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The Causal Model of the Relationship Between Family Functioning and Perceived Social Support of Students with Internet Addiction: The Mediating Role of Stress Coping Strategies

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A B S T R A C T

Purpose: The present study aimed to propose a causal model of the relationship between family functioning and perceived social support of students with internet addiction, considering the mediating role of stress coping strategies.

Methods and Materials: The research design was fundamental in nature and employed a descriptive-correlational method based on structural equation modeling (SEM). The statistical population included all students of Islamic Azad University, North Tehran Branch, during the 2024–2025 academic year. From this population, a sample of 301 students was selected through multistage cluster sampling. Participants responded to the Young Internet Addiction Test (IAT), the Epstein Family Assessment Device (FAD), the Zimet Multidimensional Scale of Perceived Social Support (MSPSS), and the Endler and Parker Coping Inventory for Stressful Situations (CISS-SF). The collected data were analyzed using structural equation modeling with AMOS 26 software.

Findings: The results revealed that family functioning was negatively and significantly associated with internet addiction among students (p = .001). Perceived social support was also negatively and significantly associated with internet addiction (p = .001). Emotion-focused and avoidance coping styles were positively related to internet addiction, whereas the problem-focused coping style was negatively and significantly associated with it (p = .001). Moreover, both problem-focused and emotion-focused coping styles negatively and significantly mediated the relationship between family functioning and internet addiction (p = .001). All three coping styles negatively and significantly mediated the relationship between perceived social support and internet addiction (p = .001).

Conclusion: It can be concluded that positive family functioning and higher perceived social support are associated with lower levels of internet addiction. Emotion-focused and avoidance coping styles reinforce this association, whereas problem-focused coping weakens it.

Keywords: *Internet addiction; students; stress coping strategies; perceived social support; family functioning.*

1. Introduction

In recent decades, the expansion of digital communication technologies has profoundly reshaped patterns of social interaction, leisure, and education. Although the internet provides opportunities for learning, entertainment, and connectivity, its excessive and maladaptive use has given rise to behavioral disorders such as Internet Addiction (IA), recognized as a growing public health concern worldwide (Zhang et al., 2024). Internet addiction, also referred to as problematic internet use, is characterized by compulsive engagement with online activities, withdrawal symptoms, and functional impairment in personal, social, and academic domains (Bechiche & Boudouda, 2025). The phenomenon has become particularly prominent among university students due to their high digital literacy, extensive access to technology, and the developmental vulnerabilities of emerging adulthood (Lochner et al., 2024).

Empirical evidence suggests that family functioning plays a critical role in shaping individuals' behavioral regulation and emotional resilience in the digital environment (Karim Adnani et al., 2024). Families with low cohesion, poor communication, or inconsistent control tend to fail in providing the emotional support and structure necessary to regulate online behaviors (Chen et al., 2020). Healthy family systems, by contrast, promote adaptability, problem solving, and role clarity—factors that can prevent maladaptive internet use. Studies have shown that dysfunctional family dynamics are associated with heightened impulsivity, emotional dysregulation, and addictive behaviors, including internet and gaming addiction (Bechiche & Boudouda, 2025; Karaer & Akdemir, 2019).

The perception of social support has been equally recognized as a protective factor against internet addiction (Lu et al., 2023). Social support functions as a buffer against stress, loneliness, and depression, all of which contribute to excessive internet use (Nowak et al., 2022). Adolescents and young adults who perceive low levels of emotional and instrumental support are more likely to turn to online platforms to meet their unmet psychological needs (Mutlu & ÇEtİNgÖK, 2023). Conversely, individuals with high perceived social support demonstrate stronger self-regulation and are less susceptible to the reinforcing cycle of online dependency (Moradi & Moradi, 2022).

The mechanism through which family functioning and perceived social support influence internet addiction is complex and often mediated by coping strategies. Coping strategies refer to the cognitive and behavioral efforts individuals employ to manage stressful experiences (Nasr Isfahani et al., 2025). They are generally categorized into three primary types: problem-focused coping, emotion-focused coping, and avoidance coping (Taleghaninejad et al., 2019). Problem-focused coping involves confronting and addressing the source of stress, whereas emotion-focused coping emphasizes managing emotional distress. Avoidance coping, on the other hand, seeks to escape or deny the stressor and has been consistently linked to maladaptive outcomes, including addictive behaviors (Fallah Hasani Roudi, 2024).

Family systems theory underscores that supportive and cohesive families cultivate effective coping repertoires in their members, which in turn reduce the likelihood of psychological maladjustment (Farahmandi et al., 2025). Dysfunctional families may fail to model or reinforce adaptive coping patterns, leading individuals to rely on avoidant or emotion-focused responses (Pirfalak Maloumeh et al., 2023). Research has demonstrated that students from families with poor communication and emotional responsiveness are more likely to resort to internet use as a maladaptive coping mechanism to manage stress, boredom, or negative emotions (Nwufo & Ike, 2024).

The mediating role of coping strategies between family dynamics and behavioral addictions has been supported by several studies. For example, a study by Hua et al. (2023) found that coping styles mediated the relationship between childhood trauma and internet addiction among Chinese adolescents, suggesting that early adverse experiences may influence later addictive behaviors through maladaptive coping tendencies (Hua et al., 2023). Similarly, (Batool & Iftikhar, 2024) found that perceived stress and coping strategies significantly predicted internet gaming disorder among adolescents. These findings collectively suggest that coping processes are central to understanding the psychosocial pathways leading from familial and social contexts to internet addiction.

At the same time, the rapid evolution of online culture and the ubiquity of digital platforms have introduced new dimensions to coping behavior. The internet itself often serves as a means of escape from real-life difficulties, amplifying the risk for those who use online activities as a form of emotion regulation (Yildirim Demirdöğen et al., 2024). Empirical data confirm that maladaptive coping styles, such as avoidance and emotional disengagement, are associated with greater levels of problematic internet use (Shan et al., 2021; Tomaszek & Muchacka-Cymerman,

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2021). Conversely, problem-focused coping strategies, including time management and cognitive restructuring, are inversely related to addictive internet behaviors (Onyekachi et al., 2022).

From a psychological perspective, perceived social support moderates the relationship between stress and addictive behaviors by enhancing one's capacity to use adaptive coping mechanisms (Lu et al., 2023; Xie & Kim, 2022). When individuals experience high levels of supportive interaction from family and peers, they are more likely to engage in constructive coping responses rather than avoidance or emotional suppression (Iran Nejad et al., 2022). This notion aligns with the stress-buffering hypothesis, which posits that social support mitigates the negative effects of stress and reduces vulnerability to psychological disorders, including behavioral addictions (Vieira et al., 2023).

Recent cross-cultural research has further reinforced the protective role of social support and family cohesion in mitigating internet addiction among students (Lochner et al., 2024). In Turkish and Iranian samples, for instance, emotional support and parental monitoring significantly predicted lower levels of problematic internet use (Karim Adnani et al., 2024; Mutlu & ÇEtİNgÖK, 2023). Likewise, the presence of empathy, role clarity, and mutual understanding within the family correlates with better emotional regulation and lower compulsive internet engagement (Bechiche & Boudouda, 2025; Farahmandi et al., 2025).

Conversely, research has shown that adolescents who experience family conflict or low-quality parental attachment are more prone to psychological distress and use the internet excessively to fulfill unmet emotional needs (Fallah Hasani Roudi, 2024; Karaer & Akdemir, 2019). Dysfunctional families may contribute to feelings of isolation, frustration, or lack of belonging, driving young individuals toward virtual environments for validation and companionship (Moradi & Moradi, 2022; Nwufo & Ike, 2024).

Moreover, coping strategies have been conceptualized as dynamic processes that mediate between internal emotional regulation and external environmental stressors. Empirical research indicates that adaptive coping mechanisms act as psychological buffers against internet addiction by facilitating problem solving and emotional balance (Yang et al., 2021). In contrast, maladaptive coping styles, such as avoidance or venting, exacerbate the reinforcing cycle of online dependency (Tomaszek & Muchacka-Cymerman, 2021). For example, individuals who cope through escapism or denial are more likely to find the anonymity and accessibility of the internet appealing as a stress relief outlet (Sabiote et al., 2024; Wang et al., 2024).

Cross-national studies have revealed that cultural context shapes the relationships among family functioning, coping, and internet use. In collectivist cultures such as Iran and China, the family unit exerts a stronger influence on individual behavior, and the absence of familial harmony may lead to greater emotional vulnerability and reliance on maladaptive coping mechanisms (Hua et al., 2023; Jiang et al., 2024). On the other hand, in more individualistic societies, peer relationships and perceived social support may serve as compensatory mechanisms for weak family cohesion (Mutlu & ÇEtİNgÖK, 2023).

Empirical studies in Iran have consistently demonstrated that both family functioning and perceived social support are significant predictors of students' psychological health and behavioral regulation. For instance, (Moradi & Moradi, 2022) found that emotional intelligence and social support jointly predicted internet addiction, highlighting the interplay between emotional processes and interpersonal networks. Similarly, (Iran Nejad et al., 2022) showed that self-compassion mitigates internet addiction through stress-coping strategies. (Pirfalak Maloumeh et al., 2023) further reported that mindfulness mediates the relationship between coping and internet addiction, emphasizing the importance of self-regulatory capacities.

Internationally, (Wang et al., 2024) and (Vieira et al., 2023) pointed out that internet addiction is linked not only to emotional maladjustment but also to broader psychosocial patterns such as social adaptability and early maladaptive schemas. (Jiang et al., 2024) demonstrated that excessive internet use impairs academic performance through diminished engagement and attention, suggesting the need for early preventive strategies within educational settings.

In this broader framework, family functioning and perceived social support can be conceptualized as two pivotal contextual resources that influence coping responses and behavioral adjustment. High-functioning families and supportive social environments nurture emotional stability and problem-focused coping, whereas dysfunctional families and low social support increase the tendency toward avoidance and emotional withdrawal (Bechiche & Boudouda, 2025; Lochner et al., 2024). Consequently, the mediating role of coping strategies provides a comprehensive psychological model to explain how

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environmental and interpersonal variables contribute to internet addiction.

Furthermore, psychological interventions that target coping flexibility and family communication have shown promising outcomes in reducing internet addiction (Zhang et al., 2024). Meaning therapy and family-based psychoeducation, for instance, enhance family coherence and emotional awareness, which indirectly lower the risk of behavioral addictions (Farahmandi et al., 2025). Likewise, cognitive-behavioral and mindfulness-based programs have been effective in teaching adaptive coping skills and reducing avoidance tendencies among at-risk youth (Hua et al., 2023; Taleghaninejad et al., 2019).

Taken together, the literature indicates that internet addiction is not merely an outcome of technological overuse but rather the result of an intricate interaction between family dynamics, social resources, and coping behaviors. The integration of these variables into a structural model provides an evidence-based framework for understanding the psychosocial determinants of internet addiction among students.

Therefore, the present study aims to propose and test a causal model of the relationship between family functioning and perceived social support with internet addiction among university students, emphasizing the mediating role of stress coping strategies.

2. Methods and Materials

2.1. Study Design and Participants

The present study was conducted using a descriptive–correlational method based on the structural equation modeling (SEM) approach. The statistical population included undergraduate students of Islamic Azad University, North Tehran Branch, during the 2024–2025 academic year. To determine the sample size, based on the number of specified parameters (7 variables, 12 paths, 20 indicator errors, and 3 covariance errors), a total of 42 parameters were estimated. Accordingly, the sample size was calculated as 294 participants, which, with overestimation, was increased to 310. Nine questionnaires were excluded due to incomplete responses, resulting in a final sample size of 301 participants. Sampling was conducted through a multistage cluster random sampling method to ensure adequate representativeness of the population.

During the implementation phase, the researcher randomly selected four faculties from the university, two departments from each faculty, and four classes from each department. The researcher attended the selected classes, explained the objectives of the research and its ethical considerations to the volunteer participants, and described the procedure for completing the questionnaires. The questionnaires were distributed to students under the researcher's supervision to ensure accuracy in completion. Additionally, both oral and written instructions were provided, attached to the questionnaires. These instructions included information on maintaining confidentiality of personal data, the importance of honest responses, the necessity of choosing the option most reflective of the individual's situation, and a brief description of the study's topic. After the questionnaires were completed, data were collected and preliminarily reviewed. In cases where questions were unanswered or multiple options were marked, participants were notified for correction. Finally, the data were entered into the software for analysis.

2.2. Measures

The Internet Addiction Test was developed by Young (1996) to measure the degree of internet addiction. It consists of 20 items and two main subscales: lack of control/time management and craving/social problems. Responses are rated on a 5-point Likert scale, with total scores ranging from 20 to 100; higher scores indicate greater dependency on the internet and more severe problems resulting from excessive use. The face validity of this instrument has been confirmed, with internal consistency reliability reported above .92 and significant test–retest reliability (Young, 1996). For psychometric validation in Iran, the scale was translated using the back-translation technique and administered along with the Barratt Impulsiveness Scale, the short form of the Big Five Personality Inventory, and the original 20-item form. Cronbach's alpha coefficients for the two subscales—lack of control/time management and craving/social problems—were .87 and .88, respectively. The concurrent validity with the long form of the Internet Addiction Test was .89. The correlations with the subscales of the Barratt Impulsiveness Scale were positive and significant, whereas correlations with the openness and agreeableness dimensions of the Big Five were negative and significant. Exploratory and confirmatory factor analyses confirmed the factorial structure, indicating that the short form of the Young IAT has satisfactory psychometric properties in the Iranian population (Amiri, 2018).

The Family Assessment Device was developed by Epstein, Lawrence, Baldwin, and Bishop (1983) to assess

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family functioning based on the McMaster Model of Family Functioning. It contains 60 items and seven subscales: problem-solving, communication, roles, affective responsiveness, affective involvement, behavioral control, and general functioning. Items are rated on a 4-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree). Higher scores indicate poorer and more dysfunctional family functioning, whereas lower scores indicate healthier functioning. Some items are reverse-scored to enhance measurement validity. Concurrent validity with the Philadelphia Geriatric Morale Scale (PGMS) and the Locke–Wallace Marital Adjustment Scale (LWMSS) showed that this instrument can predict variance related to satisfaction and individual functioning of couples. Confirmatory factor analysis also verified its factor structure (Epstein et al., 1983). In Iran, the questionnaire was standardized by Zadeh-Mohammadi and Malek-Khosravi, reporting a Cronbach's alpha coefficient of .94 for the total scale (Zadeh-Mohammadi & Malek-Khosravi, 2006). In another study by Yousefi (2012), convergent and divergent validity coefficients for various subscales, including the Communication Patterns Questionnaire and the Locus of Control Scale, were .46, .36, and .41, respectively.

The Multidimensional Scale of Perceived Social Support was developed by Zimet et al. (1988) to assess individuals' perceived social support. It includes 12 items with three subscales: support from friends, family, and significant others. Items are rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The total score is obtained by summing all 12 items and dividing by their number, while each subscale score is derived from the mean of its four related items. The minimum and maximum possible total scores are 12 and 84, respectively, with higher scores indicating higher perceived social support. Zimet et al. (1988) reported a reliability coefficient of .73, and divergent validity was confirmed through correlations with the depression and anxiety subscales of the Hopkins Symptom Checklist (HSCL). Psychometric evaluation of the Persian version demonstrated Cronbach's alpha coefficients of .91 for the total scale and .87, .83, and .89 for the subscales of family, friends, and others, respectively. Test–retest reliability coefficients (over a 2–4 week interval) were .86, .78, .69, and .75 for the total and subscales, respectively. Convergent and discriminant validity were confirmed through correlations with measures of psychological well-being, affective empathy, and positive and negative affect, yielding coefficients of .57, .53, .49, and −.55, respectively.

The Coping Inventory for Stressful Situations was developed by Endler and Parker (2008) to assess individuals' coping styles in response to stressful situations. The questionnaire comprises 21 items and three subscales: problem-focused coping, emotion-focused coping, and avoidance coping. Items are rated on a 5-point Likert scale from 1 (very little) to 5 (very much), with higher scores indicating a greater tendency toward the corresponding coping style. Concurrent validity with the CISS Situation-Specific Coping Index showed high correlations between the overall scale and the problem-focused subscale (.71 for men and .64 for women). The emotion-focused subscale correlations were .66 for men and .63 for women, and for the avoidance subscale, .53 and .49, respectively. Reliability coefficients for the subscales among male participants were .92, .82, and .85, and for female participants, .90, .85, and .82. In Iran, concurrent validity was assessed using the Billings and Moos Coping Scale, yielding correlations of .62 for problem-focused coping and .40 for emotion-focused coping, while no significant correlation was found for avoidance strategies. Construct validity was confirmed via exploratory factor analysis, explaining 58% of the total variance. Cronbach's alpha coefficients were .83 for the total scale and .86, .81, and .79 for the subscales of problem-focused, emotion-focused, and avoidance coping, respectively.

2.3. Data Analysis

Descriptive statistical indices, including frequency distribution tables, means, and standard deviations, were extracted using SPSS version 26. Model fit was assessed using structural equation modeling with AMOS version 24.

3. Findings and Results

In the present study, 301 students (203 women and 98 men) participated, with a mean age of 24.34 years and a standard deviation of 5.06 years. Among the participants, 27 (9%) were studying at the associate degree level, 133 (44.2%) at the undergraduate level, 119 (39.5%) at the master's level, and 22 (7.3%) at the doctoral level. It is noteworthy that 254 participants (84.4%) were single and 47 (15.6%) were married. Table 1 presents the means, standard deviations, and correlation coefficients among the components of family functioning, perceived social support, stress coping strategies, and internet addiction.

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Table 1

Means, Standard Deviations, and Correlation Matrix of Research Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Family Functioning – Problem Solving	-													
2. Family Functioning – Communication	.43	-												
3. Family Functioning – Roles	.38	.61	-											
4. Family Functioning – Affective Responsiveness	.37	.56	.58	-										
5. Family Functioning – Affective Involvement	.32	.41	.50	.45	-									
6. Family Functioning – Behavioral Control	.18	.29	.38	.43	.32	-								
7. Family Functioning – General Functioning	.52	.59	.52	.56	.39	.34	-							
8. Perceived Social Support – Family	.07	.16	.05	.19	.04	.06	.01	-						
9. Perceived Social Support – Friends	.09	.16	.10	.18	.28	.19	.11	.34	-					
10. Perceived Social Support – Significant Others	.19	.15	.08	.21	.17	.04	*.12*	.42	.39	-				
11. Coping Strategy – Avoidance	*–.13*	–.16	–.21	*–.12*	–.22	–.19	–.11	–.21	*–.12*	–.19	-			
12. Coping Strategy – Emotion-Focused	–.08	–.35	–.30	*–.30*	–.29	–.15	–.27	.21	–.17	–.30	.36	-		
13. Coping Strategy – Problem-Focused	.26	.29	–.19	.32	.07	.06	–.30	.20	.19	.21	.04	–.17	-	
14. Internet Addiction	–.22	–.31	–.26	*–.23*	–.23	–.10	–.26	–.25	–.32	–.29	.43	.46	–.35	-
Mean (M)	18.07	19.94	22.27	17.91	21.87	21.96	31.65	12.42	10.42	10.83	19.84	20.75	21.76	57.80
Standard Deviation (SD)	10.96	3.60	2.72	2.76	4.81	4.30	5.16	3.65	3.56	3.32	4.00	5.40	4.68	10.96

As shown in Table 1, the direction of correlations among variables was consistent with expectations and theoretical frameworks in the relevant field. As displayed in Table 2, the assumptions of normality and multicollinearity were examined through the analysis of skewness, kurtosis, tolerance coefficients, and variance inflation factors (VIFs) for predictor variables.

Table 2

Examination of Normality and Multicollinearity Assumptions

Variable	Skewness	Kurtosis	Tolerance	VIF
Family Functioning – Problem Solving	–0.51	0.03	0.45	2.23
Family Functioning – Communication	–0.43	–0.31	0.47	2.15
Family Functioning – Roles	0.02	–0.26	0.44	2.25
Family Functioning – Affective Responsiveness	–0.60	0.57	0.57	1.75
Family Functioning – Affective Involvement	–0.24	–0.72	0.69	1.46
Family Functioning – Behavioral Control	–0.84	–0.02	0.50	2.02
Family Functioning – General Functioning	–0.36	–0.15	0.69	1.44
Perceived Social Support – Family	–0.28	–1.07	0.50	2.02
Perceived Social Support – Friends	0.15	–0.75	0.69	1.44
Perceived Social Support – Significant Others	0.16	–0.97	0.65	1.53
Coping Strategy – Avoidance	–0.18	–0.04	0.74	1.35
Coping Strategy – Problem-Focused	–0.22	0.36	0.63	1.59
Coping Strategy – Emotion-Focused	0.45	–0.03	0.69	1.45
Internet Addiction	–0.21	–1.29	-	-

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Table 2 indicates that skewness and kurtosis values for all components fell within the ±2 range, confirming the assumption of univariate normal distribution. Furthermore, the tolerance coefficients for predictor variables exceeded 0.10, and their variance inflation factor (VIF) values were below 10, confirming the absence of multicollinearity in the data.

To test the assumption of multivariate normality, the Mahalanobis distance was examined. The skewness and kurtosis values for the Mahalanobis distance were 1.12 and 0.96, respectively, both within the ±2 range, confirming that the multivariate normality assumption was met. Additionally, analysis of the standardized residual variance scatterplot indicated that the assumption of homogeneity of variance was satisfied across the dataset.

a) Measurement Model: As shown in Figure 1, family functioning and perceived social support were modeled as latent variables forming the measurement model of the study. It was hypothesized that the latent variable of family functioning would be measured by the indicators of problem solving, communication, roles, affective responsiveness, affective involvement, behavioral control, and general functioning; and that perceived social support would be measured by indicators of support from friends, family, and significant others. The fit of the measurement model to the collected data was evaluated through confirmatory factor analysis (CFA) using the maximum likelihood (ML) estimation method in AMOS version 26. The fit indices for the measurement and structural models are presented in Table 3.

Table 3

Fit Indices of the Measurement and Structural Models

Fit Index	Initial Measurement Model	Modified Measurement Model	Initial Structural Model	Modified Structural Model	Cut-off Criterion
χ^2	59.105	76.87	197.06	177.89	-
Degrees of Freedom	34	33	68	67	< 3
χ^2/df	3.11	2.66	2.90	2.66	< 3
GFI	0.935	0.946	0.918	0.926	> 0.85
AGFI	0.895	0.910	0.874	0.884	> 0.90
CFI	0.920	0.939	0.897	0.912	> 0.90
RMSEA	0.084	0.074	0.080	0.074	< 0.08

Table 3 shows that, except for the RMSEA index, other fit indices obtained from confirmatory factor analysis indicated an acceptable fit of the initial measurement model to the collected data. Given the importance of the RMSEA index in assessing model fit, modification indices were examined. By adding a covariance path between the error terms of the "problem solving" and "general functioning" indicators, the measurement model was modified. As shown in Table 3, the revised model yielded improved fit indices, indicating a better model fit.

b) Structural Model: After confirming an acceptable fit of the measurement model to the collected data and verifying the adequacy of the indicators in measuring the latent variables, the fit of the structural model to the data was tested using the structural equation modeling approach. In the study's structural model, it was hypothesized that family functioning and perceived social support are related to students' internet addiction both directly and indirectly through the mediating role of stress coping strategies. Evaluation of the fit indices obtained from analysis of the structural model in Table 3 indicates that, with the exception of the CFI fit index, the other indices derived from structural equation modeling supported the fit of the structural model. Therefore, modification indices were examined, and the structural model was revised by adding a covariance between the error terms of the two indicators "emotion-focused coping" and "avoidance coping," which yielded acceptable fit indices for the model. Table 4 presents the path coefficients among the variables in the study's structural model.

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Table 4

Path Coefficients in the Study's Structural Model

Path	Predictor	b	S.E.	β	p
Direct	Perceived social support → Emotion-focused coping	−0.562	0.166	−0.284	.001
	Perceived social support → Problem-focused coping	0.395	0.140	0.230	.003
	Perceived social support → Avoidance coping	−0.324	0.123	−0.221	.004
	Family functioning → Emotion-focused coping	−1.302	0.344	−0.327	.001
	Family functioning → Problem-focused coping	0.898	0.262	0.260	.001
	Family functioning → Avoidance coping	−0.464	0.230	−0.157	.040
	Emotion-focused coping → Internet addiction	0.435	0.131	0.211	.001
	Problem-focused coping → Internet addiction	−0.600	0.138	−0.253	.001
	Avoidance coping → Internet addiction	0.837	0.147	0.302	.001
	Perceived social support → Internet addiction	−0.634	0.346	−0.156	.047
	Family functioning → Internet addiction	−0.565	0.516	−0.069	.259
Indirect	Perceived social support → Internet addiction	−0.753	0.188	−0.185	.001
	Family functioning → Internet addiction	−1.494	0.357	−0.182	.001
Total	Perceived social support → Internet addiction	−1.387	0.345	−0.341	.001
	Family functioning → Internet addiction	−2.059	0.588	−0.251	.001

Consistent with the results in Table 4, the total path coefficient between family functioning and internet addiction (p = .001, β = −.251), on the one hand, and the total path coefficient between perceived social support and internet addiction (p = .001, β = −.341), on the other hand, were negative and significant. Table 4 shows that the path coefficients between avoidance coping (p = .001, β = .302) and emotion-focused coping (p = .001, β = .211) with internet addiction were positive, while the path coefficient between problem-focused coping and internet addiction (p = .001, β = −.253) was negative and significant. Table 4 further shows that the indirect path coefficients between perceived social support (p = .001, β = −.185) and family functioning (p = .001, β = −.182) with internet addiction were significant. However, as shown in Figure 1, there were three mediators in the model (emotion-focused, problem-focused, and avoidance coping styles). Therefore, to determine whether each of the three mediators played a significant mediating role, the Baron and Kenny formula was used. Table 5 presents the mediating role of coping styles in explaining the relationship between perceived social support and family functioning with internet addiction.

Table 5

Mediating Role of Coping Styles in Explaining the Relationship Between Perceived Social Support and Family Functioning With Internet Addiction

Paths	a*b	β	SE	z	p
Perceived social support → Avoidance coping → Internet addiction	−0.269	−0.066	0.112	−2.40	.016
Perceived social support → Emotion-focused coping → Internet addiction	−0.246	−0.059	0.118	−2.08	.037
Perceived social support → Problem-focused coping → Internet addiction	−0.234	−0.058	0.111	−2.11	.034
Family functioning → Avoidance coping → Internet addiction	−0.386	−0.048	0.209	−1.85	.062
Family functioning → Emotion-focused coping → Internet addiction	−0.572	−0.069	0.215	−2.66	.007
Family functioning → Problem-focused coping → Internet addiction	0.540	0.065	0.224	−2.59	.009

According to the results in Table 5, application of the Baron and Kenny formula showed that the indirect path coefficient between perceived social support and internet addiction through problem-focused coping (p = .001, β = −.058), emotion-focused coping (p = .001, β = −.059), and avoidance coping (p = .001, β = −.066), on the one hand, and the indirect path coefficient between family functioning and internet addiction through problem-focused coping (p = .001, β = −.065) and emotion-focused coping (p = .001, β = −.069), on the other hand, were negative and significant. Accordingly, the findings of the present study indicated that all three stress coping styles negatively and significantly mediate the relationship between perceived social support and internet addiction among students. The results also showed that two coping styles—emotion-focused and problem-focused—negatively and significantly mediate the relationship between perceived social support and internet

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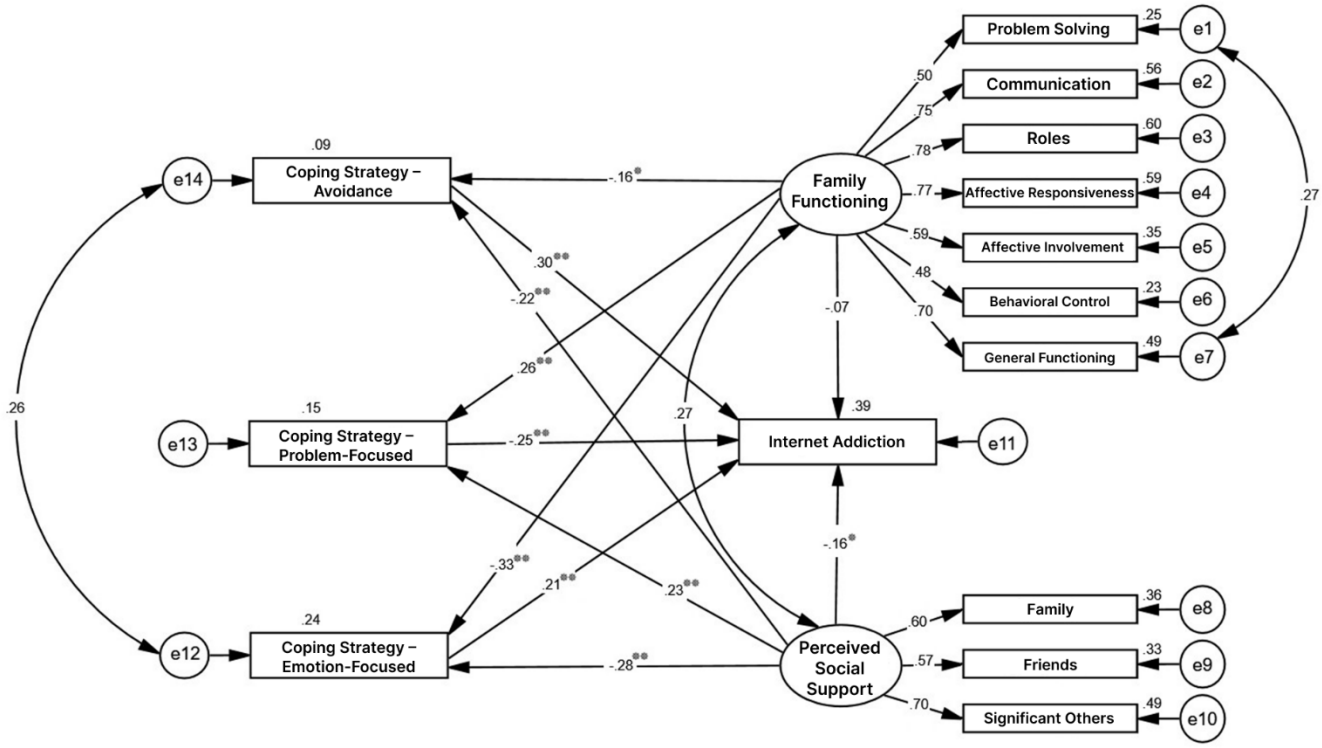
addiction among students. Figure 1 presents the standardized parameters in the study's structural model.

Figure 1 shows that the sum of the squared multiple correlations for the variable "internet addiction" was 0.39. This finding indicates that perceived social support, family functioning, and stress coping strategies jointly explained 39% of the variance in internet addiction among students.

Figure 1

Standardized Parameters in the Study's Structural Model



4. Discussion and Conclusion

The findings of the present study demonstrated that family functioning and perceived social support were both negatively and significantly related to internet addiction among university students. In addition, emotion-focused and avoidance coping styles showed a positive association with internet addiction, while the problem-focused coping style had a negative and significant relationship with it. Moreover, coping strategies played a mediating role in the relationship between family functioning, perceived social support, and internet addiction. These results collectively emphasize the importance of psychosocial and cognitive-behavioral variables in shaping students' susceptibility to excessive internet use.

The observed negative relationship between family functioning and internet addiction supports the growing body of literature emphasizing the protective role of a healthy family environment. Students who reported cohesive, communicative, and supportive family systems exhibited lower tendencies toward maladaptive internet behaviors. This finding aligns with the work of (Bechiche & Boudouda, 2025), who demonstrated that family dysfunction—manifested in emotional disengagement, poor role clarity, and conflict—heightens vulnerability to internet dependency. Similarly, (Lochner et al., 2024) found that adolescents from families with low levels of adaptability and affective involvement are more prone to problematic internet use due to reduced parental monitoring and weakened emotional bonds. In the same vein, (Karim Adnani et al., 2024) reported that dysfunctional family relationships and poor communication patterns predicted higher levels of internet addiction among high school students, suggesting that the family unit plays a crucial role in self-regulation and behavioral control.

The results also corroborate the theoretical framework that family functioning shapes coping responses. According

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to (Farahmandi et al., 2025), healthy families model constructive emotional regulation and effective problem-solving behaviors, which protect individuals against maladaptive coping mechanisms. In contrast, dysfunctional families tend to foster avoidance or emotion-oriented coping styles, both of which have been linked to compulsive online behaviors. This dynamic is evident in the present findings, where emotion-focused and avoidance coping styles positively predicted internet addiction. These results are consistent with (Pirfalak Maloumeh et al., 2023), who showed that reliance on avoidance and emotional regulation as coping strategies increased vulnerability to online dependency, whereas mindfulness-based coping mitigated these effects.

The mediating role of coping styles between family functioning and internet addiction aligns with previous empirical findings. (Hua et al., 2023) observed that coping styles mediated the relationship between childhood trauma and internet addiction among adolescents, indicating that early environmental factors exert their effects through maladaptive stress responses. Similarly, (Taleghaninejad et al., 2019) found that coping styles and emotional intelligence jointly predicted substance abuse tendencies and internet addiction, reinforcing the idea that coping mechanisms act as a key psychological bridge between environmental factors and behavioral outcomes. The current results also support the assertion of (Nasr Isfahani et al., 2025), who emphasized that individuals who adopt maladaptive coping strategies under stress experience higher levels of burnout and psychological exhaustion, both of which parallel the patterns of compulsive online behavior.

In addition, the significant negative relationship between perceived social support and internet addiction highlights the buffering role of social and interpersonal resources in preventing maladaptive technology use. Students with higher levels of perceived support from family, friends, and significant others reported lower tendencies toward excessive internet engagement. This finding is consistent with (Lu et al., 2023), who found that social support reduces problematic internet use through its influence on self-regulation and stress management. (Mutlu & ÇEtİNgÖK, 2023) likewise demonstrated that perceived social support serves as a psychological anchor that protects individuals from the negative effects of isolation and anxiety—two conditions that often drive excessive internet use. Moreover, (Nowak et al., 2022) confirmed that low perceived social support correlates with increased depressive symptoms and higher levels of internet addiction, suggesting that social connectedness acts as an emotional safeguard against online escapism.

The mediating influence of coping strategies on the relationship between perceived social support and internet addiction provides a deeper understanding of how social contexts shape behavioral patterns. (Iran Nejad et al., 2022) found that self-compassion and coping strategies mediate the relationship between social support and internet addiction, showing that individuals who perceive strong social bonds tend to employ adaptive, problem-focused coping mechanisms rather than avoidant strategies. Similarly, (Xie & Kim, 2022) reported that perceived social support enhances post-traumatic growth by promoting adaptive coping and emotional balance, further reinforcing the link between social connectedness and psychological resilience. These findings align with the stress-buffering model, according to which social support reduces the impact of stressors by enhancing coping efficiency and emotional regulation (Vieira et al., 2023).

Another important finding was that problem-focused coping significantly and negatively predicted internet addiction. This is consistent with (Tomaszek & Muchacka-Cymerman, 2021), who found that students who actively manage their academic and personal stressors are less prone to internet overuse, as they rely less on digital platforms for emotional relief. (Shan et al., 2021) similarly observed that students with strong problem-solving skills and adaptive coping styles displayed lower levels of anxiety and internet dependency. These findings suggest that promoting problem-oriented coping could serve as a preventive mechanism against internet addiction, especially in high-stress environments such as universities.

The positive relationship between avoidance coping and internet addiction found in this study also supports earlier evidence that avoidance serves as a maladaptive strategy for managing stress. (Yildirim Demirdöğen et al., 2024) noted that adolescents who use the internet as a means of escapism or distraction from emotional distress demonstrate higher rates of problematic internet use. Likewise, (Batool & Iftikhar, 2024) found that adolescents who cope with stress through avoidance or emotional disengagement are more likely to develop internet gaming disorder. This supports the idea that avoidance reinforces short-term relief while perpetuating dependency and undermining long-term emotional regulation.

The positive association between emotion-focused coping and internet addiction reflects the role of emotion regulation difficulties in digital overuse. Individuals who

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struggle to manage negative emotions such as anxiety, anger, or loneliness often turn to online activities for immediate comfort (Bechiche & Boudouda, 2025). (Sabiote et al., 2024) argued that emotional dysregulation is one of the strongest predictors of social media and internet addiction, as users employ online engagement to escape or numb distress. The findings of (Karaer & Akdemir, 2019) further indicated that emotional regulation difficulties mediate the relationship between parenting style and internet addiction, suggesting that inadequate family emotional support fosters maladaptive emotion-focused coping.

Collectively, the present study's results provide empirical evidence for an integrative model in which both environmental (family functioning, social support) and psychological (coping strategies) factors interact to influence internet addiction. This framework aligns with previous conceptual models that emphasize the interaction between family systems, emotional coping, and behavioral regulation (Kursuncu et al., 2023). The data support the notion that external support systems and internal regulatory processes function as parallel and interacting protective mechanisms.

The explanatory power of the final model—accounting for 39% of the variance in internet addiction—confirms that psychosocial factors play a central role in understanding digital dependency among students. This result is consistent with (Jiang et al., 2024), who found that internet addiction negatively impacts academic performance through mechanisms of disengagement and stress dysregulation. Furthermore, (Wang et al., 2024) emphasized that social adaptability and physical activity mediate the relationship between internet use and depression, highlighting the broader network of psychosocial factors influencing digital health.

The findings of the present study are also congruent with (Moradi & Moradi, 2022), who showed that perceived social support and emotional intelligence collectively predict internet addiction, indicating that interpersonal and emotional competencies buffer against digital overuse. Moreover, (Fallah Hasani Roudi, 2024) demonstrated that parental relationships and coping styles jointly predict adolescent internet addiction, reinforcing the mediational link identified in this study. Together, these results underscore the centrality of the family and social environment in fostering adaptive stress responses and digital well-being.

Finally, the cross-cultural evidence presented in studies such as (Mutlu & ÇEtİNgÖK, 2023), (Lu et al., 2023), and (Lochner et al., 2024) suggests that the interrelationships among family functioning, social support, and coping strategies are universal but shaped by cultural values. Collectivist societies emphasize interdependence and familial cohesion, which enhance the protective effects of family functioning and social support. In contrast, in more individualistic cultures, social support networks outside the family—such as friendships or institutional connections—may play a more salient role in moderating internet addiction (Onyekachi et al., 2022). These cultural nuances underscore the need for culturally sensitive interventions that address both familial and social dynamics.

Despite its valuable findings, the present study has several limitations. First, the cross-sectional design precludes causal inferences among the studied variables. Although structural equation modeling provides insights into possible directional relationships, longitudinal or experimental designs are needed to confirm causality. Second, the study relied on self-report instruments, which are susceptible to response bias, social desirability, and inaccurate self-assessment of coping styles or internet use patterns. Third, the sample was limited to students from one university, which constrains the generalizability of the findings across other age groups, cultural contexts, or occupational populations. Moreover, the reliance on quantitative data did not capture the subjective nuances of students' emotional and familial experiences, which could be better understood through qualitative or mixed-method approaches. Finally, internet addiction is a multifaceted construct influenced by variables such as personality traits, academic stress, and digital literacy, which were not included in the current model but warrant future examination.

Future research should employ longitudinal designs to trace the developmental trajectories of internet addiction and identify how changes in family functioning and coping evolve over time. It would also be beneficial to investigate the moderating role of personality traits, emotional intelligence, or self-regulation capacities in the relationship between social support and coping. Furthermore, cross-cultural comparative studies could provide insight into how cultural norms, family structures, and technological accessibility shape the interplay between coping mechanisms and online behaviors. Incorporating qualitative interviews or focus groups could deepen understanding of the lived experiences behind quantitative findings. Lastly, intervention-based studies assessing the effectiveness of family therapy, psychoeducation, or coping-skills training in

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reducing internet addiction would offer applied evidence for prevention and treatment programs.

From a practical perspective, the findings underscore the importance of family-based and psychosocial interventions in mitigating internet addiction. Counselors and psychologists should focus on enhancing family communication, emotional warmth, and problem-solving skills to strengthen resilience against compulsive digital behaviors. Educational institutions can develop workshops to improve students' stress management and coping skills, encouraging problem-focused rather than avoidant coping. Social support systems—both institutional and peer-based—should be strengthened to provide safe outlets for stress expression and emotional regulation. Finally, awareness programs targeting parents, teachers, and students can promote balanced internet use and highlight the role of healthy interpersonal relationships in maintaining psychological well-being.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent. All data collection procedures were approved by the Ethics Committee of Islamic Azad University, North Tehran Branch, under the ethics code IR.IAU.TNB.REC.1404.014.

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