's α</i>	<i>ρ_A</i>	<i>ρ_C (CR)</i>	<i>AVE</i>
Problem Gambling Severity	9	.927	.931	.939	.632
Psychological Distress	7	.956	.956	.964	.792
Personal Financial Impact	6	.904	.906	.926	.677
Family Financial Impact	4	.920	.922	.943	.806

Note. ρ_A = composite reliability (ρ_{ho_a}); ρ_C = composite reliability (ρ_{ho_c}); AVE = average variance extracted.

Discriminant validity was assessed using the heterotrait-monotrait ratio of correlations. As shown in Table 3, values ranged from .528 to .753, remaining below the conservative .85 threshold (Henseler et al., 2015). The highest value was observed between problem gambling severity and psychological distress (.753), followed by personal and family financial impact (.736). These results supported empirical differentiation among the four constructs. Nevertheless, acceptable HTMT values do not eliminate potential conceptual overlap between gambling-severity indicators and

indicators of distress or financial consequences.

Table 3

Discriminant Validity – Heterotrait-Monotrait Ratio

Construct	PFI	FFI	PGS	PD
Personal Financial Impact	—			
Family Financial Impact	.736	—		
Problem Gambling Severity	.654	.702	—	
Psychological Distress	.528	.574	.753	—

Indicator VIF values ranged from 2.11 to 3.87, except for PD2, which concerned persistent negative beliefs about oneself, other people, or the world and had a VIF of 5.03. This value slightly exceeded the reference threshold of 5. The indicator was retained, but its elevated VIF, together with the high reliability of the psychological-distress construct, indicated possible redundancy requiring consideration when interpreting the measurement results.

4.2. Direct Structural Relationships

The five direct structural relationships were evaluated using 5,000 bootstrap resamples and bias-corrected 95% confidence intervals. Table 4 presents the standardised path coefficients, bootstrap *t*-statistics, *p*-values, confidence intervals, and effect sizes.

Problem gambling severity was positively associated with psychological distress ($\beta = .712$, $t = 21.78$, $p < .001$, 95% CI [.643, .770]), supporting H1. The corresponding effect size was large ($f^2 = 1.031$).

Psychological distress was positively associated with personal financial impact after accounting for problem gambling severity ($\beta = .124$, $t = 2.12$, $p = .034$, 95% CI [.009, .237]), supporting H2. It was also positively associated with family financial impact ($\beta = .146$, $t = 2.45$, $p = .014$, 95% CI [.029, .264]), supporting H3. Although both relationships were statistically significant, their effect sizes were very small ($f^2 = .012$ and $.019$, respectively), falling below the conventional .02 benchmark for a small effect.

Problem gambling severity retained positive direct associations with personal financial impact ($\beta = .516$, $t = 9.25$, $p < .001$, 95% CI [.400, .620]) and family financial impact ($\beta = .553$, $t = 10.00$, $p < .001$, 95% CI [.444, .658]), supporting H4 and H5. Their effect sizes were medium according to the conventional benchmarks ($f^2 = .209$ and $.269$, respectively).

All five direct relationships were statistically significant at $p < .05$, including three at $p < .001$. All bias-corrected confidence intervals excluded zero.

Table 4

Structural Path Coefficients, Effect Sizes, and Bootstrap Significance (Direct Effects)

Path	β	t	p	95% BC CI	f^2	Decision
PGS → PD (H1)	.712	21.78	< .001	[.643, .770]	1.031	Supported
PD → PFI (H2)	.124	2.12	.034	[.009, .237]	.012	Supported
PD → FFI (H3)	.146	2.45	.014	[.029, .264]	.019	Supported
PGS → PFI (H4)	.516	9.25	< .001	[.400, .620]	.209	Supported
PGS → FFI (H5)	.553	10.00	< .001	[.444, .658]	.269	Supported

Note. β = standardised path coefficient (PLS algorithm); t = bootstrapped *t*-statistic ($|O/STDEV|$), 5,000 resamples; 95% BC CI = bias-corrected bootstrap confidence interval; f^2 = Cohen's (1988) effect size (.02 small, .15 medium, .35 large).

4.3. Indirect and Total Associations

The two specific indirect associations through psychological distress were positive and statistically significant (Table 5). The indirect association between problem gambling severity and personal financial impact was .088 ($t = 2.12$, $p = .034$, 95% CI [.007, .172]), supporting H6. The corresponding indirect association with family financial impact was .104 ($t = 2.43$, $p = .015$, 95% CI [.022, .192]), supporting H7.

Table 5
Specific Indirect (Mediation) Effects

Path	β	t	p	95% BC CI	Decision
PGS → PD → PFI (H6)	.088	2.12	.034	[.007, .172]	Supported
GB → PD → FFI (H7)	.104	2.43	.015	[.022, .192]	Supported

Note. BC CI = bias-corrected bootstrap confidence interval based on 5,000 resamples.

For both financial outcomes, the direct and indirect associations were statistically significant and operated in the same direction. This pattern was consistent with complementary partial mediation. Psychological distress accounted for an additional component of the associations between gambling severity and financial impact, while substantial direct associations remained.

As shown in Table 6, the total estimated association between problem gambling severity and personal financial impact was .604, comprising a direct component of .516 and an indirect component of .088. For family financial impact, the total estimated association was .657, comprising a direct component of .553 and an indirect component of .104. The indirect components represented approximately 14.6% and 15.8% of the respective total estimates.

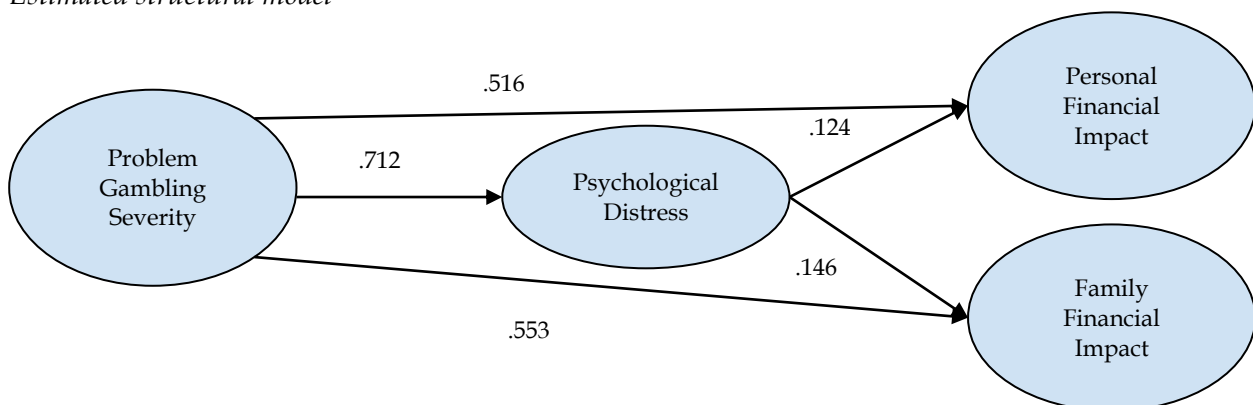
Table 6
Total Effects of Problem Gambling Severity on Financial Impact

Path	Direct β	Indirect β	Total β	VAF (%)
PGS → PFI	.516	.088	.604	14.6
PGS → FFI	.553	.104	.657	15.8

Note. Total effect = direct effect + specific indirect effect. Mediated share = indirect effect ÷ total effect × 100. Percentages describe the decomposition of model estimates and do not represent proportions of actual financial losses attributable to distress (Hair et al., 2019).

The estimated structural model is presented in Figure 2. Overall, the reported relationships supported all seven hypotheses. Gambling severity showed substantial direct associations with both financial outcomes, alongside smaller indirect associations through psychological distress. Although the coefficients for family financial impact were numerically higher than those for personal financial impact, no formal test of these differences was reported. The results therefore do not establish that the relationships differed significantly between the two outcomes. Given the cross-sectional design, the mediation estimates were interpreted as statistical indirect associations rather than evidence of a causal sequence.

Figure 2
Estimated structural model



To summarize, the results for all seven hypotheses were in favor of the hypotheses. Problem gambling severity was a strong, direct predictor of psychological distress and exerted both direct and, via psychological distress, indirect effects on personal and family financial impact, with the pattern best characterised as partial mediation in which the majority of gambling severity's influence on financial impact – to both the individual and the family – operates directly, while a smaller but statistically robust share is transmitted through gambling-related psychological distress.

5. Discussion

5.1. Interpretation of the Principal Findings

This study examined the relationships between problem gambling severity, psychological distress, and personal and family financial impact among students in Kazakhstan. Gambling severity was strongly associated with psychological distress and retained significant direct associations with both financial outcomes when distress was included in the model. The two indirect associations through psychological distress were also significant, producing a pattern consistent with complementary partial mediation. Taken together, the findings suggest that distress contributes to understanding gambling-related financial difficulties, although most of the total estimated association with each financial outcome remained direct.

The positive association between gambling severity and psychological distress is consistent with the proposed resource-based interpretation. Students experiencing more severe gambling problems may face threats to financial security, difficulties meeting obligations, and concerns about the consequences of their behaviour. Within Conservation of Resources theory, such threats provide a plausible basis for psychological strain (Hobfoll, 1989). However, the association does not establish that gambling preceded distress. Longitudinal evidence has also identified depression and anxiety as antecedents of subsequent at-risk gambling (Dowling et al., 2019). The present findings should therefore be understood within a potentially reciprocal relationship rather than as confirmation of a single temporal sequence.

The direct associations between gambling severity and personal and family financial impact were substantial relative to the distress-related paths. This pattern suggests that the measured psychological experiences account for only part of the relationship between gambling problems and adverse financial circumstances. Gambling expenditure, borrowing, and demands for financial assistance offer plausible explanations for associations that remain after accounting for distress, although these processes were not separately tested. The findings are broadly consistent with Muggleton et al. (2021), whose analysis of banking transactions linked greater gambling expenditure relative to income with financial difficulties. The present study complements that evidence by distinguishing respondents' personal financial circumstances from perceived consequences involving their families.

Psychological distress nevertheless showed positive associations with both financial outcomes after gambling severity was taken into account. The corresponding effect sizes were very small, and the indirect pathways represented approximately 14.6% of the total estimated association with personal financial impact and 15.8% with family financial impact. These results support the relevance of distress while placing limits on its explanatory prominence. They do not support describing distress as the principal mechanism connecting gambling severity to financial harm. Nor do the mediated percentages represent the proportion of actual financial losses attributable to psychological difficulties.

The distinction between personal and family financial impact is also informative. Gambling-related difficulties may involve the respondent's own debt, savings, and expenditure alongside household financial pressures and conflict over assistance. Research among Portuguese university students identified relatives and household resources as sources of money used for gambling or gambling debts (Azevedo et al., 2023), while qualitative research with gambling-affected families documented financial and emotional difficulties occurring together (Azemi et al., 2023). The present findings are compatible with these connections, but they concern students' perceptions of family consequences rather than independently reported family experiences. Furthermore, the numerically larger coefficients for family financial impact cannot establish a stronger relationship without a formal comparison of the estimates.

5.2. Theoretical Contributions

The study contributes to understanding gambling-related harm by examining personal and family financial consequences within the same explanatory model. The gambling-harm framework

developed by Langham et al. (2016) recognises that adverse consequences can extend beyond the person who gambles to affected others. Building on this distinction, the present analysis indicates that personal and perceived family financial impact can be examined as related but empirically distinguishable outcomes. This approach provides a more differentiated account than combining all financial consequences into a single construct.

A second contribution concerns the role assigned to psychological distress. By estimating direct and indirect relationships simultaneously, the study avoids assuming that financial difficulties must operate entirely through psychological experiences. The findings instead identify a modest indirect component alongside substantial direct associations. This distinction matters theoretically because explanations centred on emotional strain may overlook financial consequences that are not accounted for by the measured distress construct. Equally, an exclusively financial account may overlook the additional association involving negative emotional and cognitive experiences.

The findings also illustrate the potential relevance of COR theory to gambling-related financial difficulties. COR directs attention to how valued resources and responses to their threatened or actual loss are connected (Hobfoll et al., 2018). The observed pattern is compatible with an interpretation in which gambling problems, distress, and adverse financial circumstances form interconnected domains of difficulty. However, the study did not directly measure resource investment, coping capacity, or changes in resources over time. Its contribution is therefore an application of the framework to a particular pattern of associations, rather than a direct demonstration of resource-loss spirals or an extension of the theory's underlying propositions.

Finally, the study provides evidence from a student sample in Kazakhstan. This contextual contribution offers a basis for comparison with findings from other educational and national settings. It does not establish that the relationships are uniquely Kazakhstani or attributable to particular cultural characteristics. Such conclusions would require comparative data and explicit measures of the contextual factors proposed to explain differences.

5.3. Practical Implications

The findings suggest that support for students experiencing gambling problems should consider gambling behaviour, psychological difficulties, and financial circumstances together. The substantial direct associations with financial impact indicate that financial concerns may warrant attention even when distress is not the student's main presenting difficulty. Conversely, the significant indirect associations suggest that psychological experiences should not be overlooked when students seek assistance with gambling-related financial problems. These implications identify potentially relevant areas of support; the study did not evaluate the effectiveness of any intervention.

Educational institutions may provide opportunities to connect these forms of assistance through existing student-support, counselling, and financial-advice services. For example, a student seeking help with financial hardship could be offered a confidential opportunity to discuss whether gambling contributes to the problem, followed by referral where appropriate. Similarly, support for gambling-related distress could include consideration of debt, essential expenditure, and access to financial advice. The aim would be to improve coordination while avoiding assumptions that all financial hardship or psychological distress is gambling-related. Research in Kazakhstan's schools suggests that the availability of formal well-being strategies alone does not ensure psychologically safe support: staffing capacity, clear responsibilities, leadership coordination, and resource mobilisation also shape implementation (Nurgabdeshev et al., 2026). Although this evidence concerns school settings, it offers a relevant consideration when designing coordinated responses to students' gambling-related difficulties.

If institutions use digital platforms to coordinate counselling, financial advice, or referrals, the governance of sensitive student information also requires consideration. Pinar (2026) identifies educational data control, platform dependence, and data-protection arrangements as important dimensions of digital governance. Applied to the proposed support context, this perspective suggests clarifying where disclosures about gambling, distress, and financial difficulties would be

stored, who could access them, and how external providers would handle them. These are considerations for designing digital assistance rather than findings of the present study, which did not examine digital service provision.

The family outcome highlights the value of understanding the wider financial circumstances surrounding a student's difficulties. Where appropriate and with the student's agreement, support could include discussion of how gambling affects shared resources, requests for assistance, or family financial relationships. Family involvement should not be presumed beneficial or required: students differ in their relationships, living arrangements, and sources of support. Assistance should respect confidentiality and avoid transferring responsibility for managing gambling problems to relatives. Research in Kazakhstan's secondary education similarly indicates that associations between family engagement, school-based support, and school connectedness vary with the broader educational environment (Sarzhanova et al., 2026). This provides contextual support for considering family involvement individually, while remaining distinct from evidence about gambling-related family financial harm.

For educational practice, the relevance of these findings lies in the financial and psychological circumstances of students' lives. Although such circumstances may matter for educational participation, this study did not measure attainment, engagement, or retention. It therefore provides no direct evidence that the proposed forms of support would improve educational outcomes. Their feasibility, acceptability, and effectiveness require separate evaluation.

5.4. Limitations and Future Research

Several limitations qualify the interpretation of the findings. First, the cross-sectional design prevents the establishment of temporal ordering. Financial difficulties may contribute to distress, distress may precede gambling problems, and the relationships may reinforce one another. Significant indirect effects do not distinguish these possibilities. Longitudinal research with repeated assessments of gambling severity, distress, and both financial outcomes would provide a stronger basis for examining their ordering and development.

Second, the student sample was drawn from a broader survey rather than a sampling design specifically intended to represent the student population. Respondents were predominantly young and male, and current institution type was not recorded. Educational attainment cannot establish whether respondents were attending secondary school, vocational education, or university. The findings should therefore be generalised cautiously, and future studies should identify educational setting, enrolment status, and relevant financial circumstances more precisely.

Third, the distress measure was administered conditionally to respondents identifying a gambling-related experience as their most stressful event during the preceding year. Its interpretation is consequently tied to that eligibility condition and to the handling of inapplicable responses in the analytical dataset. The resulting associations should not automatically be generalised to students who did not identify such an event. Future research could administer an established general-distress measure to all participants while separately assessing gambling-related stressful experiences.

Fourth, the measures impose conceptual boundaries on the conclusions. The distress construct captures a particular set of negative emotional and cognitive experiences, while the personal financial scale includes economic functioning and the family scale includes financial conflict. These constructs should not be interpreted as comprehensive measures of mental health or objective financial loss. Further validation would help establish their dimensionality and suitability across different student populations.

Some gambling-severity indicators also concern health or financial consequences, creating potential overlap with the mediator and outcomes. Although the HTMT results supported empirical differentiation, they do not eliminate this conceptual concern. Future analyses should assess whether the substantive pattern persists under alternative measurement specifications that reduce overlapping content. The very high reliability of psychological distress and elevated VIF for one indicator also warrant closer examination of item redundancy.

Fifth, all measures were obtained from the same respondent on a single occasion. Shared reporting tendencies, recall difficulties, and reluctance to disclose gambling-related problems may have affected the estimates. Family financial impact was reported by students rather than relatives, so differences between students' and family members' perceptions remain unknown. Research combining student reports with consensually obtained family accounts or suitable financial records could provide a more complete assessment.

Future research could also examine whether gambling-related financial difficulties and psychological distress are associated with students' career development and participation in employability-related learning. Gassanova (2026) identifies career self-efficacy as a mechanism connecting personal, educational, and contextual resources with career exploration and decision-making. Harte et al. (2026) similarly emphasise the interaction between institutional design, experiential learning, and cognitive processes in employability development. These perspectives suggest extending the present model to examine career self-efficacy and engagement with career-development opportunities, particularly among students approaching employment transitions. Such relationships remain questions for future investigation because the present study did not measure career development or employability.

Finally, the direct paths may contain associations operating through mechanisms absent from the model. Financial circumstances, coping responses, access to support, and gambling patterns could help explain variation in the two outcomes. Their examination should follow a clear theoretical rationale and suitable measurement rather than treating the remaining direct associations as evidence of any particular mechanism. Future research could also test differences between the personal and family pathways and assess whether the model predicts outcomes in independent samples.

6. Conclusion

This study examined the relationships between problem gambling severity, psychological distress, and personal and family financial impact among students in Kazakhstan. Gambling severity was positively associated with both financial outcomes directly and indirectly through psychological distress. The pattern was consistent with complementary partial mediation: distress accounted for a modest component of the estimated relationships, while substantial direct associations remained.

By distinguishing personal financial difficulties from students' perceptions of financial consequences involving their families, the study provides a more differentiated account of gambling-related harm. The findings are compatible with a Conservation of Resources interpretation, although they do not establish the temporal sequence of distress and financial difficulties or demonstrate resource-loss processes.

The results suggest that support for students experiencing gambling problems should consider psychological experiences alongside personal and family financial circumstances. Coordination between gambling-related support, counselling, and financial-advice services warrants further evaluation. Longitudinal research using clearly defined student populations and independent assessments of family consequences is needed to examine the direction of these relationships and inform appropriate responses.

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research questions, design decisions, data collection, analytical choices, statistical verification, interpretation of results, and conclusions remained the sole responsibility of the authors. All AI-assisted output was critically reviewed and verified against the data and original sources before inclusion. No AI tool was used to generate, simulate, or alter research data. The authors take full responsibility for the final manuscript.

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Ethical statement: The study was approved by the Research Ethics Committee of Zhetysu University named after I. Zhansugurov (approval No. 6-1, dated 14 January 2025) as part of the programme Integrative Study of Gambling Addiction in Kazakhstan and Multidisciplinary Strategies for Its Minimization (grant No. BR24992927). The research was conducted in accordance with the ethical principles governing research involving human participants and the legislation of the Republic of Kazakhstan on personal data protection. The data were drawn from a national survey of gambling behaviour conducted across 20 regions of Kazakhstan by the Expert Center "Qogam" under a service contract with Zhetysu University named after I. Zhansugurov (Contract No. 1, dated 23 February 2026). Participation was voluntary, and informed consent was obtained from all respondents before they completed the questionnaire. Respondents were informed about the purpose and objectives of the study, the procedures for data processing, their right to withdraw at any stage without consequences, and the confidentiality and anonymity of their responses. The questionnaire was administered in Kazakh and Russian. All respondents included in the present analysis were aged 18 years or older. The data were anonymised, stored securely with access restricted to members of the research team, used exclusively for research purposes, and are reported only in aggregated form.

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