Rahman Institute of Higher Education

Journal of Modern Psychology

Development and Psychometric Validation of the Emotional Experience of Internet Shutdown Scale (EEISS) in Iranian University Students

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10.22034/jmp.2026.590196.1178
Spring 2026, Volume 6, Issue 2, Pages 55 - 70

Abstract

Objective*: The emotional experience of internet shutdown may increase psychological distress and contribute to maladaptive responses. This study aimed to develop and psychometrically evaluate the Emotional Experience of Internet Shutdown Scale (EEISS) among Iranian university students during the 2025–2026 academic year.*

Methods*: This scale-development study used a descriptive–analytical survey design with correlational psychometric analyses. Students of Payame Noor University of Yazd (N = 420) were recruited Convenience Sampling. Data were collected using the researcher-developed EEISS, the Wartime Anxiety Scale to assess convergent validity, and Snyder's Hope Scale () to examine divergent validity. Exploratory and confirmatory factor analyses and Pearson correlations were conducted in SPSS 26 and AMOS 24.*

Results*: EFA showed that the EEISS consists of 10 items loading on three latent factors, jointly accounting for 80.967% of the total variance. CFA further supported the satisfactory fit of the three-factor model (RMSEA = 0.043, CFI = 0.991, GFI = 0.976). Convergent validity was evidenced by a positive, significant correlation with war anxiety (r = 0.275), whereas divergent validity was supported by a negative, significant correlation with hope (r = −0.331). The overall reliability of the scale, as indicated by Cronbach's alpha (α = 0.875), reflected desirable internal consistency.*

Conclusion*: Overall, these findings suggest that the EEISS possesses sound psychometric properties and can be employed as a valid and reliable instrument for the targeted assessment of the emotional experience of internet shutdown among university students.*

Keywords*: Emotion; Internet; Psychometrics; University students; War*

Article Info: Received date 05 July 2026 Revise date 28 July 2026 Accepted date 27 Aug. 2026

Citation: Shomali Ahmadabadi, M; Barkhordari Ahmadabadi, A. (2026). Development and Psychometric Validation of the Emotional Experience of Internet Shutdown Scale (EEISS) in Iranian University Students. *Journal of Modern Psychology, 6(2)*, 55-70. https://doi.org/ 10.22034/jmp. 2026.590196.1178

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1. Introduction

In recent decades, the internet has shifted from a facilitating technology to an essential infrastructure for individual and social functioning. At the micro level, academic, occupational, communicative, and leisure activities increasingly depend on online platforms; at the macro level, economic, managerial, and informational systems are deeply integrated with digital networks (Afari et al., 2023). Within this context, large-scale internet shutdowns and severe access restrictions can no longer be treated as purely technical interruptions. When they co-occur with security-related uncertainty or threat, they may function as structural stressors with nontrivial psychological consequences (Lian et al., 2023).

Internet shutdowns and major access restrictions have been documented during social unrest, security incidents, and armed conflict (Grogan, 2020; De Gregorio & Stremlau, 2020). Such periods are often characterized by uncertainty, threat appraisal, disruption of family and peer contact, weakened support networks, and reduced access to timely information. These conditions have been associated with elevated depression, anxiety, posttraumatic stress symptoms, and broader crisis-related distress (Zhang & Li, 2025). In threat-related contexts, exposure to threatening cues, crisis news, and rumor-based information has likewise been linked to multidimensional wartime anxiety and psychological strain (Shomali & Barkhordari, 2025; Măirean et al., 2025; Rajkumar et al., 2025). Across this literature, the internet occupies a dual position: it is a primary channel for information seeking, emotion regulation, and social support, yet it is also a resource that may be restricted under crisis-management policies (Grogan, 2020; Swart, 2023). Despite growing attention to digital life under threat, the psychological meaning of losing internet access itself—rather than problematic use under conditions of availability—remains insufficiently specified.

Iran provides a particularly relevant setting for examining this problem. Recurrent disruptions and shutdowns have restricted users' access during periods marked by security concerns and perceived regional threat. For university students, the consequences extend well beyond temporary inconvenience. Online connectivity supports academic continuity, access to scientific resources, rapid uncertainty reduction, and maintenance of social ties. When shutdowns occur without adequate alternatives, students may lose a central channel for information and communication precisely when reliable updates and contact with support networks are most needed (Dinç et al., 2025; Shapiro et al., 2026). The conjunction of suddenness, low controllability, threat, and informational vacuum may intensify negative affective states such as anxiety, anger, helplessness, and hopelessness (Deng et al., 2025; Yavetz et al., 2025; Sarzhanova & Nurgabdeshov, 2025). Critically, much research on wartime anxiety and crisis media use presupposes continued connectivity and therefore does not directly conceptualize infrastructural disconnection as a distinct stressor.

A robust account of internet shutdown can be grounded in several established psychological frameworks. Conservation of Resources theory views stress as the actual or threatened loss of valued resources (Hobfoll et al., 2018); for students, internet access is such a resource because it supports information acquisition, communication, and goal pursuit. The transactional model of stress and coping further proposes that emotions follow appraisals of threat and controllability (Folkman, 2020). Compulsory disconnection—especially under security-related

ambiguity—may therefore be appraised as an uncontrollable threat and elicit anxiety, anger, and helplessness. Media System Dependency theory adds that reliance on media increases in uncertain environments (Sachu et al., 2025); when this channel is blocked, informational deprivation and distress intensify. Finally, the need-to-belong and uses-and-gratifications perspectives imply that thwarted contact and frustrated needs for information, companionship, and coping heighten negative affect (Baumeister & Leary, 1995; Katz et al., 1973). Together, these frameworks frame internet shutdown as a psychologically meaningful event involving resource loss, threat appraisal, informational deprivation, and social disconnection.

Integrating these perspectives, the emotional experience of internet shutdown can be defined as a distinct, multidimensional psychological construct. It refers to the affective reactions and emotional appraisals that individuals experience in response to the sudden, compulsory loss or severe disruption of internet access. Conceptually, the construct reflects perceived resource loss, threat appraisal, informational deprivation, and interrupted social connection. Phenotypically, it is expected to encompass interrelated responses such as anxiety, anger, helplessness, hopelessness, and worry about obtaining information or maintaining contact with significant others. This definition positions internet shutdown not merely as a technical outage, but as a psychologically meaningful event at the intersection of stress psychology, media psychology, and social relatedness.

The construct is theoretically adjacent to, yet distinguishable from, existing digital-behavior constructs. Internet addiction, problematic smartphone use, and nomophobia primarily concern excessive engagement, dependence, or distress related to separation from devices under ordinary conditions of service availability (Young, 1999; Kwon et al., 2013; Yildirim & Correia, 2015). By contrast, the emotional experience of internet shutdown concerns affective responses to forced infrastructural deprivation and loss of access, particularly under crisis conditions. Accordingly, measures of addiction or nomophobia cannot be assumed to capture the same latent phenomenon.

Given this conceptualization, measurement becomes central. Available instruments in internet and media psychology mainly assess media consumption, dependence, or addiction rather than emotional responses to compulsory service loss. Mahmoudian et al. (2015) validated an 11-item media consumption scale for internet and domestic and foreign media (α = .63–.75). Khajeahmadi et al. (2017) developed a 24-item Social Networks Addiction Questionnaire with three subscales and acceptable psychometric properties (α = .68–.91). The Nomophobia Questionnaire assesses fear and distress related to lack of mobile-phone access rather than internet shutdown as such, and has shown strong reliability in Persian validation work (Alizadeh et al., 2021; Yildirim & Correia, 2015). Sevari, (2014), smartphone dependency scale and Young (1999) Internet Addiction Test likewise target dependent or addictive patterns of use, with Persian evidence of acceptable validity and reliability (Alavi et al., 2010). The Smartphone Addiction Scale and its short form (SAS-SV; Kwon et al., 2013), also standardized in Iran, similarly focus on addiction risk rather than affective reactions to service loss (Seyedi Khalilabad & Hosseini, 2025). Related work on online fear of missing out and digital disconnection likewise does not provide a dedicated operationalization of shutdown-related emotional experience (Wegmann et al., 2017; Swart, 2023).

Collectively, these instruments offer valuable indicators of use intensity, dependence, addiction risk, and phone-separation anxiety. However, they neither define nor operationalize the emotional experience of internet shutdown as an independent construct. They therefore leave unmeasured the specific configuration of appraisal-based affective responses—especially anxiety, anger, helplessness, and information- and contact-related worry—that may follow sudden and compulsory loss of internet infrastructure. To the best of our knowledge, no psychometrically validated instrument explicitly designed to assess this construct was identified in the available literature. This constitutes a clear conceptual and psychometric gap.

In the Iranian higher-education context, addressing this gap is consequential for research, university counseling, and educational mental-health planning. Even if a superficially similar measure were available in another cultural setting, simple translation would likely be insufficient because shutdown-related emotional responses are embedded in local patterns of media use, academic dependence on online infrastructures, and crisis-related uncertainty. An indigenous, theory-driven instrument can more sensitively capture both the intensity and the qualitative profile of this experience among students and can support research on its correlates, including wartime anxiety, depression, emotion regulation, and academic adjustment (Shomali & Barkhordari, 2025; Lian et al., 2023). It can also provide a basis for norm development, inter-university comparison, and targeted preventive or counseling interventions. Accordingly, the present study aimed to develop and psychometrically validate the Emotional Experience of Internet Shutdown Scale (EEISS) among Iranian university students.

2. Methods

The present investigation was conceived as a scale-development study employing a descriptive–analytical design. Data were obtained through a structured survey and analyzed with correlational procedures to evaluate the psychometric properties of the newly constructed instrument. The applied aim was to design, develop, and validate the Emotional Experience of Internet Shutdown Scale (EEISS) among students of Payame Noor University of Yazd during the 2024–2025 academic year.

2.1.Population and Sample

The statistical population consisted of all undergraduate and postgraduate students enrolled at Payame Noor University of Yazd (approximately 3,700 individuals). In accordance with established guidelines for factor-analytic and structural equation modeling research—recommending 5–20 participants per latent factor and a minimum sample size approaching 300 cases (Hoe, 2008)—a sufficiently large sample was sought to ensure parameter stability and generalizability of the psychometric estimates.

Participants were selected Convenience Sampling sampling. Of 512 submitted responses, 478 satisfied preliminary completeness criteria for student respondents. Following systematic exclusion of incomplete or invalid protocols (e.g., careless, patterned, or inconsistent responding), a final analytic sample of 463 valid cases was retained for the principal psychometric analyses. An independent pilot sample of 238 students had previously been employed for item refinement and preliminary reliability and factor screening (detailed under Procedure).

2.2.Instruments

Emotional Experience of Internet Shutdown Scale (EEISS)

The EEISS is a self-report measure developed in the present study to quantify affective reactions and emotional appraisals elicited by sudden, compulsory loss or severe disruption of internet access. Item generation integrated three complementary sources: (a) systematic review of the literature on digital disconnection, crisis-related media use, and stress- or resource-loss frameworks; (b) in-depth interviews with 14 students (7 women, 7 men) of Payame Noor University of Yazd; and © iterative expert consultation. An initial pool of 16 items was reduced through consolidation of redundant content and expert judgment. Content validity was subsequently examined with Lawshe's Content Validity Ratio (CVR) and the Content Validity Index (CVI) by a five-member specialist panel (see Procedure). After pilot refinement, the final instrument comprised 10 items loading on a single latent factor. Items are rated on a 5-point Likert-type scale ranging from 1 (*not at all true of me*) to 5 (*completely true of me*). Total scores range from 10 to 50; higher scores reflect greater emotional distress linked to internet shutdown. In the pilot/refinement phase, exploratory and confirmatory factor analyses supported a unidimensional solution with acceptable model fit (RMSEA = .049; CFI = .933; GFI = .925) and adequate internal consistency (Cronbach's α = .756). Convergent and divergent validity were examined through associations with wartime anxiety and hope (reported under Procedure and Results as appropriate). Complete development procedures, expert-panel characteristics, and main-sample psychometric indices are presented in the Procedure and Results sections.

Wartime Anxiety Scale

Wartime anxiety was assessed with the Wartime Anxiety Scale developed by Shomali and Barkhordari (2025). This 15-item self-report instrument was constructed for Iranian adults aged 18–60 years to measure anxiety associated with military threat and armed conflict. Development proceeded from grounded-theory qualitative inquiry to quantitative factor analysis and yielded three subscales: Physical (7 items; e.g., palpitations, sleep disturbance), Psychological–cognitive (6 items; e.g., persistent fear, intrusive thoughts), and Behavioral (2 items; e.g., compulsive news checking). Responses are recorded on a 5-point Likert scale from 1 (*never*) to 5 (*always*). Total scores range from 15 to 75, with higher scores indicating more severe wartime anxiety. Original psychometric evidence indicated satisfactory content validity (CVR > .60 for all items; scale-level CVI = .96). Exploratory factor analysis supported the three-factor structure (68.694% of variance explained), and confirmatory factor analysis demonstrated acceptable fit (RMSEA = .079; GFI = .907; CFI = .949). Convergent validity was evidenced by a positive correlation with psychological distress (r = .701); divergent validity by a negative correlation with life satisfaction (r = –.339). Internal consistency for the full scale was high (Cronbach's α = .923). In the present sample, confirmatory factor loadings exceeded .40; fit indices were RMSEA = .069, GFI = .988, and CFI = .993; and Cronbach's α reached .931. The scale served as the convergent-validity criterion for the EEISS (expected moderate positive association).

Snyder Hope Scale

Dispositional hope was measured with Snyder's Hope Scale (1991). The original inventory contains 12 items, of which 8 are scored: four agency items (Items 2, 9, 10, and 12) and four

pathways items (Items 1, 4, 6, and 8). The remaining four items function as fillers/distractors (Items 3, 5, 7, and 11) and are excluded from subscale and total scored hope. Responses employ a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher total and subscale scores indicate higher hope. With eight scored items, total scored hope ranges from 8 to 40. Snyder, 2006 reported Cronbach's α coefficients of approximately .86 (total), .82 (agency), and .84 (pathways). Iranian validation studies have likewise demonstrated satisfactory reliability and expected external correlates: Bijari et al., 2009 reported moderate positive associations with related constructs ($r \approx .50$–$.60$) and negative associations with the Beck Depression Inventory ($r = -.51$ and $-.42$); Zahedbablan et al. (2011) reported a reliability coefficient of .79. In the present sample, confirmatory factor loadings exceeded .40; fit indices were RMSEA = .075, GFI = .935, and CFI = .941; and Cronbach's α was .878. The scale was employed as the divergent-validity criterion for the EEISS (expected moderate negative association).

2.3.Procedure

Initial EEISS items were generated from multiple complementary sources consistent with contemporary scale-development standards. First, the literature on internet disruption during crises, digital disconnection, media-system dependency under uncertainty, and stress-related affective responses was reviewed. Second, in-depth interviews were conducted with 14 students (7 female, 7 male) of Payame Noor University of Yazd to elicit lived emotional reactions to shut down and restriction experiences. Third, academic and applied specialists were consulted during iterative drafting. Domains suggested by theory and qualitative material (anxiety, anger, helplessness/hopelessness, information-related worry, and contact-related distress) were distilled into an initial 16-item pool that was subsequently refined for redundancy and clarity.

Content validity was evaluated by a five-member expert panel comprising specialists in counseling psychology, clinical psychology, educational psychology, and education (faculty members and domain experts with advanced academic training and professional experience in psychological assessment or student mental health). Following Lawshe's (1975) procedure, experts rated each item for necessity (CVR) and relevance (CVI). For a five-expert panel, conventional decision thresholds of CVR ≥ .99 and CVI ≥ .79 were adopted. Obtained indices were CVR = .987, item-level CVI = .872, and scale-level CVI = .941, supporting adequate content validity. Overlapping items were merged or restructured on the basis of expert feedback; items failing necessity criteria were eliminated. The content-validated pool retained 13 items for pilot testing.

A pilot study involving 238 participants examined preliminary internal consistency and factor structure. Item–total statistics and exploratory factor screening guided refinement: items that substantially depressed Cronbach's alpha or displayed factor loadings below .40 were considered for removal in accordance with conventional psychometric practice. The refined instrument advanced to the main study as a 13-item, single-factor self-report scale (scoring described under Instruments). Preliminary fit and reliability estimates from the refinement phase were satisfactory (RMSEA = .049; CFI = .933; GFI = .925; Cronbach's α = .756). Moderate correlations in the expected directions with wartime anxiety ($r = .367$) and hope ($r = -.377$) furnished preliminary convergent and divergent evidence.

Following institutional and ethical approvals, main-study data were collected over a ten-day online administration period. Prospective participants received a virtual briefing that explained study aims, the voluntary nature of participation, and confidentiality safeguards, after which the survey link was provided. The platform was configured to restrict full completion of the battery to eligible student respondents. Ethical safeguards encompassed informed consent, confidentiality of responses, absence of legal or financial risk, the right to withdraw at any time, and congruence of procedures with prevailing cultural and institutional norms. No personally identifying information beyond demographic fields required for sample description was collected for analysis. Of 512 initial responses, 478 passed preliminary screening; after removal of incomplete or invalid protocols, 463 cases constituted the final analytic sample.

All statistical analyses were performed with SPSS 26 and AMOS 24. Descriptive statistics summarized sample demographics and item-level characteristics. Reliability of the EEISS and companion measures was evaluated with Cronbach's alpha and corrected item–total correlations. Construct validity was examined through exploratory factor analysis (sample adequacy assessed via the Kaiser–Meyer–Olkin [KMO] measure and Bartlett's test of sphericity; factor extraction and orthogonal rotation applied) and confirmatory factor analysis (model fit evaluated with RMSEA, CFI, and GFI, among other indices). Convergent validity was tested by Pearson product-moment correlation between EEISS total scores and the Wartime Anxiety Scale (Shomali & Barkhordari, 2025). Divergent validity was tested by Pearson correlation with the Snyder Hope Scale (Snyder,1991). Statistical decisions adhered to conventional significance criteria and established psychometric standards for scale development.

3. Results

Analysis of demographic variables showed that among the 463 participants, 275 (59.4%) were female and 188 (40.6%) were male. The mean age was 23.9 years with a standard deviation of 2.67. The means and standard deviations of the study variables by demographic characteristics are presented in Table 1.

Table 1

Means And Standard Deviations of ***Study Variables (N = 463)***

Variable	Mean	SD	Skewness	Kurtosis
Emotional Experience of Internet Shutdown	33.01	6.33	0.612	-0.259
General Feeling	9.89	2.29	0.112	0.382
Anxiety	13.59	3.42	-0.731	-0.998
Anger	9.54	2.56	-0.458	0.733
Wartime Anxiety	41.89	12.56	0.972	-0.776
Hope	31.48	6.04	-0.113	0.659

The skewness and kurtosis values for all variables fall within the acceptable range of −2 to +2, indicating that the distributions are approximately normal.

To examine the factorability of the correlation matrix for exploratory factor analysis (EFA), the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of

sphericity were conducted. The results for the Emotional Experience of Internet Shutdown Scale are reported in Table 2.

Table 2

Kmo And Bartlett's Test of Sphericity for The Emotional Experience of Internet Shutdown Scale

Index / Test	Value
Kaiser–Meyer–Olkin (KMO)	0.862
Bartlett's test of sphericity	**Value**
Approx. Chi-square	3111.853
Df	45
P	0.001

The KMO value of 0.862 (greater than 0.70) indicates that the sample size is adequate for factor analysis. Bartlett's test of sphericity was significant ($\chi^2 = 3111.853$, df = 45, $p < .001$), showing that the correlation matrix is not an identity matrix and that the data are suitable for factor extraction. In addition, the reproduced correlation matrix and the diagonal of the anti-image correlation matrix (with coefficients above 0.70) indicated that the dataset is factorable and the sample adequacy is acceptable. The total variance explained, eigenvalues, component matrix, and communalities are presented in Table 3.

Table 3

Total variance explained, eigenvalues, and communalities for the Emotional Experience of Internet Shutdown Scale

3A. Initial eigenvalues, variance explained, and sums of squared loadings

Factor	Initial eigenvalues	% of variance	Cumulative %	Extraction sums of squared loadings (Total)	% of variance	Cumulative %	Rotation sums of squared loadings (Total)	% of variance	Cumulative %
1	4.80	48.08	48.08	4.80	48.08	48.08	3.19	31.96	31.96
2	2.05	20.51	68.59	2.05	20.51	68.59	2.49	24.89	56.86
3	1.23	12.37	80.96	1.23	12.37	80.96	2.14	24.10	80.96
4	0.37	3.73	84.70						
5	0.31	3.16	87.86						
6	0.30	3.06	90.92						
7	0.28	2.81	93.74						
8	0.23	2.31	96.05						
9	0.20	2.03	98.09						
10	0.19	1.90	100.00						

3B. *Communalities and rotated factor loadings*

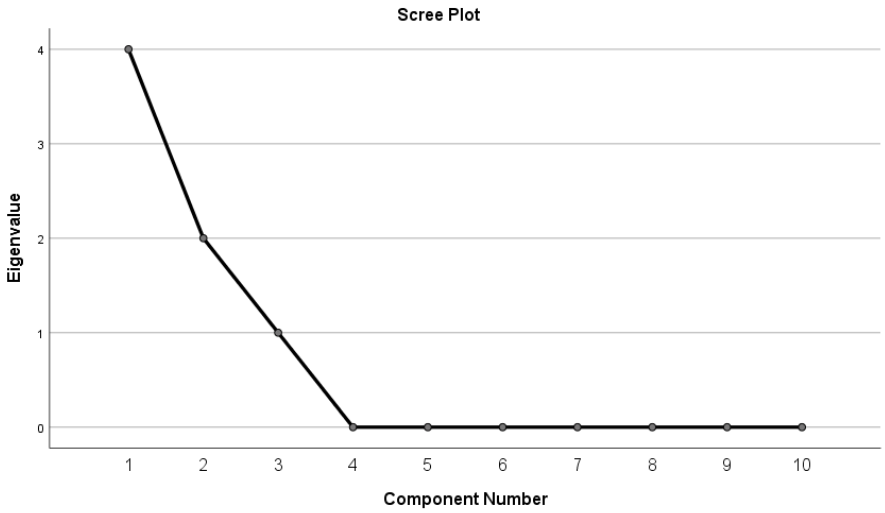
Item	Communality	Rotated factor loading*
1	0.836	0.851
2	0.778	0.841
3	0.796	0.823
4	0.774	0.885
5	0.794	0.868
6	0.848	0.856
7	0.816	0.845
8	0.833	0.891
9	0.816	0.897

10	0.806	0.882

***Note.** In the article, the full rotated component matrix with three factors (General Feeling, Anxiety, Anger) is reported; here the main loadings are shown.

Exploratory factor analysis using principal components and Varimax rotation identified three components with eigenvalues greater than 1, accounting for 80.967% of the total variance, which is satisfactory. The scree plot (Figure 1 in the article) also supported a three-factor solution, indicating that the Emotional Experience of Internet Shutdown Scale consists of three factors.

Figure 1
Scree plot for determining the number of scale factors



The scree plot indicates that the Internet Disconnection Emotional Experience Scale is three-factor. Based on the slope of the curve, the three factors constituting the scale lie above the inflection line, while the remaining factors fall within a narrow and close range. Before conducting the confirmatory factor analysis, Cronbach's alpha for the scale items and the corrected item–total correlations were examined. After assessing Cronbach's alpha for each item using the loop method, it was found that all items contributed appropriately to increasing the overall internal consistency of the test. The descriptive indices and the contribution of each item to the scale's internal consistency are presented in Table 4.

Table 4
Descriptive Indices and Item Contribution to Internal Consistency of The Emotional Experience of Internet Shutdown Scale

	Items – "Which Option Best Describes You In Each Statement?"	Corrected Item–Total Correlation	Cronbach's Alpha If Item Deleted	Factor Loading
1	I feel bad about the internet shutdown.	0.564	0.865	0.792
2	The internet shutdown makes me feel unpleasant.	0.625	0.861	0.846
3	The internet shutdown is a distressing experience for me.	0.625	0.861	0.824
4	The internet shutdown makes me feel worried.	0.560	0.866	0.775
5	When the internet is shut down, I	0.717	0.853	0.889

	Items – "Which Option Best Describes You In Each Statement?"	Corrected Item–Total Correlation	Cronbach's Alpha If Item Deleted	Factor Loading
	become anxious about its consequences.			
6	The internet shutdown creates a sense of insecurity or stress in me.	0.712	0.854	0.844
7	Not having access to the internet makes me feel confused or anxious.	0.733	0.852	0.899
8	The internet shutdown creates deep anger in me.	0.500	0.871	0.883
9	When the internet is shut down, I feel more aggressive.	0.501	0.870	0.851
10	I feel angry toward those who shut down the internet.	0.441	0.875	0.822

All items show adequate corrected item–total correlations (ranging from 0.441 to 0.733, all above the 0.30 criterion), indicating good discrimination. Cronbach's alpha does not increase substantially when any item is deleted, suggesting that all items contribute positively to internal consistency. Factor loadings range from 0.775 to 0.899 and are all above 0.40, which is considered acceptable. Items 1–3 belong to the General Feeling subscale, items 4–7 to the Anxiety subscale, and items 8–10 to the Anger subscale.

Table 5

Correlations between wartime anxiety, hope, and Emotional Experience of Internet Shutdown (convergent and divergent validity

Variable	1	2	3	4	5	6
1. Emotional Experience of Internet Shutdown	–					
2. General Feeling	0.844	–				
3. Anxiety	0.856	0.684	–			
4. Anger	0.753	0.413	0.433	–		
5. Wartime Anxiety	0.289	−0.311	−0.264	−0.379	–	
6. Hope	−0.331	0.289	0.357	0.355	−0.339	–

Note. $p < .001$

Emotional Experience of Internet Shutdown is positively and significantly correlated with wartime anxiety ($r = 0.289$, $p < .001$) and negatively and significantly correlated with hope ($r = -0.331$, $p < .001$). These patterns support the convergent and divergent validity of the scale.

Table 6

Goodness-of-fit indices for the second-order confirmatory factor analysis model

Fit Index	Acceptable Range	Obtained Value
χ^2	–	57.762
Df	–	31
χ^2 / df	< 3	1.863
P	< .05	0.108
RMSEA	< 0.08	0.043
CFI	> 0.90	0.991
GFI	> 0.90	0.976

The fit indices for the second-order CFA model are satisfactory (RMSEA = 0.043, CFI = 0.991, GFI = 0.976, $\chi^2/df = 1.863$). All factor loadings were above 0.40, indicating that the model fits the data well and provides support for the construct validity of the scale. The factor model of the scale is presented in Figure 2.

Figure 2
Factor loadings of the items of the Emotional Experience of Internet Shutdown Scale

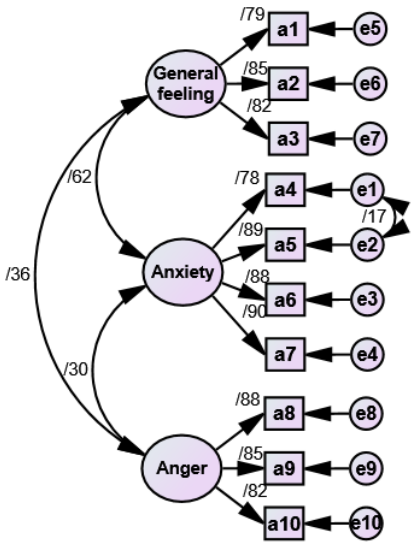


Figure 2 presents the standardized factor loadings of each item of the Emotional Experience of Internet Shutdown Scale in the three-factor model.

Next, the internal consistency of the scale was examined using Cronbach's alpha coefficients. The results are summarized in Table 7.

Table 7
Internal consistency of the Emotional Experience of Internet Shutdown Scale

Variable	Cronbach's Alpha
Emotional Experience of Internet Shutdown (total scale)	0.875
General Feeling	0.860
Anxiety	0.924
Anger	0.888

Based on Table 7, Cronbach's alpha was 0.860 for General Feeling, 0.924 for Anxiety, 0.888 for Anger, and 0.875 for the total scale, indicating satisfactory internal consistency of the Emotional Experience of Internet Shutdown Scale in the present sample.

4. Discussion

The present study aimed to develop and validate the Emotional Experience of Internet Shutdown Scale (EEISS) in a sample of Iranian university students. The findings indicated that the scale has a three-factor structure (General Feeling, Anxiety, Anger) with 10 items. This amount suggests that the scale adequately covers the core dimensions of the emotional experience of internet shutdown and reflects good conceptual coherence

among the items. Fit indices obtained from confirmatory factor analysis also supported the construct validity and good fit of the proposed three-factor model. These results are consistent with previous studies on instruments assessing emotional experiences related to digital media and media use patterns, such as the Media Use Questionnaire (Mahmoudian et al., 2015), Social Network Addiction (Khajeahmadi et al., 2016), Nomophobia (Alizadeh et al., 2021), Smartphone Dependency (Sevari, 2014), Internet Addiction (Young, 1999; Alavi et al., 2010), and Smartphone Addiction Scales (Kwon et al., 2013; Seyedi Khalilabad & Hosseini, 2025), all of which have reported acceptable factor structures and sound psychometric properties. However, a key distinction of the present study is that none of these instruments were specifically designed to assess the "emotional experience of internet shutdown", which underscores the conceptual novelty and necessity of developing the EEISS.

The three-factor structure of the scale is also theoretically defensible. The General Feeling subscale reflects individuals' overall evaluation of their emotional state during internet shutdown. The Anxiety subscale captures cognitive–emotional arousal, worry, and tension in response to internet shutdown or restriction, particularly during collective crises such as war and security threats. The Anger subscale represents hostile reactions, feelings of injustice, and resentment resulting from sudden deprivation of internet access. In contexts where the internet plays a central role in access to information, social support, and managing uncertainty, a sudden shutdown—especially when accompanied by one-sided information flows—can intensify mental preoccupation, catastrophic thinking, and negative affect (general negative feelings, anxiety, and anger; Shapiro et al., 2026). Furthermore, prior dependence on functions such as web surfing, use of artificial intelligence tools, online communication, and online games may contribute to a pattern of distress resembling nomophobia (Alizadeh et al., 2021).

Convergent and divergent validity further complemented the psychometric evaluation of the scale. The positive and significant correlation between emotional experience of internet shutdown and wartime anxiety, in line with previous studies (Lian et al., 2023; Dinç et al., 2025), suggests that deprivation of internet access in threatening contexts activates a cycle of threat rumination and threat-related cue seeking, which increases threat sensitivity and wartime anxiety (Shapiro et al., 2026; Bravo et al., 2026). When individuals rely on the internet to meet their informational, emotional, and support needs, internet shutdown appears to intensify repetitive cognitive engagement with scenarios of threat, loss, insecurity, and catastrophic future expectations. This pattern is associated with reduced cognitive resources and impaired capacity for positive emotion regulation (Shapiro et al., 2026), and can trap the individual in a cycle of mental rumination and constant scanning for danger, rather than adaptive, problem-focused coping. Such a cycle heightens threat sensitivity and exacerbates wartime anxiety (Bravo et al., 2026).

Conversely, the negative and significant association with hope is consistent with the findings of Deng et al., (2025) and Yavetz et al., (2025), indicating that internet shutdown, by undermining sense of agency, intensifying hopelessness, and placing the person in a cognitively passive state, reduces hope for the future. During periods of severe threat,

including military threats, behaviors such as constantly checking media are often used as strategies to reduce worry and restore a sense of control. Given the central role of the internet in providing the needed information, its shutdown can heighten anxiety and lead to cognitive failures such as war-related rumination. In this process, war-related events may be construed as an inescapable and pervasive reality for oneself and one's family. This processing pattern forms the core of hopelessness: distress caused by internet shutdown undermines sense of agency and places the individual in a cognitively passive stance, which in turn diminishes hope (Yavetz et al., 2025).

The results regarding reliability also indicated excellent internal consistency of the scale that fall within the range reported for similar instruments in the domains of media use and technology dependence (Mahmoudian et al., 2015; Khajehahmadi et al., 2016; Alizadeh et al., 2021; Sevari, 2014) and demonstrate that the items coherently tap a single construct – the emotional experience of internet shutdown – rather than a scattered set of reactions. The high internal consistency can be viewed as a reflection of the tight focus of the items on a unified construct: all items were designed to capture emotional experiences that directly stem from the consequences of internet shutdown. This content homogeneity appears to increase inter-item correlations and reduce random response variance. For instruments intended to assess a relatively stable emotional pattern under acute and collective stress (e.g., war), this can be regarded as a strength, indicating that the EEISS measures a relatively coherent emotional construct rather than a heterogeneous group of reactions.

Nevertheless, several limitations should be noted. First, the sample was limited to students at Payame Noor University of Yazd, which restricts the generalizability of the findings to other universities, geographic regions, and cultural groups. Second, the study focused exclusively on university students, and the validity of the scale was not examined among other populations (e.g., school students, employees, or the general population). Future research is recommended to validate the EEISS in larger and more diverse samples in terms of age, gender, field of study, cultural background, and employment status, and to conduct longitudinal and experimental studies to examine the dynamics of emotional experience of internet shutdown and its role in the development of adverse psychological outcomes. Such an approach could provide a stronger basis for designing targeted, evidence-based interventions to address the psychological impact of internet shutdown at both individual and systemic levels.

5. Conclusion

Overall, the findings suggest that the Emotional Experience of Internet Shutdown Scale has a robust factor structure, satisfactory convergent and divergent validity, and high reliability. Therefore, it can be used as a valid and reliable instrument to assess the emotional experience of internet shutdown among Iranian university students. The scale helps fill an important gap in the local literature regarding tools specifically designed to assess emotional responses to internet shutdown. It can be employed in future research, in designing psychological interventions, in monitoring the psychological consequences

of internet shutdown during collective crises, and in educational and policy-related decision-making.

Acknowledgment

The authors would like to thank all the students who participated in this study and took the time to complete the questionnaires.

Conflict of interest

The authors declare that there is no conflict of interest.

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