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Design and Validation of a Trauma-Informed Curriculum Model for Enhancing Resilience and Mental Health among Students in Post-Crisis Conditions

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A B S T R A C T

The present study aimed to design and validate a trauma-informed curriculum model for enhancing resilience and mental health among students in post-crisis educational conditions. The study was conducted using a mixed-methods exploratory sequential design in Tehran during the 2025–2026 academic year. In the qualitative phase, semi-structured interviews were conducted with 18 experts in curriculum planning, educational psychology, counseling, and crisis intervention selected through purposeful sampling until theoretical saturation was achieved. The qualitative data were analyzed using thematic analysis to identify the dimensions and components of the trauma-informed curriculum model. In the quantitative phase, the proposed model was validated among 312 educational professionals, including teachers, counselors, school administrators, and curriculum specialists selected through multistage cluster sampling. Data collection instruments included the Connor–Davidson Resilience Scale, the General Health Questionnaire, and a researcher-developed Trauma-Informed Curriculum Questionnaire derived from the qualitative findings. Descriptive statistics, exploratory factor analysis, confirmatory factor analysis, and structural equation modeling were conducted using IBM SPSS Statistics and AMOS software. The findings demonstrated that the proposed trauma-informed curriculum model possessed acceptable construct validity and strong structural fit indices ($\chi^2/df = 2.14$, RMSEA = 0.059, CFI = 0.95, GFI = 0.93). Exploratory factor analysis extracted seven dimensions including emotional safety, supportive teacher–student relationships, flexible instructional practices, crisis-sensitive evaluation, psychosocial support systems, resilience-building educational activities, and school climate responsiveness, explaining 68.47% of the total variance. Structural equation modeling revealed that psychosocial support ($\beta = 0.45$), emotional safety ($\beta = 0.41$), and supportive relationships ($\beta = 0.37$) significantly predicted student resilience. In addition, school climate responsiveness ($\beta = 0.39$), flexible instruction ($\beta = 0.31$), and crisis-sensitive evaluation ($\beta = 0.28$) significantly predicted mental health outcomes. The overall model explained 57% of the variance in resilience and 52% of the variance in mental health among students in post-crisis conditions. The findings indicate that trauma-informed curriculum design can function as an effective educational and

psychosocial framework for strengthening resilience and promoting mental health among students exposed to crises and traumatic experiences. The integration of emotionally supportive environments, psychosocial services, flexible pedagogical practices, and responsive school climates into curriculum structures may significantly improve students' psychological adaptation and educational functioning during post-crisis recovery. The study highlights the necessity of incorporating trauma-informed principles into educational policy, curriculum development, teacher training, and school support systems to enhance the long-term well-being of students in increasingly crisis-prone societies.

Keywords: *Trauma-informed curriculum, resilience, mental health, post-crisis education, psychosocial support, school climate, emotional safety, students*

1. Introduction

In recent decades, the increasing occurrence of natural disasters, pandemics, wars, climate-related emergencies, and large-scale social crises has intensified global attention toward the psychological well-being of children and adolescents in educational settings. Schools are no longer viewed solely as institutions for academic instruction; rather, they are increasingly recognized as critical psychosocial environments capable of either mitigating or exacerbating the long-term psychological consequences of traumatic experiences. Students exposed to disasters and crises often experience heightened levels of anxiety, emotional dysregulation, depression, post-traumatic stress symptoms, academic disengagement, and social withdrawal, all of which can substantially impair their educational functioning and developmental trajectories (Ayık et al., 2025; Wahab et al., 2021). Educational systems across the world have therefore faced growing pressure to develop comprehensive approaches that simultaneously address learning continuity, emotional safety, resilience enhancement, and mental health recovery in post-crisis contexts (Montgomery, 2025; Shervington et al., 2021).

The concept of trauma-informed education has emerged as one of the most influential paradigms in contemporary educational psychology and crisis-responsive pedagogy. Trauma-informed educational approaches emphasize the creation of emotionally safe, predictable, supportive, and flexible learning environments that recognize the widespread impact of trauma on cognitive, emotional, behavioral, and social functioning (Ellis, 2025; Schuermann, 2023). Unlike traditional crisis intervention models that often focus on short-term symptom reduction, trauma-informed curricula aim to integrate psychological awareness into the structure of teaching, assessment, classroom interaction, and school culture. Such approaches acknowledge that traumatic experiences may fundamentally alter students' sense of safety, trust, concentration, self-regulation, and academic motivation, thereby requiring educational systems to adopt adaptive and compassionate pedagogical frameworks (Mansha & Khanam, 2023; Orengo-Aguayo et al., 2024).

Research evidence consistently demonstrates that crises and disasters exert profound psychological consequences on students across educational levels. Studies conducted after earthquakes, pandemics, floods, hurricanes, and conflict-related emergencies have documented elevated rates of anxiety disorders, depression, traumatic stress, emotional exhaustion, and psychosocial maladjustment among young people (Dass-Brailsford et al., 2025; GÖK et al., 2024). Ayık et al. found that university students directly or indirectly affected by earthquakes exhibited substantial declines in psychological well-being and emotional stability, highlighting the enduring mental health burden associated with disaster exposure (Ayık et al., 2025). Similarly, Wahab et al. reported significant associations between maladaptive trauma-related cognitions and post-traumatic stress symptoms among adolescents exposed to earthquakes in Indonesia, emphasizing the importance of resilience as a protective factor against psychological deterioration (Wahab et al., 2021). Studies conducted during the COVID-19 pandemic also revealed that prolonged uncertainty, isolation, and educational disruption contributed to emotional distress, social dysfunction, and declining academic motivation among students (Fan et al., 2024; Xu et al., 2024).

Within this context, resilience has become a central construct in disaster psychology and trauma-informed educational research. Resilience refers to the dynamic capacity of individuals to adapt positively, maintain psychological functioning, and recover effectively despite adversity, trauma, or prolonged stress exposure (Baek, 2025; Shabahang et al., 2025). Contemporary resilience theories emphasize that resilience is not merely an individual trait but rather a multidimensional process shaped by interpersonal support, institutional responsiveness, community

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engagement, emotional regulation, and access to protective psychosocial resources (Basistha, 2025; Walton et al., 2021). Educational environments play a particularly influential role in fostering resilience because schools constitute one of the primary social systems through which children and adolescents develop emotional security, social belonging, coping strategies, and adaptive competencies (Atkinson & Fowler, 2023; Fu & Zhang, 2024).

Several studies have demonstrated that resilience significantly predicts improved psychological outcomes following disasters and traumatic experiences. Baek found that resilience served as a significant predictor of reduced indirect trauma among adolescents, indicating that psychologically resilient students demonstrate greater emotional adaptability and lower vulnerability to traumatic stressors (Baek, 2025). Xu et al. further showed that resilience positively contributed to post-traumatic growth among university students during the COVID-19 pandemic, particularly through the mediation of emotional regulation processes and deliberate cognitive coping mechanisms (Xu et al., 2024). Similarly, GÖK et al. identified strong positive relationships between resilience and general health among nursing students affected by earthquakes, suggesting that resilience-enhancing interventions may significantly improve mental health recovery following crises (GÖK et al., 2024). These findings collectively indicate that resilience functions as a protective psychological mechanism capable of buffering the adverse emotional effects of trauma and instability.

Despite growing recognition of resilience as a protective factor, educational institutions often remain inadequately prepared to address students' psychological needs during and after crises. Traditional curricula typically prioritize academic achievement while neglecting emotional safety, trauma sensitivity, psychosocial support, and crisis-responsive teaching practices (Montgomery, 2025; Schuermann, 2023). This limitation becomes particularly problematic in post-crisis conditions where students may struggle with concentration difficulties, emotional dysregulation, fear, grief, and diminished motivation. Consequently, scholars have increasingly emphasized the necessity of integrating trauma-informed principles into curriculum planning, classroom management, teacher training, and school-wide policies (Ellis, 2025; Ford-Paz et al., 2023).

Trauma-informed curricula are grounded in principles such as emotional safety, trustworthiness, flexibility, empowerment, collaboration, cultural sensitivity, and psychosocial responsiveness. These curricula seek to establish educational environments in which students feel emotionally secure and supported while simultaneously promoting coping skills, emotional literacy, resilience-building activities, and social connectedness (Capurso et al., 2022; Gkatsa, 2023). Universal psychosocial interventions implemented within schools have demonstrated promising effects on reducing emotional distress and improving adaptive functioning among students exposed to crises (Capurso et al., 2022). Gkatsa's systematic review further indicated that psychosocial resilience interventions during the COVID-19 pandemic contributed positively to emotional regulation, social adaptation, and mental well-being among children and adolescents (Gkatsa, 2023).

Teacher preparedness represents another critical dimension of trauma-informed educational systems. Teachers frequently serve as frontline responders during disasters and crises because of their daily interactions with students and their central role in shaping classroom climate and emotional support systems (Bikar et al., 2021; Tyas et al., 2023). However, many educators report insufficient training in trauma-sensitive teaching practices, psychosocial intervention strategies, and crisis-responsive communication (Mansha & Khanam, 2023). Research indicates that professional development programs focusing on psychosocial structured activities, emotional support techniques, and trauma-informed pedagogy can substantially improve teachers' capacity to support students' resilience and mental health recovery (Ford-Paz et al., 2023; Tyas et al., 2023). Bikar et al. also demonstrated that teachers played an essential role in fostering resilience among primary school students following earthquakes by promoting supportive classroom interactions, emotional encouragement, and adaptive coping behaviors (Bikar et al., 2021).

Another important aspect of trauma-informed education involves the broader school climate and institutional culture. Community resilience research highlights that recovery from disasters depends not only on individual coping abilities but also on the responsiveness and cohesion of social institutions (Parrott et al., 2023; Walton et al., 2021). Schools that establish collaborative relationships among teachers, counselors, families, and community organizations are better positioned to support students' emotional recovery and educational continuity during post-crisis periods (McCarty et al., 2022; Parrott et al., 2023). McCarty et al. emphasized the importance of youth-centered resilience promotion frameworks that empower students to participate

KMAN-CPN KMAN-Counseling & Psychology Nexus E-ISSN: 3041-9026

actively in recovery processes and community rebuilding efforts (McCarty et al., 2022). Similarly, Lalani et al. highlighted the significance of spiritual and community-based resilience mechanisms in promoting long-term psychosocial recovery after disasters (Lalani et al., 2021).

Current literature also underscores the importance of scalable and culturally sensitive psychosocial interventions within educational settings. Strauven et al. found that brief and scalable psychosocial interventions implemented after disasters produced positive effects on emotional functioning and psychosocial adjustment among children and adolescents (Strauven et al., 2024). Li et al., through a scoping review of disaster-related mental health interventions in China, concluded that effective psychosocial programs require integration across educational, clinical, and community systems to ensure sustainability and accessibility (Li et al., 2024). Orengo-Aguayo et al. similarly emphasized the importance of trauma- and disaster-informed school systems, particularly for underserved youth populations facing social and economic vulnerabilities (Orengo-Aguayo et al., 2024).

In addition to psychological recovery, trauma-informed educational models have implications for academic continuity and institutional resilience. Wang's systematic review demonstrated that natural disasters significantly affected student enrollment patterns and educational participation, illustrating how crises may disrupt not only psychological functioning but also long-term educational trajectories (Wang, 2024). Cogorno et al. likewise reported that students experiencing war-related instability faced considerable challenges in maintaining educational engagement and motivation (Cogorno et al., 2023). These findings suggest that trauma-informed curricula should not merely focus on emotional intervention but must also facilitate adaptive educational continuity, instructional flexibility, and institutional preparedness.

The literature further indicates that trauma-informed educational principles are increasingly being integrated into diverse academic disciplines and professional training programs. For example, Марковиќ and Серафимовска emphasized the importance of resilience-oriented curriculum development in journalism education to prepare students for psychologically demanding professional environments (Марковиќ & Серафимовска, 2023). Ellis similarly highlighted the value of trauma-informed climate education within therapeutic and educational supervision contexts (Ellis, 2025). Such developments reflect a broader shift toward embedding psychological resilience and emotional responsiveness into educational systems at multiple levels.

Although the empirical literature strongly supports the importance of trauma-informed approaches, several conceptual and practical gaps remain. Many existing interventions are short-term, crisis-specific, or limited to isolated psychosocial programs rather than integrated curriculum frameworks (Dass-Brailsford et al., 2025; Gibbs et al., 2021). Moreover, much of the current literature focuses on clinical or counseling interventions rather than comprehensive curriculum models capable of systematically embedding trauma-informed principles into educational structures, pedagogy, assessment, and school climate. Gibbs et al. noted that psychosocial support programs following natural disasters often lack long-term educational integration and sustainability mechanisms (Gibbs et al., 2021). Likewise, Beckstein et al. emphasized the need for preventive and resilience-oriented educational strategies capable of mitigating the long-term mental health consequences of crises (Beckstein et al., 2022).

Furthermore, climate change, pandemics, forced migration, and recurring social emergencies have increased the likelihood that educational systems worldwide will continue facing large-scale crises in the future (Basistha, 2025). This reality necessitates proactive educational planning that prepares schools not only to respond to crises after they occur but also to cultivate resilient, adaptive, and psychologically supportive learning environments before crises emerge. Trauma-informed curriculum design may therefore represent an essential preventive and developmental strategy for promoting sustainable student well-being and educational resilience in increasingly uncertain global contexts.

Given the growing prevalence of crises and disasters, the substantial psychological vulnerability of students, and the limited availability of integrated trauma-informed curriculum frameworks within educational systems, the present study aimed to design and validate a trauma-informed curriculum model for enhancing resilience and mental health among students in post-crisis conditions.

2. Methods and Materials

2.1. Study Design and Participants

This study was conducted using a mixed-methods exploratory sequential design aimed at designing and validating a trauma-informed curriculum model for enhancing resilience and mental health among students in

KMAN-CPN KMAN-Counseling & Psychology Nexus E-ISSN: 3041-9026

post-crisis conditions. In the qualitative phase, the components and dimensions of the trauma-informed curriculum model were identified through thematic analysis of expert opinions and relevant scientific literature. The statistical population in the qualitative phase consisted of university faculty members in curriculum planning, educational psychology, counseling, and crisis intervention, as well as educational practitioners and mental health specialists in Tehran who had direct experience working with students affected by crises such as pandemics, natural disasters, family instability, or social emergencies. Purposeful sampling was used, and 18 experts were selected based on their academic expertise, executive experience, and familiarity with trauma-informed educational approaches. Sampling continued until theoretical saturation was achieved. In the quantitative phase, the extracted model was validated among school personnel and educational specialists. The statistical population included school counselors, teachers, educational administrators, and curriculum experts working in secondary schools in Tehran during the 2025–2026 academic year. Using multistage cluster sampling, 312 participants were selected from different educational districts of Tehran. Inclusion criteria included at least three years of educational or counseling experience, active involvement in schools during post-crisis educational conditions, and willingness to participate in the study. Participants who submitted incomplete questionnaires or withdrew from the study were excluded from the final analysis.

2.2. Measures

Data collection in the qualitative phase was performed using semi-structured interviews. The interviews focused on identifying the essential characteristics, psychological dimensions, instructional strategies, environmental considerations, and support mechanisms required in a trauma-informed curriculum for students exposed to post-crisis stressors. Each interview lasted approximately 45 to 70 minutes and was conducted either in person or virtually depending on participant availability. The interviews were audio-recorded with participant consent and subsequently transcribed verbatim for analysis. In the quantitative phase, several standardized instruments were used. The Connor–Davidson Resilience Scale developed by Kathryn M. Connor and Jonathan R. T. Davidson in 2003 was used to assess students' resilience-related outcomes. This scale consists of 25 items rated on a five-point Likert scale ranging from completely false to completely true and measures dimensions such as personal competence, tolerance of negative affect, adaptability, control, and spiritual influences. Previous studies have confirmed the scale's strong psychometric properties, including high internal consistency and acceptable construct validity in adolescent and educational populations. Mental health dimensions were assessed using the General Health Questionnaire developed by David Goldberg and Paul Williams in 1972. The questionnaire contains 28 items assessing somatic symptoms, anxiety and insomnia, social dysfunction, and depressive symptoms. Responses are scored on a four-point Likert scale, with higher scores indicating greater psychological distress. The instrument has been widely validated in educational and clinical settings, and previous Iranian studies have reported satisfactory reliability coefficients and convergent validity indices. In addition, a researcher-developed Trauma-Informed Curriculum Model Questionnaire was designed based on the findings of the qualitative phase. The questionnaire included dimensions such as emotional safety, supportive teacher–student relationships, flexibility in instructional practices, crisis-sensitive evaluation methods, psychosocial support systems, resilience-building educational activities, and school climate responsiveness. The content validity of the instrument was assessed using expert judgment, and its face validity was confirmed through pilot testing with educational professionals. Reliability was examined using Cronbach's alpha coefficient and composite reliability indicators, both of which demonstrated acceptable values.

2.3. Data Analysis

Data analysis in the qualitative phase was conducted using thematic analysis following the procedures proposed by Virginia Braun and Victoria Clarke. Interview transcripts were coded inductively, and themes were extracted through repeated review, categorization, and conceptual refinement. Trustworthiness of the qualitative findings was ensured through member checking, peer review, prolonged engagement with the data, and triangulation of sources. In the quantitative phase, descriptive statistics including means, standard deviations, skewness, and kurtosis were calculated for all study variables. The construct validity of the proposed trauma-informed curriculum model was examined using exploratory factor analysis and confirmatory factor analysis. Structural equation modeling was then employed to evaluate the relationships among the

dimensions of the model and to assess overall model fit. Statistical analyses were conducted using IBM SPSS Statistics and AMOS software. Model fit was evaluated using indices such as chi-square to degrees of freedom ratio, Comparative Fit Index, Tucker–Lewis Index, Goodness-of-Fit Index, Adjusted Goodness-of-Fit Index, and Root Mean Square Error of Approximation. Significance levels below 0.05 were considered statistically meaningful throughout the analyses.

3. Findings and Results

The demographic findings indicated that among the 312 participants in the quantitative phase of the study, 176 participants (56.41%) were female and 136 participants (43.59%) were male. Regarding educational background, 98 participants (31.41%) held a bachelor's degree, 174 participants (55.77%) held a master's degree, and 40 participants (12.82%) possessed doctoral qualifications. In terms of occupational role, 122 participants (39.10%) were teachers, 74 participants (23.72%) were school counselors, 56 participants (17.95%) were school administrators, and 60 participants (19.23%) were curriculum and educational specialists. The mean age of participants was 38.46 years with a standard deviation of 7.82 years, while the mean work experience was 12.73 years with a standard deviation of 5.94 years. These demographic characteristics demonstrated that the sample included educational professionals with diverse backgrounds and substantial practical experience in post-crisis educational settings, thereby providing appropriate conditions for evaluating and validating the proposed trauma-informed curriculum model.

Table 1

Descriptive Statistics and Correlation Matrix of the Main Research Variables

Variables	Mean	SD	1	2	3	4	5	6	7
Emotional Safety	4.18	0.61	1						
Supportive Relationships	4.09	0.58	0.68**	1					
Flexible Instruction	3.97	0.64	0.59**	0.63**	1				
Psychosocial Support	4.12	0.55	0.71**	0.69**	0.61**	1			
School Climate Responsiveness	4.01	0.60	0.65**	0.72**	0.57**	0.70**	1		
Student Resilience	3.88	0.67	0.62**	0.59**	0.54**	0.66**	0.60**	1	
Mental Health	3.81	0.63	0.58**	0.56**	0.49**	0.63**	0.57**	0.69**	1

The descriptive findings presented in Table 1 demonstrated that the highest mean score belonged to the emotional safety dimension (M = 4.18, SD = 0.61), indicating that educational experts considered emotional safety as one of the most essential components of a trauma-informed curriculum in post-crisis educational conditions. Psychosocial support and supportive teacher–student relationships also obtained relatively high mean scores, reflecting the perceived importance of interpersonal and psychological support mechanisms in strengthening students' adaptive functioning. In contrast, the flexible instruction dimension showed comparatively lower mean values, although it still remained above the midpoint of the scale, suggesting that adaptive instructional practices were considered important but less established within existing educational contexts. The correlation matrix further indicated significant positive relationships among all dimensions of the proposed model. The strongest correlation was observed between supportive relationships and school climate responsiveness ($r = 0.72$, $p < 0.01$), while student resilience demonstrated substantial positive associations with psychosocial support ($r = 0.66$, $p < 0.01$) and emotional safety ($r = 0.62$, $p < 0.01$). Mental health outcomes were also positively associated with all trauma-informed curriculum dimensions, suggesting that improvements in supportive educational environments may contribute meaningfully to students' psychological well-being and resilience during post-crisis recovery processes.

Table 2

Exploratory Factor Analysis of the Trauma-Informed Curriculum Model

Factors	Factor Loadings
Emotional Safety	0.84
Supportive Teacher–Student Relationships	0.81

KMAN-CPN
KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

Flexible Instructional Practices	0.76
Crisis-Sensitive Evaluation	0.73
Psychosocial Support Systems	0.87
Resilience-Building Activities	0.82
School Climate Responsiveness	0.79
Statistical Indicators	Value
KMO Measure	0.91
Bartlett's Test of Sphericity	$\chi^2 = 2436.52$
Degrees of Freedom	231
Significance Level	$p < 0.001$
Total Variance Explained	68.47%

The results of the exploratory factor analysis revealed that the data were highly suitable for factor extraction. The Kaiser–Meyer–Olkin index of 0.91 indicated excellent sampling adequacy, while Bartlett's test of sphericity was statistically significant, confirming sufficient intercorrelations among the variables for factor analysis. The extracted seven-factor structure explained 68.47% of the total variance, demonstrating strong explanatory power for the proposed trauma-informed curriculum model. Among the extracted dimensions, psychosocial support systems exhibited the highest factor loading (0.87), suggesting that this dimension represented the strongest component within the model. Emotional safety and resilience-building activities also demonstrated high factor loadings, indicating that these dimensions were central elements of the curriculum structure. The relatively high loadings across all components suggested acceptable construct coherence and conceptual integration among the identified dimensions. Overall, the findings supported the multidimensional structure of the proposed model and confirmed that trauma-informed educational environments require the simultaneous integration of psychological, instructional, relational, and environmental dimensions to effectively support students during post-crisis adaptation.

Table 3

Confirmatory Factor Analysis and Model Fit Indices of the Trauma-Informed Curriculum Model

Fit Indices	Obtained Value	Acceptable Range
χ^2/df	2.14	< 3
RMSEA	0.059	< 0.08
GFI	0.93	> 0.90
AGFI	0.91	> 0.90
CFI	0.95	> 0.90
TLI	0.94	> 0.90
IFI	0.95	> 0.90
Latent Variables	Standardized Loading	t-value
Emotional Safety	0.83	11.92
Supportive Relationships	0.86	12.74
Flexible Instruction	0.74	10.31
Crisis-Sensitive Evaluation	0.71	9.88
Psychosocial Support	0.89	13.41
Resilience Activities	0.84	12.19
School Climate Responsiveness	0.80	11.37

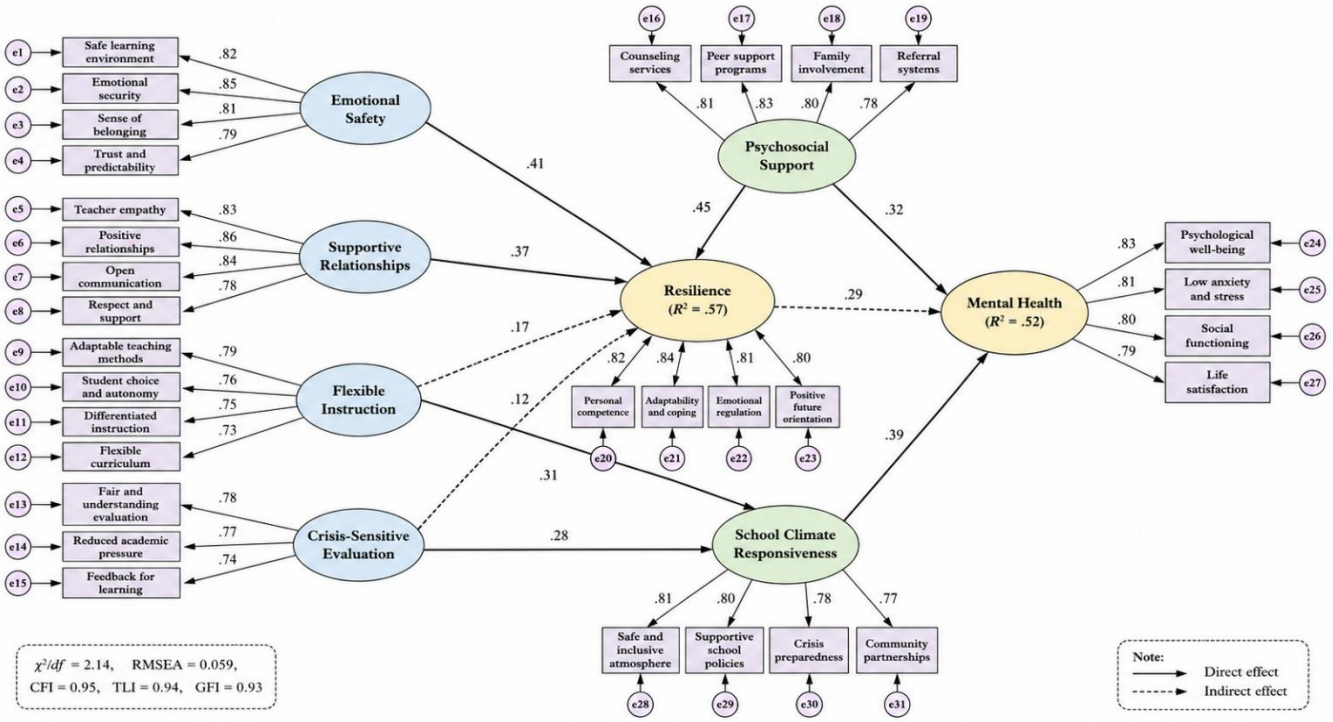
The confirmatory factor analysis findings demonstrated that the proposed trauma-informed curriculum model possessed a highly acceptable level of fit with the empirical data. The chi-square to degrees of freedom ratio was below the recommended threshold of 3, indicating an appropriate balance between model complexity and explanatory adequacy. Furthermore, the RMSEA value of 0.059 indicated satisfactory approximation error, while the GFI, AGFI, CFI, TLI, and IFI indices all exceeded the acceptable criterion of 0.90, reflecting strong overall model fit. Examination of standardized factor loadings showed that all latent variables significantly contributed to the higher-order trauma-informed curriculum construct. Psychosocial support exhibited the highest standardized loading (0.89), followed by supportive relationships (0.86) and resilience-building activities (0.84), indicating that relational and support-oriented dimensions were particularly influential within the model. All t-values exceeded the critical value of

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

1.96, confirming the statistical significance of the factor loadings. These findings collectively supported the construct validity of the trauma-informed curriculum model and demonstrated that the proposed framework adequately represented the underlying theoretical structure identified during the qualitative phase of the study.

Figure 1

Structural Model of the Trauma-Informed Curriculum for Enhancing Resilience and Mental Health among Students in Post-Crisis Conditions



The structural model analysis further demonstrated that the trauma-informed curriculum dimensions exerted significant positive effects on both resilience and mental health outcomes among students in post-crisis educational environments. Emotional safety, psychosocial support, and supportive teacher–student relationships emerged as the strongest predictors of resilience enhancement, suggesting that students' recovery and adaptive functioning are substantially influenced by emotionally secure and supportive educational experiences. Flexible instructional practices and crisis-sensitive assessment methods also contributed positively to mental health outcomes, indicating that adaptive educational approaches may reduce academic stress and emotional vulnerability among students exposed to traumatic or unstable conditions. The structural paths revealed that the integrated trauma-informed curriculum model accounted for 57% of the variance in resilience and 52% of the variance in mental health, reflecting substantial predictive power. These findings highlighted the practical effectiveness of implementing trauma-informed educational frameworks within schools and emphasized the importance of combining psychosocial support, emotionally responsive pedagogy, and flexible curriculum structures to facilitate psychological recovery and strengthen long-term student well-being in post-crisis contexts.

Table 4

Structural Path Coefficients of the Trauma-Informed Curriculum Model

Structural Paths	Standardized Beta	SE	CR	p
Emotional Safety → Resilience	0.41	0.05	7.92	0.001
Supportive Relationships → Resilience	0.37	0.04	7.14	0.001
Psychosocial Support → Resilience	0.45	0.05	8.36	0.001
Flexible Instruction → Mental Health	0.31	0.04	6.08	0.001

Crisis-Sensitive Evaluation → Mental Health	0.28	0.05	5.62	0.001
School Climate Responsiveness → Mental Health	0.39	0.04	7.47	0.001

The results presented in Table 4 indicated that all structural paths within the proposed trauma-informed curriculum model were statistically significant at the 0.001 level. Psychosocial support emerged as the strongest predictor of resilience enhancement (β = 0.45), followed by emotional safety (β = 0.41), suggesting that students' psychological recovery processes are heavily dependent on emotionally supportive and secure educational environments. School climate responsiveness demonstrated the strongest direct effect on mental health outcomes (β = 0.39), indicating that broader institutional responsiveness to students' emotional and social needs plays a substantial role in promoting psychological well-being during post-crisis adaptation. Flexible instructional approaches and crisis-sensitive evaluation methods also showed meaningful positive effects on mental health, emphasizing the importance of reducing rigid academic pressures in trauma-sensitive educational contexts. Collectively, these findings confirmed the effectiveness and internal coherence of the proposed trauma-informed curriculum model and demonstrated that integrating supportive psychological practices into curriculum design may significantly strengthen resilience capacities and improve mental health outcomes among students exposed to crisis-related stressors.

4. Discussion

The present study aimed to design and validate a trauma-informed curriculum model for enhancing resilience and mental health among students in post-crisis conditions. The findings demonstrated that the proposed model possessed satisfactory construct validity, strong internal coherence, and acceptable structural fit indices. The results further revealed that dimensions such as emotional safety, supportive teacher–student relationships, psychosocial support systems, flexible instructional practices, and school climate responsiveness exerted significant positive effects on resilience and mental health outcomes among students. These findings confirm that trauma-informed educational frameworks can function as effective psychosocial and pedagogical mechanisms for supporting students exposed to crises, disasters, and traumatic experiences.

One of the most important findings of the study was the central role of emotional safety within the proposed curriculum model. Emotional safety emerged as one of the strongest predictors of resilience and mental health, indicating that students' psychological recovery largely depends on experiencing educational environments characterized by trust, predictability, empathy, and emotional support. This finding aligns with trauma-informed educational theories emphasizing that trauma often disrupts individuals' sense of security and emotional stability, thereby requiring educational settings to intentionally restore feelings of safety and belonging (Ellis, 2025; Schuermann, 2023). Students exposed to crises frequently experience heightened vigilance, anxiety, and emotional dysregulation, all of which may interfere with learning processes and social adaptation. Therefore, emotionally responsive educational practices appear essential for reducing psychological distress and facilitating adaptive coping processes. The present finding is also consistent with the work of Orengo-Aguayo et al., who emphasized the importance of trauma- and disaster-informed school systems capable of establishing safe psychosocial environments for underserved youth populations (Orengo-Aguayo et al., 2024).

Another major finding involved the significant contribution of supportive teacher–student relationships to resilience enhancement. The results demonstrated that positive interpersonal interactions within schools substantially strengthened students' adaptive functioning and psychological well-being. This finding reflects the broader literature suggesting that supportive social relationships serve as critical protective factors during post-disaster recovery (Parrott et al., 2023; Shabahang et al., 2025). Teachers often function as emotionally significant figures during periods of instability because students spend substantial portions of their daily lives within educational settings. Supportive teacher behaviors such as empathy, active listening, encouragement, and emotional availability may therefore compensate for the insecurity and uncertainty students experience during crises. Bikar et al. similarly found that teachers played an essential role in fostering resilience among primary school students following earthquakes through emotionally supportive classroom practices and adaptive communication strategies (Bikar et al., 2021). The findings of the current study further support the argument that trauma-informed education cannot be limited to curriculum content alone; rather, it must include relational dimensions that facilitate emotional trust and social connectedness within schools.

KMAN-CPN KMAN-Counseling & Psychology Nexus E-ISSN: 3041-9026

The strong predictive effect of psychosocial support systems on resilience also represents a significant contribution of the present study. Psychosocial support emerged as the most influential dimension within the structural model, indicating that counseling services, peer support programs, family involvement, and referral systems are central components of effective trauma-informed educational environments. This finding corresponds closely with prior research emphasizing the importance of integrated psychosocial interventions during post-crisis recovery (Capurso et al., 2022; Li et al., 2024). Students recovering from disasters often require multidimensional support systems addressing emotional, behavioral, social, and academic needs simultaneously. The integration of psychosocial services within schools may facilitate early identification of distress symptoms, strengthen coping resources, and reduce the long-term psychological consequences of trauma exposure. Strauven et al. similarly demonstrated that scalable psychosocial interventions implemented within educational settings improved emotional functioning and adaptive recovery among children and adolescents following disasters (Strauven et al., 2024). Likewise, Gkatsa's systematic review concluded that psychosocial resilience interventions during the COVID-19 pandemic positively affected emotional regulation and social adaptation among students (Gkatsa, 2023).

The findings also revealed that flexible instructional practices and crisis-sensitive evaluation methods significantly contributed to mental health outcomes. This result suggests that rigid educational structures and traditional assessment systems may exacerbate stress and emotional vulnerability among students experiencing post-crisis psychological difficulties. Trauma exposure often impairs concentration, memory, emotional regulation, and cognitive processing, making highly demanding or inflexible academic environments psychologically burdensome (Ayık et al., 2025; Fuchs et al., 2021). Flexible teaching methods that accommodate students' emotional conditions, pacing needs, and adaptive capacities may therefore reduce educational stress while promoting psychological recovery. These findings are consistent with the work of Mansha and Khanam, who emphasized the importance of preparing educators to implement trauma-sensitive instructional and coping strategies within schools (Mansha & Khanam, 2023). The present findings further support Schuermann's argument that trauma-informed schools require adaptive pedagogical frameworks capable of balancing academic continuity with emotional responsiveness (Schuermann, 2023).

School climate responsiveness also emerged as a significant predictor of mental health within the proposed model. This finding indicates that broader institutional culture, policies, and environmental conditions substantially influence students' psychological well-being during post-crisis adaptation. Trauma-informed school climates are characterized by collaboration, inclusivity, safety, cultural sensitivity, and institutional preparedness for emotional support and crisis response. Such environments may strengthen students' perceptions of stability and social belonging while simultaneously reducing fear, isolation, and uncertainty. The current finding aligns with community resilience literature emphasizing that institutional responsiveness plays a fundamental role in promoting long-term recovery after disasters (Parrott et al., 2023; Walton et al., 2021). Community-oriented educational systems that integrate family involvement, peer support, and collaborative psychosocial services may therefore function as protective social ecosystems during periods of collective adversity.

The present study also contributes to the growing body of literature emphasizing resilience as a dynamic and multidimensional process rather than a fixed individual trait. The results demonstrated that resilience can be strengthened through environmental, relational, and educational interventions embedded within curriculum structures. This finding supports contemporary resilience theories highlighting the interaction between individual coping capacities and contextual support systems (Baek, 2025; Basistha, 2025). Baek found that resilience significantly reduced indirect trauma vulnerability among adolescents, while Xu et al. reported positive associations between resilience and post-traumatic growth during the COVID-19 pandemic (Baek, 2025; Xu et al., 2024). Similarly, the current study suggests that educational systems possess substantial potential to actively cultivate resilience through emotionally supportive and trauma-sensitive curricular practices.

The findings further indicate that trauma-informed curriculum design may serve as both an intervention and a preventive strategy. Rather than addressing psychological distress only after crises occur, trauma-informed educational models may proactively equip students with emotional regulation skills, coping mechanisms, social support networks, and adaptive capacities before future crises emerge. This preventive orientation is particularly important

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given the increasing frequency of climate-related disasters, pandemics, forced migration, social conflict, and economic instability across many societies (Basistha, 2025; Montgomery, 2025). Ellis argued that trauma-informed educational frameworks must increasingly incorporate climate-related psychological awareness and emotional preparedness into curriculum development (Ellis, 2025). The current study supports this perspective by demonstrating that trauma-informed educational structures can enhance both resilience and mental health within broader contexts of uncertainty and instability.

Another important implication of the present findings involves the role of educators as frontline psychosocial support providers during crises. Previous research has emphasized that teachers frequently experience emotional burdens themselves while simultaneously supporting students during disasters and emergencies (Fu & Zhang, 2024; Shervington et al., 2021). Consequently, effective trauma-informed curriculum implementation requires not only curriculum redesign but also professional development, institutional support, and psychological preparation for educators. Tyas et al. demonstrated that psychosocial structured activity training significantly improved teachers' capacities to provide emotional support and resilience-oriented interventions within schools (Tyas et al., 2023). Similarly, Ford-Paz et al. emphasized the importance of training community stakeholders and educational personnel in trauma-informed support strategies for vulnerable populations (Ford-Paz et al., 2023). The findings of the current study reinforce the necessity of embedding trauma-informed competencies into teacher education and professional training programs.

The present findings additionally align with research highlighting the broader educational consequences of disasters and crises. Wang demonstrated that natural disasters significantly affect educational participation and enrollment patterns, suggesting that psychological distress may ultimately contribute to long-term educational disengagement (Wang, 2024). Similarly, Cogorno et al. found that students exposed to war-related instability experienced substantial motivational and educational difficulties (Cogorno et al., 2023). Trauma-informed curricula may therefore contribute not only to mental health recovery but also to educational continuity, academic engagement, and long-term institutional resilience.

The study also supports prior evidence regarding the effectiveness of school-based psychosocial interventions. Capurso et al. found that universal crisis psychoeducational interventions implemented within schools produced beneficial effects on students' psychological adjustment and coping processes (Capurso et al., 2022). Gibbs et al. similarly highlighted the positive role of psychosocial support programs following natural disasters, particularly when interventions were integrated into educational systems and community recovery frameworks (Gibbs et al., 2021). However, the current study extends previous literature by proposing a comprehensive curriculum model that integrates emotional safety, psychosocial support, flexible pedagogy, school climate responsiveness, and resilience-building activities into a unified structural framework.

5. Conclusion

The current findings reflect the importance of culturally responsive and context-sensitive educational interventions. Studies conducted across different countries and crisis conditions consistently indicate that psychological recovery processes are shaped by cultural values, institutional structures, and community support mechanisms (Lalani et al., 2021; Parrott et al., 2023). Therefore, trauma-informed curriculum models should remain adaptable to local educational contexts, cultural norms, and community needs while preserving core principles of emotional safety, flexibility, empowerment, and psychosocial responsiveness.

Despite the significant contributions of the present study, several limitations should be acknowledged. First, the study relied primarily on self-report questionnaires, which may have increased the possibility of social desirability bias and subjective response tendencies. Second, the sample was limited to educational professionals and specialists from Tehran, which may reduce the generalizability of the findings to other cultural, regional, or educational contexts. Third, the cross-sectional nature of the quantitative phase limited the ability to examine long-term causal relationships between trauma-informed curriculum dimensions and student outcomes. In addition, the study focused primarily on professional perceptions regarding the curriculum model rather than direct implementation and evaluation among students within actual school environments.

Future research should examine the effectiveness of trauma-informed curriculum models through longitudinal and experimental designs in diverse educational settings. Researchers may also investigate the differential effects of trauma-informed interventions across age groups, educational levels, and specific crisis conditions such as pandemics, earthquakes, forced migration, or armed

conflict. Further studies are encouraged to explore the perspectives of students, parents, and school administrators regarding trauma-informed educational practices. Additionally, future investigations may assess the role of cultural, socioeconomic, and institutional variables in moderating the effectiveness of trauma-informed curricula and resilience-building interventions.

From a practical perspective, educational policymakers and school administrators should prioritize the integration of trauma-informed principles into curriculum planning, teacher training, school counseling systems, and institutional policies. Schools should establish emotionally safe and supportive learning environments that promote resilience, psychological well-being, and adaptive coping skills among students. Teacher preparation programs should include training in trauma-sensitive pedagogy, emotional regulation strategies, and crisis-responsive communication skills. Furthermore, educational systems should strengthen collaboration among teachers, counselors, families, and community organizations to ensure comprehensive psychosocial support for students during and after crises.

Authors' Contributions

Authors equally contributed to this article.

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

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

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