

# Prediction of Internet Addiction Based on Distress Tolerance with the Mediating Role of Coping Strategies

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## ABSTRACT

The present study aimed to investigate the mediating role of coping strategies in the relationship between distress tolerance and internet addiction. The research method was descriptive-correlational. The statistical population included all students of Khayyam University during the 2022–2023 academic year, from whom 412 participants were selected through convenience sampling. Data were collected using the Young Internet Addiction Questionnaire, the Simmons and Gaher Distress Tolerance Scale, and the Endler and Parker Coping Strategies Questionnaire. Pearson correlation coefficient and path analysis were employed to test the research hypotheses and answer the research question. The results of the Pearson correlation analysis indicated a positive and significant relationship between distress tolerance and internet addiction. On the other hand, the findings demonstrated a negative and significant relationship between problem-focused coping strategies and internet addiction, while a positive and significant relationship was observed between emotion-focused coping strategies and internet addiction ( $p < .001$ ). Finally, the results of the path analysis showed that the exogenous variable, namely distress tolerance, had an indirect effect on the endogenous variable, namely internet addiction, and that emotion-focused coping strategies played a mediating role in the relationship between distress tolerance and internet addiction. The findings of this study may serve as an effective guide for organizations and institutions that directly deal with internet addiction among their members, such as the Ministry of Education, higher education institutions, and related organizations.

**Keywords:** Internet addiction, distress tolerance, coping strategies

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## Introduction

Internet addiction has become a clinically and socially significant behavioral problem in contemporary digital societies, particularly among adolescents and university students whose academic, social, and emotional lives are increasingly organized around online platforms. Although internet use is now an essential part of education, communication, entertainment, and identity formation, excessive and poorly regulated use may develop into maladaptive patterns characterized by compulsive engagement, impaired control, withdrawal-like experiences, functional disruption, and persistence despite adverse consequences. Recent research has therefore conceptualized problematic internet use not merely as high-frequency technology use, but as a multidimensional behavioral dysregulation pattern shaped by affective vulnerability, cognitive appraisal, self-regulatory capacity, and coping motives (1, 2). This distinction is

important because many students use the internet intensively for legitimate academic and social purposes, whereas internet addiction reflects a qualitatively different process in which online activity becomes a dominant strategy for regulating distress, escaping negative affect, or compensating for unmet psychological needs. Studies across different cultural contexts have shown that problematic technology use is associated with psychological distress, depressive symptoms, anxiety, interpersonal problems, and broader impairments in mental health and adjustment (3-6).

The expansion of digital technologies has also diversified the behavioral forms through which internet addiction may appear. Problematic social media use, problematic smartphone use, gaming disorder, cyberchondria, compulsive online shopping, and problematic online gaming can all be understood as specific expressions of maladaptive digital engagement, although each has distinct motivational and psychological correlates (7-10). For instance, social media addiction has been linked to relationship dissatisfaction and psychological distress, while problematic smartphone use has been associated with cognitive emotion regulation deficits, fear of missing out, and maladaptive metacognitions (11-13). Similarly, problematic gaming may be intensified by environmental unpredictability, maladaptive cognitions, depression, and deficient psychological flexibility (14, 15). These findings indicate that internet addiction should be investigated within a broader psychological framework that includes emotional vulnerability, stress reactivity, and coping processes rather than being reduced to mere access to technology or amount of screen time.

One of the most consistent psychological correlates of internet addiction is emotional distress. During and after the COVID-19 pandemic, studies repeatedly showed that psychological distress, perceived risk, loneliness, uncertainty, and emotional dysregulation were associated with increased problematic internet use and related digital addictions (16-18). This pattern suggests that internet addiction often functions as a maladaptive affect-regulation strategy: individuals turn to online environments because these environments provide immediate distraction, social simulation, novelty, reassurance, or escape from aversive internal states. Such reinforcement can become especially powerful among adolescents and students, whose developmental stage is marked by heightened sensitivity to social feedback, academic pressure, identity exploration, and emotional instability. Systematic evidence has further emphasized the role of emotion dysregulation in problematic technology use, showing that difficulties in recognizing, tolerating, and regulating emotional states may predispose individuals to rely on digital behaviors as compensatory mechanisms (19, 20). Therefore, any explanatory model of internet addiction must attend to how individuals experience distress and how they attempt to cope with it.

Distress tolerance is a central construct in this regard. It refers to the perceived or actual capacity to withstand negative emotional, cognitive, or somatic states without engaging in impulsive, avoidant, or maladaptive behaviors. Individuals with lower distress tolerance tend to perceive negative affect as unbearable, urgent, or uncontrollable, and they are more likely to seek rapid relief rather than engage in adaptive problem solving. In behavioral addiction research, distress tolerance has gained increasing attention because it offers a mechanism linking emotional discomfort to compulsive behavioral regulation. Evidence indicates that distress intolerance is associated with problematic internet use through coping motives and frustration of psychological needs, suggesting that individuals who cannot tolerate emotional discomfort may use the internet to escape or reduce distress rather than to pursue instrumental goals (21).

In a representative adolescent sample, avoidance and emotion-focused coping mediated the relationship between distress tolerance and problematic internet use over a one-year period, indicating that the effect of distress tolerance may operate through maladaptive coping styles rather than only through direct emotional vulnerability (22).

The importance of distress tolerance is further supported by studies in adjacent behavioral and addictive domains. Distress tolerance has been identified as a mediator between self-control and problematic social networking site use, suggesting that limited tolerance of discomfort may weaken self-regulatory capacity and increase reliance on online platforms (23). Research on substance use disorder has similarly shown that distress tolerance and stress can mediate the relationship between psychological flexibility and addictive tendencies, supporting the view that the ability to remain psychologically engaged under stress may reduce maladaptive escape behaviors (24). Recent evidence among college students has also found that distress, together with self-control, may explain the link between physical activity and problematic internet use, indicating that lifestyle and self-regulatory factors may influence digital behavior through distress-related pathways (25). These findings collectively position distress tolerance as a theoretically meaningful predictor of internet addiction, especially in university populations exposed to academic pressure, social comparison, and digital availability.

Coping strategies constitute another key explanatory domain in internet addiction research. Coping refers to the cognitive and behavioral efforts individuals use to manage internal or external demands perceived as stressful. Problem-focused coping involves active attempts to modify the stressor or solve the problem, whereas emotion-focused coping involves efforts to regulate emotional responses to the stressor. Avoidance coping involves disengagement, denial, distraction, or behavioral withdrawal from the stressful situation. These strategies differ in their adaptiveness depending on context, but in the field of behavioral addiction, emotion-focused and avoidance-oriented coping are often associated with greater risk because they can promote immediate relief without addressing underlying difficulties. Research on gaming disorder has shown that coping mechanisms can moderate the relationship between psychiatric symptoms and problematic gaming, indicating that the way individuals respond to distress determines whether symptoms translate into addictive behavior (26). Similarly, systematic literature on problematic online gaming has emphasized avoidance coping and escape motives as central mechanisms linking psychological distress to excessive online engagement (10).

The mediating role of coping is especially relevant when examining the relationship between distress tolerance and internet addiction. Individuals who experience distress as intolerable may be more likely to use emotion-focused coping strategies aimed at reducing discomfort rather than confronting the source of stress. When the internet becomes the preferred means of emotional relief, repeated use may strengthen compulsive patterns through negative reinforcement. This process is consistent with findings showing that coping motives and social support mediate the relationship between mental health and video game engagement or addiction (9). It is also consistent with evidence that school burnout may mediate the relationship between coping strategies and internet addiction, suggesting that maladaptive coping in educational contexts can increase vulnerability to excessive online behavior (27). In university students, psychosocial predictors such as emotional vulnerability, cognitive risk factors, and maladaptive regulation

patterns have been shown to distinguish problematic internet use from other addictive behaviors, further reinforcing the need to examine coping processes as explanatory mechanisms (28).

Emotion-focused coping may be particularly important because it can become maladaptive when it is dominated by rumination, emotional discharge, self-blame, suppression, or passive attempts to reduce distress without changing the stressor. In studies of adolescent smartphone and internet-related problems, cognitive emotion regulation strategies have been shown to explain the association between depressive symptoms and problematic smartphone use (12). Likewise, emotional self-regulation has been found to mediate the relationship between religious coping and internet misuse, indicating that coping is not merely a behavioral response but also an emotion-regulatory pathway through which psychological resources influence online behavior (29). The role of emotional regulation is also visible in studies of alexithymia and dissociation among adolescents with compulsive internet use, where difficulties in identifying and integrating emotional experiences may increase dependence on online environments (6). Therefore, emotion-focused coping may serve as a bridge between distress-related vulnerability and internet addiction, particularly when emotional coping becomes passive, avoidant, or relief-seeking.

Problem-focused coping, by contrast, may have a protective function. When individuals respond to stress by planning, seeking information, changing the stressful situation, or taking goal-directed action, they may be less likely to rely on online activities for escape. This does not mean that problem-focused coping eliminates internet use; rather, it may reduce the probability that internet use becomes compulsive or emotionally compensatory. Research on problematic technology use supports this distinction by showing that self-control, psychological flexibility, and adaptive regulation can reduce the risk of problematic digital behaviors (15, 23). Studies on social network site use also indicate that dysregulation and self-esteem influence problematic use through complex mediation processes, implying that adaptive self-regulatory resources may buffer the pathway from distress to digital overuse (20). In the same way, protective psychological traits such as optimism may shape metacognitive responses to smartphone use and reduce the likelihood that negative beliefs and fear of missing out become problematic (13).

Avoidance coping occupies a more ambiguous but theoretically important position. On the one hand, avoidance can provide short-term relief, especially when the stressor is uncontrollable. On the other hand, chronic avoidance prevents emotional processing and problem resolution, which may increase reliance on digital distractions. Research has linked avoidance, escape motives, and emotion-focused coping to several forms of problematic internet behavior, including gaming, social media use, and general problematic internet use (10, 22). The relevance of avoidance is also supported by studies showing that intolerance of uncertainty and uncertainty-related distress can contribute to problematic social media and smartphone use, often through serial or moderated mediation mechanisms (18, 30). When students experience ambiguity, academic uncertainty, or interpersonal insecurity as difficult to tolerate, avoidance through internet use may become a familiar coping pattern. However, empirical findings are not always uniform, and avoidance coping may vary in its predictive value depending on measurement, sample characteristics, and whether the outcome is general internet addiction, smartphone addiction, gaming disorder, or social media addiction.

The broader literature on addictive and compulsive behaviors also supports a mediation-based approach. Cyberchondria, compulsive shopping, and problematic social media use have all been linked to psychological vulnerabilities such as neuroticism, intolerance of uncertainty, insecure attachment, splitting, maladaptive

metacognitions, and impaired mentalization (7, 31-33). These findings are relevant because they indicate that behavioral addictions frequently arise at the intersection of distress, cognitive appraisal, self-regulation, and coping. Similarly, perfectionism and the pursuit of idealized functioning have been associated with substance use and internet addiction, suggesting that individuals may use online activities to manage the emotional burden of unrealistic standards or dissatisfaction (34). Sensation seeking has also been examined in relation to adolescent internet addiction, with evidence pointing to mediating and moderating mechanisms that shape the strength of this relationship (35). Together, these studies suggest that internet addiction is best understood through integrative models that identify not only direct predictors but also the mediating processes through which vulnerability becomes behavioral dysregulation.

Recent theoretical and empirical work has additionally drawn attention to contextual and motivational factors. Boredom, for example, has been identified in systematic review evidence as an important trait-level factor in problematic technology use, likely because digital environments provide immediate stimulation and relief from underarousal (36). Social anxiety has also been shown to mediate the relationship between victimization experiences and internet addiction among adolescents, indicating that interpersonal distress may drive students toward online spaces perceived as more controllable or less threatening than face-to-face interaction (4). During adolescence and emerging adulthood, these processes can be intensified by peer comparison, academic stress, family climate, and school environment. Indeed, family and school environments have been shown to mediate relationships between depression, stress, anxiety, and internet addiction across adolescent groups, highlighting the ecological context in which individual coping patterns develop (3). Therefore, examining university students' internet addiction through distress tolerance and coping strategies is consistent with both individual-level and contextual models of behavioral addiction.

Despite the growing literature, several gaps remain. First, many studies examine distress, emotion regulation, or coping separately, whereas fewer studies test an integrated model in which distress tolerance predicts internet addiction through specific coping strategies. Second, although prior research has emphasized avoidance and emotion-focused coping, the relative roles of problem-focused, emotion-focused, and avoidance coping require further clarification within a single path model. Third, university students represent a high-risk population because they face simultaneous academic, developmental, social, and technological demands; however, findings from adolescent, gaming, smartphone, and social media studies cannot automatically be generalized to general internet addiction among university students. Fourth, studies in different cultural and educational contexts are needed because coping patterns, emotional expression, internet norms, and academic stress may vary across societies. These gaps justify a model-based investigation of the relationship between distress tolerance, coping strategies, and internet addiction among university students.

Accordingly, the present study aimed to predict internet addiction based on distress tolerance with the mediating role of coping strategies among university students.

## **Methods and Materials**

### *Study Design and Participants*

The present study was a basic research study conducted using a descriptive-correlational design. Path analysis modeling was employed to analyze the relationships among the variables. The statistical population

consisted of all students of Khayyam University (approximately 7,000 students) during the 2022–2023 academic year. Based on the Morgan table, the minimum required sample size was determined to be 364 participants. In the present study, 412 participants were selected through convenience sampling and participated in the research.

### *Data Collection*

**Internet Addiction Questionnaire:** In 1996, Kimberly Young developed this questionnaire. The instrument consists of 20 items and is scored using a Likert scale to assess internet addiction from mild to severe levels. The minimum possible score on this scale is 20, and the maximum score is 100. Based on the obtained scores, individuals are classified into three groups: normal users (scores 20–49), mild addiction (scores 50–79), and severe addiction (scores 80–100). This questionnaire examines the effects of internet use on interest, compulsive use, behavioral problems, emotional changes, and functional impairment. In the study conducted by Young et al., the internal consistency of the questionnaire was reported as .92, and the test–retest reliability was also found to be significant. Furthermore, Lau and Chang identified six fundamental factors through factor analysis, including salience, excessive use, neglect of occupational duties, lack of control, social problems, and performance impairment, indicating the internal consistency and validity of the instrument. In a study conducted by Alavi et al. to evaluate the psychometric properties of this questionnaire in Iran, the results demonstrated acceptable content and convergent validity, test–retest reliability of .82, internal consistency of .88, and reliability of .72. These findings indicated that the questionnaire possesses satisfactory psychometric properties within the Iranian population.

**Distress Tolerance Questionnaire:** In 2005, Simmons and Gaher developed a questionnaire to assess distress tolerance. This instrument consists of 15 items rated on a five-point Likert scale ranging from 1 to 5. The response option “strongly agree” receives a score of 1, “slightly agree” a score of 2, “agree” a score of 3, “equally agree and disagree” a score of 4, and “slightly disagree” a score of 5. In addition, Item 6 is reverse scored. This questionnaire includes subscales assessing absorption by negative emotions, tolerance of emotional distress, regulation efforts aimed at alleviating distress, and subjective appraisal of distress. The questionnaire has been reported to have a Cronbach’s alpha coefficient of .93 and validity coefficients above .47.

**Coping Strategies Questionnaire:** In 1990, Parker and Endler developed a questionnaire to assess coping strategies among adolescents and adults in stressful and crisis situations. This instrument contains 48 items and is recognized as a self-report measure. Each coping style in this questionnaire has a separate scale consisting of 16 items. Additionally, the avoidance coping scale includes two subscales entitled “social diversion” and “distraction through activities,” each consisting of eight items. The scales in the Parker and Endler questionnaire respectively assess problem-focused coping and attempts to modify the source of stress, emotion-focused coping aimed at regulating emotions, and avoidance coping for dealing with the target problem. Various studies have reported satisfactory reliability coefficients for this questionnaire. The items related to the problem-focused coping style in the Parker and Endler questionnaire include items 1, 2, 6, 10, 15, 21, 24, 26, 27, 36, 39, 41, 42, 46, and 47. Emotion-focused coping refers to attempts aimed at regulating emotions associated with psychological stress. The items corresponding to this coping style include items 5, 7, 8, 13, 14, 16, 17, 19, 22, 25, 28, 30, 33, 34, 45, and 38. Finally, avoidance coping refers to



a coping style in which the individual engages in denial, mental disengagement from the problem, and behavioral disengagement from resolving the target issue. The items associated with this coping style include items 3, 4, 9, 11, 12, 18, 20, 23, 29, 31, 32, 35, 37, 40, 44, and 48. In studies conducted by Quraishi Rad, the Cronbach's alpha coefficient for the Coping Strategies Questionnaire was reported as .83, while the coefficients for the problem-focused, emotion-focused, and avoidance coping subscales were .85, .55, and .83, respectively. Moreover, in studies conducted by Hajian, a positive and significant correlation was observed between pretest and posttest responses on the Crisis Coping Strategies Questionnaire, further supporting the reliability of this instrument. In addition, investigations conducted in Iran, including studies by Akbarzadeh, Ahmadi, and Eslami, indicated that the instrument demonstrates satisfactory internal consistency, and the validity coefficient of this questionnaire in the study by Quraishi Rad was reported as .84.

### Data Analysis

In the data analysis procedure, both descriptive and inferential statistical methods were utilized. Descriptive statistics included concepts such as frequency distribution tables, means, and standard deviations to describe the characteristics under investigation using descriptive statistical language. Furthermore, correlation analysis and path analysis were employed to answer the research questions. These analyses were conducted using SPSS and LISREL software packages.

### Findings and Results

Table 1 presents the descriptive statistics of the research variables, including internet addiction, distress tolerance and its subscales (tolerance, absorption, appraisal, and regulation), as well as coping strategies (problem-focused, emotion-focused, and avoidance coping). In addition to the descriptive indices, skewness and kurtosis values were examined to evaluate the normality of the variables.

**Table 1. Descriptive Statistics, Skewness, and Kurtosis of the Research Variables**

| Variables                  | Mean  | SD    | Minimum | Maximum | Skewness | Kurtosis |
|----------------------------|-------|-------|---------|---------|----------|----------|
| Internet Addiction         | 39.68 | 12.06 | 20      | 100     | 0.90     | 1.40     |
| Distress Tolerance (Total) | 44.71 | 9.00  | 15      | 75      | -0.09    | 0.38     |
| Tolerance                  | 9.15  | 2.49  | 3       | 15      | -0.08    | -0.14    |
| Absorption                 | 8.70  | 2.65  | 3       | 15      | 0.22     | -0.57    |
| Appraisal                  | 17.04 | 3.66  | 6       | 30      | -0.03    | 0.15     |
| Regulation                 | 9.81  | 2.48  | 3       | 15      | -0.31    | -0.12    |
| Problem-Focused Coping     | 49.41 | 9.97  | 16      | 80      | 0.004    | 0.009    |
| Emotion-Focused Coping     | 40.53 | 11.28 | 16      | 80      | 0.52     | -0.14    |
| Avoidance Coping           | 43.81 | 9.67  | 16      | 80      | 0.31     | 0.25     |

As shown in Table 1, the mean and standard deviation of internet addiction were 39.68 and 12.06, respectively. The mean and standard deviation of the total distress tolerance score were 44.71 and 9.00, respectively. Among the distress tolerance subscales, the highest mean score was related to appraisal ( $M = 17.04$ ), whereas the lowest mean score belonged to absorption ( $M = 8.70$ ). Regarding coping strategies, the highest mean score was observed for problem-focused coping strategies ( $M = 49.41$ ), while the lowest mean score was related to emotion-focused coping strategies ( $M = 40.53$ ). Furthermore, the absolute values of

skewness and kurtosis for all variables were below the acceptable thresholds of 3 and 10, respectively, indicating that the distribution of the variables was normal according to Kline (2015).

**Table 2. Pearson Correlation Matrix Among the Research Variables**

| Variables                 | 1     | 2     | 3      | 4     |
|---------------------------|-------|-------|--------|-------|
| 1. Internet Addiction     | 1     |       |        |       |
| 2. Distress Tolerance     | .34** | 1     |        |       |
| 3. Problem-Focused Coping | -.10* | -.05  | 1      |       |
| 4. Emotion-Focused Coping | .55** | .61** | -.18** | 1     |
| 5. Avoidance Coping       | .08   | .05   | .21**  | .26** |

\*p < .05. \*\* p < .01.

As presented in Table 2, a positive and significant relationship was found between distress tolerance and internet addiction ( $r = .34$ ,  $p < .001$ ). In addition, problem-focused coping strategies showed a negative and significant relationship with internet addiction ( $r = -.10$ ,  $p < .05$ ). Emotion-focused coping strategies were positively and significantly associated with internet addiction ( $r = .55$ ,  $p < .001$ ). However, the relationship between avoidance coping and internet addiction was not statistically significant ( $r = .08$ ,  $p > .05$ ). The findings further demonstrated a positive and significant relationship between distress tolerance and emotion-focused coping strategies ( $r = .61$ ,  $p < .001$ ), whereas the associations between distress tolerance and both problem-focused coping and avoidance coping were not significant.

To evaluate the fit of the proposed model, several fit indices were examined, including the chi-square to degrees of freedom ratio ( $\chi^2/df$ ), Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), and Root Mean Square Error of Approximation (RMSEA).

**Table 3. Fit Indices of the Final Model**

| Fit Index   | Value |
|-------------|-------|
| $\chi^2$    | 4.51  |
| df          | 3     |
| $\chi^2/df$ | 1.50  |
| CFI         | 1.00  |
| GFI         | 0.99  |
| AGFI        | 0.98  |
| RMSEA       | 0.03  |

The results presented in Table 3 indicate that the final model demonstrated a satisfactory fit to the data. The  $\chi^2/df$  ratio was 1.50, which was below the recommended threshold of 3. Additionally, the values of CFI, GFI, and AGFI were close to 1.00, and the RMSEA value was .03, indicating excellent model fit. Therefore, the final modified model was considered acceptable for interpreting the structural relationships among the variables.

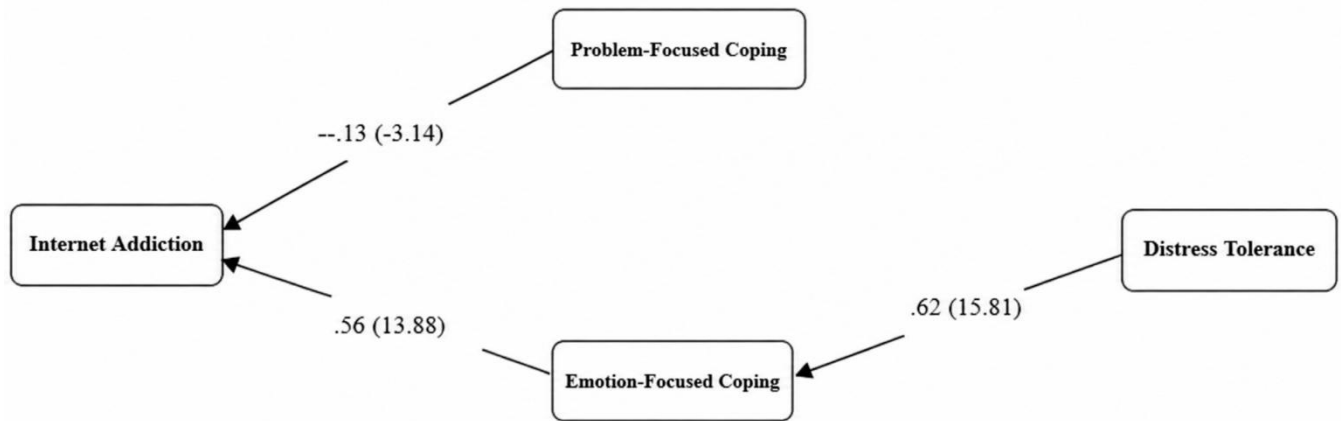
**Table 4. Direct, Indirect, and Total Effects in the Final Path Model**

| Paths                                       | Direct Effect | Indirect Effect | Total Effect | t-value |
|---------------------------------------------|---------------|-----------------|--------------|---------|
| Distress Tolerance → Internet Addiction     | —             | .34             | .34          | —       |
| Emotion-Focused Coping → Internet Addiction | .56           | —               | .56          | 13.88   |
| Problem-Focused Coping → Internet Addiction | -.13          | —               | -.13         | -3.14   |
| Distress Tolerance → Emotion-Focused Coping | .62           | —               | .62          | 15.81   |

The results of the path analysis demonstrated that distress tolerance had no direct effect on internet addiction; however, it exerted a significant indirect effect through emotion-focused coping strategies ( $\beta = .34$ ). Moreover, emotion-focused coping strategies had a positive, strong, and statistically significant effect on internet addiction ( $\beta = .56$ ,  $t = 13.88$ ,  $p < .05$ ). Problem-focused coping strategies showed a negative but



significant effect on internet addiction ( $\beta = -.13$ ,  $t = -3.14$ ,  $p < .05$ ). In addition, distress tolerance had a positive and significant effect on emotion-focused coping strategies ( $\beta = .62$ ,  $t = 15.81$ ,  $p < .05$ ). Overall, the findings indicated that among the coping strategies examined as mediating variables, only emotion-focused coping strategies played a significant mediating role in the relationship between distress tolerance and internet addiction.



**Figure 1. Final Path Model of the Relationships Among Distress Tolerance, Coping Strategies, and Internet Addiction**

## Discussion and Conclusion

The present study aimed to predict internet addiction based on distress tolerance with the mediating role of coping strategies among university students. The findings showed that distress tolerance had a positive and significant relationship with internet addiction. Although this direction may appear counterintuitive at first, it can be interpreted in light of the scoring structure of distress tolerance measures and the conceptual overlap between distress-related absorption, negative emotional appraisal, and maladaptive attempts to regulate discomfort. In this sense, higher scores may reflect greater distress-related difficulty, emotional absorption, and reliance on maladaptive regulation, which can increase vulnerability to excessive internet use. This finding is consistent with evidence indicating that distress intolerance and difficulty tolerating negative affect are associated with problematic internet use through coping motives and frustration of psychological needs (21). It also aligns with longitudinal evidence showing that distress tolerance is meaningfully connected to problematic internet use when avoidance and emotion-focused coping patterns are considered as explanatory mechanisms (22). More broadly, the result supports studies suggesting that problematic technology use is often rooted in emotional dysregulation rather than merely in the frequency of internet access (2, 19).

The significant positive association between distress tolerance and internet addiction can also be explained through the affect-regulation model of behavioral addiction. University students who experience distress as intrusive, absorbing, or difficult to regulate may use online environments as immediately available mechanisms for emotional relief, distraction, reassurance, or escape. In this process, internet use becomes negatively reinforced because it temporarily reduces unpleasant internal states. Previous studies have reported that psychological distress, anxiety, depression, and stress are consistently related to

problematic internet use and related digital behaviors among adolescents and young adults (3, 16, 17). Likewise, studies on problematic smartphone use, social media addiction, and gaming disorder show that emotional discomfort, interpersonal distress, and maladaptive cognitive-emotional processes can intensify reliance on digital platforms (11, 12, 14). Therefore, the present finding strengthens the view that internet addiction should be understood as a maladaptive self-regulation pattern emerging from the interaction between affective vulnerability and accessible digital reinforcement.

The results also demonstrated that problem-focused coping had a negative and significant relationship with internet addiction. This finding indicates that students who more frequently use active, goal-directed, and solution-oriented coping strategies are less likely to show internet addiction symptoms. Problem-focused coping may reduce internet addiction by directing attention toward stressor modification rather than emotional escape. When students attempt to solve academic, interpersonal, or personal problems through planning, information seeking, effort regulation, and direct action, they may have less need to rely on online activity as a substitute coping mechanism. This interpretation is consistent with evidence showing that self-control, psychological flexibility, and adaptive regulation reduce vulnerability to problematic digital behaviors (15, 23). It is also compatible with findings indicating that dysregulation and low self-esteem contribute to problematic social network site use, whereas stronger regulatory capacities may serve as protective resources (20). Thus, problem-focused coping appears to function as a protective factor by reducing the emotional dependence on internet-based distraction.

In contrast, emotion-focused coping had a positive and significant relationship with internet addiction and emerged as the key mediating variable in the final path model. This finding suggests that students who respond to distress primarily through emotional regulation attempts, especially when these attempts are passive, ruminative, or relief-oriented, are more vulnerable to internet addiction. Emotion-focused coping may become maladaptive when it does not involve constructive emotional processing but instead leads to temporary mood management through online engagement. Prior studies support this mechanism by showing that cognitive emotion regulation strategies mediate the relationship between depressive symptoms and problematic smartphone use (12). Similarly, emotional self-regulation has been shown to explain the relationship between coping resources and internet misuse, indicating that the quality of emotional regulation is central to digital behavioral outcomes (29). The present findings also align with evidence that avoidance and emotion-focused coping mediate the relationship between distress tolerance and problematic internet use in adolescents (22).

The mediating role of emotion-focused coping is one of the central findings of this study. Path analysis showed that distress tolerance influenced internet addiction indirectly through emotion-focused coping strategies. This means that distress-related vulnerability alone did not explain internet addiction directly in the final model; rather, the way students coped with distress determined whether distress tolerance was translated into internet addiction symptoms. This result is consistent with studies emphasizing that coping motives are a pathway through which distress intolerance increases problematic internet use (21). It also supports research on gaming disorder and problematic online gaming, where coping mechanisms, avoidance coping, and escape motives have been identified as mechanisms connecting psychiatric symptoms and digital addiction (10, 26). Therefore, the present study contributes to the literature by showing that coping strategies

are not secondary variables but active psychological mechanisms shaping the relationship between distress tolerance and addictive internet use.

The finding that avoidance coping did not show a significant relationship with internet addiction in the reported results requires careful interpretation. Although many studies associate avoidance and escape motives with problematic online behaviors, the present result suggests that avoidance coping may not always independently predict general internet addiction when emotion-focused coping is included in the model. One possible explanation is that avoidance-related tendencies may overlap with emotion-focused coping in this sample, such that the emotional component captured the more powerful variance associated with internet addiction. Another possibility is that avoidance coping may be more strongly related to specific digital behaviors, such as online gaming, social media overuse, or smartphone addiction, than to general internet addiction. Prior reviews have emphasized the role of avoidance coping and escape motives in problematic online gaming (10), while other studies have shown that intolerance of uncertainty and uncertainty-related distress predict problematic social media or smartphone use through more complex mediation pathways (18, 30). Hence, the nonsignificant role of avoidance coping in this study does not negate its theoretical relevance but suggests that its effect may depend on the form of online behavior and the presence of other coping variables.

The final model also indicated that distress tolerance had a strong positive effect on emotion-focused coping. This finding is theoretically meaningful because it suggests that students who experience distress as more salient or difficult to manage are more likely to rely on emotion-focused responses. When individuals are unable to remain engaged with discomfort, they may prioritize emotional relief over problem resolution. Over time, this tendency may increase the appeal of internet use as a rapid and low-effort means of emotional regulation. Similar patterns have been reported in studies linking psychological distress to internet addiction among college students (17), as well as in research showing that family and school environments mediate the association between depression, stress, anxiety, and internet addiction among adolescents (3). Furthermore, evidence regarding psychological flexibility, distress tolerance, and stress in addictive behaviors supports the interpretation that weaker capacity to tolerate or flexibly respond to distress increases reliance on maladaptive coping patterns (24). Thus, the present result supports a sequential model in which distress-related vulnerability increases emotion-focused coping, which in turn increases internet addiction.

These findings can also be situated within broader research on problematic digital behavior and affective-cognitive vulnerability. Studies have shown that fear of missing out, maladaptive metacognitions, optimism, insecure attachment, mentalization deficits, alexithymia, dissociation, and intolerance of uncertainty are associated with problematic smartphone or social media use (6, 13, 31, 33). Although these constructs differ from distress tolerance and coping, they share a common psychological core: difficulty managing internal uncertainty, emotional discomfort, interpersonal insecurity, or self-regulatory demands. The present findings therefore support an integrative view in which internet addiction develops when students experience internal distress and rely on maladaptive regulation strategies rather than adaptive coping. This interpretation is also consistent with evidence that social anxiety mediates the relationship between victimization experiences and internet addiction among adolescents (4), and that perfectionism, happiness-

related dissatisfaction, substance use, and internet addiction can be interconnected through maladaptive efforts to manage emotional and self-evaluative distress (34).

The findings further correspond with research showing that problematic internet-related behaviors are heterogeneous but share common psychological pathways. Cyberchondria, compulsive online shopping, problematic gaming, problematic smartphone use, and social media addiction may differ in behavioral content, but many are reinforced by distress reduction, uncertainty management, stimulation seeking, or emotional escape (1, 7, 8). For example, sensation seeking may contribute to adolescent internet addiction through mediating and moderating mechanisms (35), while boredom has been identified as a relevant factor in problematic technology use because online environments provide immediate stimulation (36). In the present study, emotion-focused coping may similarly reflect a motivational pathway in which the internet becomes a convenient means for mood modification and relief. This explanation is compatible with evidence that addictive behaviors among youth in the digital age are shaped by psychological, developmental, and contextual factors rather than by technology exposure alone (2).

Overall, the confirmed model suggests that emotion-focused coping is the principal mediating mechanism linking distress tolerance to internet addiction, whereas problem-focused coping has a weaker but protective direct effect. These findings clarify that interventions should not only aim to reduce internet use but should also target the emotional and coping processes that maintain problematic use. Students may benefit from training in distress tolerance, adaptive emotion regulation, problem-solving skills, cognitive reappraisal, and self-control. This is consistent with studies showing that coping, social support, self-control, and psychological flexibility are important predictors or mediators in problematic technology use and related behaviors (9, 23, 25). Moreover, research on adolescent emotion dysregulation and problematic technology use emphasizes that improving emotional regulation capacities may reduce vulnerability to compulsive online behaviors (19). Therefore, the present study extends previous findings by providing empirical support for a path model in which distress tolerance shapes internet addiction through emotion-focused coping.

The present study had several limitations. First, the cross-sectional and correlational design prevents causal conclusions about the relationships among distress tolerance, coping strategies, and internet addiction. Second, the use of convenience sampling from one university limits the generalizability of the findings to students in other universities, regions, age groups, or educational contexts. Third, all variables were measured using self-report questionnaires, which may be affected by social desirability, response bias, inaccurate self-perception, or temporary emotional states at the time of completion. Fourth, the study examined general internet addiction rather than specific forms of problematic digital behavior such as social media addiction, gaming disorder, smartphone addiction, or cyberchondria. Fifth, although the model included coping strategies as mediators, it did not include other potentially relevant variables such as depression, anxiety, self-control, emotion dysregulation, perceived social support, academic stress, attachment style, or family environment.

Future research should use longitudinal and experimental designs to clarify the temporal and causal pathways among distress tolerance, coping strategies, and internet addiction. Researchers are encouraged to test similar mediation models in diverse student populations and across different cultural, educational, and age groups. It is also recommended that future studies distinguish between different types of problematic digital behavior, including problematic smartphone use, social media addiction, online gaming

disorder, and compulsive online information seeking, because each may have different psychological predictors. Future research may also examine more comprehensive models by adding variables such as emotion dysregulation, self-control, intolerance of uncertainty, social anxiety, academic burnout, family functioning, and perceived social support. In addition, mixed-methods studies could provide deeper insight into students' subjective motives for internet use and the specific emotional contexts in which excessive online behavior occurs.

From a practical perspective, universities and counseling centers should design prevention and intervention programs that focus on strengthening adaptive coping and distress-management skills rather than merely warning students about excessive internet use. Workshops on problem-focused coping, emotional awareness, cognitive reappraisal, stress management, and behavioral self-regulation may help students replace internet-based emotional escape with healthier strategies. Screening programs can also identify students who rely heavily on emotion-focused or passive coping and provide early psychological support before internet use becomes functionally impairing. Educational institutions should integrate psychoeducational modules into student support services, especially for first-year students who may face higher adjustment stress. Finally, counselors, educators, and families should be trained to recognize that problematic internet use often reflects underlying emotional distress and maladaptive coping patterns, so effective intervention requires attention to both digital habits and psychological regulation skills.

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### **Authors' Contributions**

All authors equally contributed to this study.

### **Declaration of Interest**

The authors of this article declared no conflict of interest.

### **Ethical Considerations**

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

### **Transparency of Data**

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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