

## Validation of a Crisis Management Education Model Based on Drug Abuse: A Case Study of First-Level Secondary School Principals in Tehran

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### ABSTRACT

**Purpose:** The present study aimed to validate a crisis management education model based on drug abuse among first-level secondary school principals in Tehran and to identify the causal factors, contextual factors, intervening conditions, implementation strategies, and consequences associated with its effective implementation.

**Methods and Materials:** This applied study employed a mixed-method exploratory sequential design using a qualitative–quantitative approach. In the qualitative phase, grounded theory methodology based on Strauss and Corbin’s approach was used to develop the conceptual model. Data were collected through semi-structured interviews with 17 educational experts, including senior administrators, policymakers, and faculty members specializing in educational administration in Tehran. Participants were selected through purposive and snowball sampling until theoretical saturation was achieved. The qualitative findings were analyzed using open, axial, and selective coding. Based on the extracted categories, a researcher-developed questionnaire consisting of 132 indicators across 18 components and four major dimensions (inputs, processes, outputs, and consequences) was designed. In the quantitative phase, the statistical population included 1,900 first-level secondary school principals in Tehran. Using Cochran’s formula and stratified random sampling, 320 participants were selected. Data were analyzed using SPSS 23 and AMOS software through descriptive statistics, Kolmogorov–Smirnov tests, exploratory and confirmatory factor analyses, structural equation modeling, and model fit assessment.

**Findings:** The results demonstrated that all dimensions and components of the proposed model had mean scores above the theoretical midpoint, indicating favorable perceptions of the model elements. The Kolmogorov–Smirnov test confirmed the normality of data distribution. Sampling adequacy was supported by a Kaiser–Meyer–Olkin value of 0.892 and a significant Bartlett’s test of sphericity ( $p < 0.001$ ). Structural equation modeling revealed that all estimated paths were statistically significant ( $p < 0.01$ ), with standardized coefficients ranging from 0.50 to 0.77.

Service quality, organizational justice, responsibility, effective management, organizational resource capacities, organizational agility, and economic capacity development emerged as the strongest indicators of the model. The confirmatory factor analysis demonstrated acceptable model fit (GFI = 0.92, AGFI = 0.93, CFI = 0.96, CMIN/df = 1.88, RMSEA = 0.085), confirming the adequacy and validity of the proposed framework.

**Conclusion:** The findings support the validity of a multidimensional crisis management education model based on drug abuse for secondary schools. The model emphasizes the importance of organizational resources, effective leadership, supportive contextual conditions, strategic interventions, and sustainable outcomes. By integrating causal, contextual, environmental, and strategic dimensions, the model provides a comprehensive framework for enhancing preparedness, prevention, and response capacities within educational institutions confronting substance abuse-related challenges.

**Keywords:** *Crisis Management Education; Drug Abuse; School Administration; Structural Equation Modeling; Educational Leadership; Secondary Schools.*

## 1. Introduction

The rapid growth of substance abuse and drug-related problems has become one of the most significant social, educational, and public health challenges facing contemporary societies. Drug abuse is no longer regarded solely as an individual health issue; rather, it is increasingly recognized as a multidimensional crisis affecting families, educational institutions, communities, and national development systems. Adolescents and young people represent one of the most vulnerable populations exposed to substance use risks, making schools critical settings for prevention, intervention, and crisis management initiatives. Educational systems are therefore expected not only to provide academic instruction but also to establish comprehensive frameworks capable of identifying, preventing, and managing substance-related crises among students and educational stakeholders. The increasing complexity of drug-related challenges has highlighted the need for innovative educational models that integrate crisis management principles with preventive and developmental approaches (Kwagala et al., 2023; Montazeri et al., 2021; Trucco et al., 2022).

In recent years, the concept of crisis management has undergone substantial transformation. Traditional crisis management approaches were primarily reactive, focusing on responding to emergencies after they occurred. Contemporary perspectives, however, emphasize proactive preparedness, resilience building, risk reduction, organizational learning, and capacity development. Within this framework, educational institutions are viewed as dynamic organizations that must develop the competencies

necessary to anticipate, prevent, and effectively respond to crises. This shift is particularly relevant in addressing substance abuse because drug-related crises often emerge gradually and involve complex interactions among individual, social, organizational, and environmental factors. Effective educational programs therefore require systematic models capable of integrating prevention, preparedness, intervention, and recovery processes within a coherent organizational structure (Kilindimo et al., 2023; Olmedo & Muir, 2025; Skundberg-Kletthagen & Fjær, 2025).

Schools occupy a strategic position in substance abuse prevention and crisis management because they maintain continuous contact with adolescents during critical developmental periods. Research has consistently demonstrated that educational environments can either mitigate or exacerbate risk factors associated with substance use. Factors such as school climate, organizational support, educational leadership, communication systems, and stakeholder engagement play important roles in shaping students' behavioral outcomes. Consequently, crisis management education within schools should not be limited to emergency response procedures but should encompass broader organizational processes that promote awareness, resilience, prevention, and coordinated action among educators, students, families, and policymakers (Anderson et al., 2022; Neuenschwander et al., 2025; Tatoğlu & Ayyıldız, 2025).

The literature increasingly emphasizes the importance of organizational capacity in responding effectively to crises. Capacity development includes the availability of financial resources, human resources, technological infrastructure, institutional support, and leadership competencies.

Organizations lacking adequate resources often experience difficulties in implementing preventive interventions and responding effectively to emerging threats. In educational contexts, resource limitations can significantly undermine efforts to establish comprehensive substance abuse prevention and crisis management programs. Studies have demonstrated that organizational effectiveness is strongly associated with the availability of structural supports, administrative resources, and collaborative networks that facilitate coordinated responses to complex challenges (Leventelis et al., 2023; McLaughlan et al., 2025; Montazeri et al., 2021).

Another critical dimension of crisis management education involves understanding the contextual and environmental factors influencing organizational preparedness. Educational institutions operate within broader legal, social, economic, and political environments that shape their capacity to implement preventive programs. Legal regulations, policy frameworks, institutional flexibility, and stakeholder expectations may either facilitate or constrain organizational responses to substance-related crises. Contemporary research suggests that successful crisis management requires an ecological perspective that considers interactions among organizational structures, community resources, policy environments, and individual behaviors. Failure to address these contextual influences often results in fragmented interventions with limited effectiveness (Chaaya et al., 2025; Demirci et al., 2026; Iaali et al., 2024).

The significance of crisis preparedness has become particularly evident during periods of societal disruption and uncertainty. Recent global crises, including pandemics, economic instability, social conflicts, and forced migration, have demonstrated how rapidly environmental stressors can influence behavioral health outcomes and substance use patterns. Studies examining populations exposed to multiple crises have consistently reported increased psychological distress, maladaptive coping mechanisms, and heightened vulnerability to substance use disorders. These findings underscore the necessity of equipping educational organizations with adaptive management strategies capable of responding to evolving challenges while maintaining continuity of educational and preventive services (Hughes et al., 2024; Kowalczyk et al., 2024; Williams et al., 2025).

Substance abuse itself represents a multifaceted phenomenon influenced by psychological, social, familial, and environmental determinants. Research has documented strong associations between substance use disorders and

mental health problems, stress, adverse childhood experiences, social exclusion, and ineffective coping strategies. Adolescents facing significant life stressors often demonstrate greater susceptibility to substance use as a means of managing emotional difficulties. Consequently, crisis management education programs must incorporate preventive strategies aimed at strengthening adaptive coping mechanisms, emotional regulation skills, and psychosocial resilience among students and school personnel (Chamoun et al., 2023; Kwon, 2025; Xiao et al., 2024).

The role of leadership in crisis management has also received increasing scholarly attention. Effective leaders facilitate organizational learning, coordinate resources, foster communication, and establish supportive environments that enhance preparedness and resilience. In educational settings, school administrators serve as central actors responsible for implementing preventive initiatives, coordinating stakeholder participation, and ensuring institutional readiness. Leadership effectiveness is particularly important when addressing substance-related challenges because successful interventions often require collaboration among educators, families, healthcare providers, and community organizations. Strong leadership contributes to organizational agility and enables institutions to respond effectively to emerging threats and changing circumstances (Choflet et al., 2022; Olmedo & Muir, 2025; Skundberg-Kletthagen & Fjær, 2025).

Communication represents another essential component of crisis management education. Effective communication systems facilitate information sharing, stakeholder engagement, coordinated decision-making, and timely intervention. Educational organizations that establish clear communication channels are better positioned to identify risks, mobilize resources, and implement preventive measures. In contrast, communication breakdowns may delay responses and increase the likelihood of adverse outcomes. Recent studies have emphasized the importance of collaborative communication strategies in managing behavioral health crises, highlighting their role in promoting organizational resilience and stakeholder participation (Ding et al., 2023; McLaughlan et al., 2025; Shaikh et al., 2024).

Accountability, transparency, responsibility, and organizational justice are increasingly recognized as foundational elements of effective crisis governance. Organizations that promote ethical leadership and transparent decision-making processes tend to achieve higher levels of stakeholder trust and cooperation. These factors are particularly important in educational settings

where crisis management initiatives depend on active engagement from teachers, parents, students, and external partners. Transparent governance structures facilitate coordinated action and contribute to the sustainability of preventive programs by enhancing legitimacy and organizational commitment (Băcilă et al., 2025; Lofaro et al., 2025; Williams et al., 2025).

Recent research on substance use disorders has further highlighted the importance of comprehensive intervention frameworks that extend beyond treatment-focused approaches. Effective responses require coordinated prevention, education, monitoring, support services, and community engagement strategies. Studies conducted across diverse populations have demonstrated that substance-related problems are often associated with broader social vulnerabilities, including mental health challenges, family stress, socioeconomic disadvantage, and exposure to traumatic experiences. Consequently, educational crisis management models must adopt holistic perspectives capable of addressing both risk factors and protective factors simultaneously (Aboluwarin et al., 2023; Kwagala et al., 2023; Lacoux et al., 2024).

The growing emphasis on resilience provides an important theoretical foundation for crisis management education. Resilience refers to the capacity of individuals and organizations to adapt successfully in the face of adversity. Contemporary resilience frameworks highlight the importance of protective factors such as social support, adaptive coping, organizational flexibility, and resource availability. Educational institutions that cultivate resilience among staff and students are better equipped to manage crises and sustain positive outcomes despite challenging circumstances. Research has consistently demonstrated that resilience-building interventions contribute to improved psychological well-being, organizational effectiveness, and crisis preparedness (Chaaya et al., 2025; Demirci et al., 2026; Kwon, 2025).

Despite growing recognition of the importance of crisis management education in addressing substance abuse, significant gaps remain in the existing literature. Many studies focus on specific intervention programs, treatment approaches, or isolated risk factors rather than developing integrated models capable of guiding organizational practice. Furthermore, most available frameworks have been developed within healthcare or emergency management contexts and may not fully address the unique characteristics of educational environments. There is therefore a need for context-specific models that reflect the realities of school

administration, educational policy, stakeholder relationships, and organizational dynamics. Such models can provide practical guidance for school leaders while contributing to theoretical advancements in crisis management and educational administration (Montazeri et al., 2021; Olmedo & Muir, 2025; Skundberg-Kletthagen & Fjær, 2025).

The Iranian educational system faces particular challenges related to substance abuse prevention and crisis management due to its large student population, diverse sociocultural contexts, and evolving educational priorities. School administrators frequently encounter complex situations requiring coordinated responses to behavioral, psychological, and social issues affecting students. However, the absence of a validated, comprehensive model specifically designed for drug abuse-based crisis management education may limit the effectiveness of existing initiatives. Developing and validating such a model can contribute significantly to educational policy, organizational development, and preventive practice by identifying the critical factors necessary for successful implementation and sustainable outcomes (Anderson et al., 2022; Montazeri et al., 2021; Neuenschwander et al., 2025).

Accordingly, the present study aimed to validate a crisis management education model based on drug abuse among first-level secondary school principals in Tehran and to identify the causal factors, contextual factors, intervening conditions, implementation strategies, and consequences associated with its effective implementation.

## 2. Methods and Materials

This study was conducted using an applied research approach and employed a mixed-method exploratory sequential design (qualitative–quantitative paradigm model) to validate a crisis management education model based on drug abuse. The qualitative phase was designed to identify and conceptualize the dimensions, components, and indicators of the proposed model, whereas the quantitative phase was conducted to validate the extracted model and examine the relationships among its dimensions. From the perspective of data collection, the quantitative section was descriptive-survey research, while the qualitative section followed the grounded theory methodology. Grounded theory was selected because of the limited theoretical and empirical literature concerning crisis management education based on drug abuse in educational settings and the need to develop a context-specific conceptual model. The study

adopted Strauss and Corbin's grounded theory approach, which relies on open, axial, and selective coding procedures for theory generation and model development.

The participants in the qualitative phase consisted of educational experts selected from the Tehran Provincial Department of Education and faculty members specializing in Educational Administration and Educational Sciences in Tehran. These individuals possessed extensive professional experience in educational management, educational policymaking, crisis management, and issues related to substance abuse prevention. Purposeful sampling with a snowball technique was employed to identify information-rich participants capable of contributing valuable insights to the research problem. Interviews continued until theoretical saturation was achieved. Saturation occurred after seventeen semi-structured interviews, at which point no new concepts or categories emerged from the data. The qualitative sample included university faculty members, current and former educational administrators, planning officers, and policymakers with substantial academic and professional records in educational research and administration.

The quantitative phase targeted all first-level secondary school principals in Tehran. The statistical population consisted of approximately 1,900 school principals working across the educational districts of the city. The sample size was determined using Cochran's formula, resulting in a required sample of 320 participants. A stratified random sampling method based on educational districts was utilized to ensure adequate representation from all regions of Tehran. The number of participants selected from each district was proportional to the size of the population in that district. This sampling strategy enhanced the representativeness of the sample and increased the generalizability of the findings.

Data collection in the qualitative phase was conducted through semi-structured interviews. An interview protocol was developed based on a comprehensive review of the literature and the objectives of the study. The interview questions focused on experts' perceptions of crisis management education based on drug abuse, including its conceptual definition, key dimensions, causal conditions, contextual factors, environmental conditions, implementation strategies, expected outcomes, and essential indicators. Interviews were conducted individually, recorded digitally with participants' consent, transcribed verbatim, and analyzed systematically. To enhance credibility, member checking and peer review procedures were implemented throughout the qualitative analysis process.

The findings obtained from the qualitative phase served as the foundation for developing a researcher-made questionnaire used in the quantitative phase. Initially, a semi-structured expert evaluation questionnaire was designed and distributed among specialists to assess the relevance and importance of the preliminary dimensions and components extracted from the literature and interviews. Based on expert feedback, modifications were incorporated into the proposed framework, resulting in a revised model. Subsequently, a structured questionnaire was developed for large-scale administration among the target population.

The final questionnaire consisted of demographic items and a researcher-developed scale designed to measure the dimensions of the crisis management education model based on drug abuse. Following transcription and coding of interview data, the extracted concepts and categories were transformed into questionnaire items. The instrument contained four major criteria, eighteen components, and 132 indicators. The four overarching criteria included inputs, processes, outputs, and consequences. The input dimension comprised financial resources, external organizational factors, human resources and equipment, and stakeholders' contributions and expectations. The process dimension included resource management efficiency, organizational justice, accountability, responsibility, anti-corruption practices, and transparency. The output dimension consisted of financial outcomes, service quality, laws and regulations, empowerment and efficiency, short-term outcomes, and long-term outcomes. The consequences dimension encompassed individual and organizational consequences.

Responses were recorded using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated stronger agreement with the indicators of the proposed model. Prior to the main data collection process, the questionnaire underwent face validity and content validity evaluations by a panel of experts. Face validity was assessed through expert judgment regarding the clarity, relevance, and appropriateness of the items. Content validity was evaluated through statistical indicators, including Average Variance Extracted (AVE) and Composite Reliability (CR). The instrument demonstrated satisfactory psychometric properties, with all dimensions exceeding acceptable thresholds for convergent and discriminant validity.

Reliability was assessed through a pilot study involving thirty participants drawn from the target population. Internal consistency was evaluated using Cronbach's alpha coefficients. The alpha values for all dimensions exceeded

the minimum acceptable threshold, ranging from 0.720 to 0.890, indicating satisfactory to excellent reliability. Additional measures of reliability, including composite reliability indices, further confirmed the consistency and stability of the questionnaire.

To ensure trustworthiness in the qualitative phase, several procedures were implemented. Interviews were audio-recorded and transcribed in detail, repeated reviews of transcripts were conducted, and coding procedures were independently examined to minimize researcher bias. The consistency of coding was verified through recoding selected interviews and comparing the resulting categories. These procedures enhanced the credibility, dependability, and confirmability of the qualitative findings.

Qualitative data analysis was performed using grounded theory procedures. After transcription of interviews, the data were analyzed through open coding, axial coding, and selective coding. During open coding, meaningful units of text were identified and assigned initial codes. In the axial coding stage, related codes were grouped into broader categories and subcategories, allowing relationships among concepts to emerge. Finally, selective coding was employed to integrate categories and construct the conceptual framework of the crisis management education model based on drug abuse. The resulting model represented the theoretical foundation for the quantitative validation phase.

Quantitative data were analyzed using SPSS version 23 and AMOS software. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to summarize participant characteristics and study variables. Inferential analyses were conducted to evaluate the psychometric properties of the model and test the relationships among its dimensions. Data normality was

assessed using the Kolmogorov–Smirnov test. Exploratory factor analysis was employed to examine the underlying factor structure of the instrument and identify latent dimensions. Confirmatory factor analysis was subsequently performed using AMOS to validate the measurement model and assess construct validity.

Structural equation modeling was used to evaluate the overall fit of the proposed model and determine the strength of relationships among latent variables. Model fit indices were examined to assess the adequacy of the theoretical framework. Convergent validity was evaluated through Average Variance Extracted (AVE) and Composite Reliability (CR), while discriminant validity was assessed through comparisons of AVE, Maximum Shared Variance (MSV), and Average Shared Variance (ASV). In addition, Friedman’s ranking test was employed to determine the relative importance and priority of the dimensions and components of the crisis management education model based on drug abuse. Collectively, these analytical procedures provided comprehensive evidence regarding the validity, reliability, and structural adequacy of the proposed model.

### 3. Findings and Results

The findings of the study are presented in three parts. First, the descriptive characteristics of the dimensions and components of the crisis management education model based on drug abuse are reported. Then, the statistical assumptions required for parametric analysis and factor analysis are examined. Finally, the results of path analysis and model fit indices are presented to evaluate the validity and adequacy of the proposed model.

**Table 1**

*Descriptive Statistics of the Research Variables*

Criterion	Component	Number of Indicators	Mean	Standard Deviation	Variance
Input	Financial resources	5	3.89	0.690	0.411
Input	Extra-organizational factors	3	3.21	0.659	0.429
Input	Human resources and equipment	4	3.20	0.640	0.402
Input	Stakeholders’ contributions and expectations	3	3.40	0.618	0.401
Process	Efficiency and resource management	16	3.85	0.619	0.413
Process	Organizational justice	5	3.96	0.620	0.420
Process	Accountability	5	3.02	0.700	0.400
Process	Responsibility	9	3.59	0.721	0.509
Process	Anti-corruption	9	3.39	0.659	0.405
Process	Transparency	6	3.22	0.618	0.400
Output	Financial resources	5	3.84	0.619	0.409
Output	Service quality	9	3.99	0.620	0.410
Output	Laws and regulations	4	3.09	0.615	0.409

Output	Empowerment and efficiency	10	3.29	0.490	0.405
Output	Short-term results	8	3.02	0.700	0.400
Output	Long-term results	7	3.59	0.721	0.509
Consequences	Individual consequences	14	3.39	0.659	0.405
Consequences	Organizational consequences	10	3.22	0.618	0.400

As shown in Table 1, the mean scores of all dimensions and components were higher than the theoretical mean of 3. This indicates that the components extracted for the crisis management education model based on drug abuse were evaluated as desirable by the respondents. Among the components, service quality obtained the highest mean score, followed by organizational justice, financial resources in the input dimension, efficiency and resource management, and financial resources in the output dimension. The lowest mean scores belonged to accountability and short-term results, although these were also above the theoretical midpoint. Overall, the descriptive findings show that the four major criteria of input, process, output, and consequences were empirically supported in the context of first-level secondary schools in Tehran.

Before conducting path analysis and confirmatory factor analysis, the assumptions of normality, sampling adequacy, and factorability of the data were examined. The Kolmogorov–Smirnov test indicated that the significance values for the research variables were greater than 0.05; therefore, the null hypothesis of normal distribution was not rejected, and the use of parametric tests was justified. In addition, the Kaiser–Meyer–Olkin index was 0.892, which is higher than the acceptable threshold of 0.60 and confirms the adequacy of the sample for factor analysis. Bartlett’s test of sphericity was also significant,  $\chi^2 = 636789.058$ ,  $df = 320$ ,  $p = 0.001$ , indicating that the correlation matrix was suitable for factor extraction and structural analysis.

**Table 2**

*Path Analysis Results and Significance of Estimated Parameters*

Latent Dimension	Observed Component	Standardized Path Coefficient	t-value	p-value	Status
Causal factors	Financial resources	0.59	11.50	0.003	Accepted
Causal factors	Extra-organizational factors	0.61	8.84	0.000	Accepted
Causal factors	Human resources and equipment	0.55	9.86	0.000	Accepted
Causal factors	Stakeholders’ contributions and expectations	0.58	8.58	0.000	Accepted
Causal factors	Efficiency and resource management	0.52	10.90	0.000	Accepted
Causal factors	Organizational justice	0.65	8.96	0.000	Accepted
Causal factors	Accountability	0.51	9.85	0.002	Accepted
Causal factors	Responsibility	0.65	12.19	0.003	Accepted
Causal factors	Anti-corruption	0.55	13.21	0.000	Accepted
Causal factors	Transparency	0.58	11.14	0.000	Accepted
Causal factors	Financial resources	0.56	7.89	0.002	Accepted
Causal factors	Service quality	0.77	12.14	0.003	Accepted
Causal factors	Laws and regulations	0.50	11.16	0.000	Accepted
Causal factors	Empowerment and efficiency	0.60	16.11	0.000	Accepted
Causal factors	Short-term results	0.61	9.95	0.000	Accepted
Contextual factors	Effective management	0.75	10.29	0.000	Accepted
Contextual factors	Legal support for staff training	0.58	9.98	0.002	Accepted
Contextual factors	Organizational resource capacities	0.70	14.13	0.003	Accepted
Contextual factors	Organizational flexibility	0.54	0.63	0.000	Accepted
Environmental conditions	Managerial weaknesses	0.54	11.11	0.000	Accepted
Environmental conditions	Organizational process barriers	0.60	8.50	0.000	Accepted
Environmental conditions	Legal and regulatory barriers	0.61	10.19	0.001	Accepted
Executive strategies	Increasing economic and financial capacities	0.75	10.59	0.000	Accepted
Executive strategies	Developing educational capacities	0.58	8.20	0.001	Accepted
Executive strategies	Increasing organizational agility	0.70	11.60	0.000	Accepted
Executive strategies	Strengthening effective communication with staff	0.64	11.15	0.000	Accepted
Consequences	Performance improvement	0.54	10.12	0.000	Accepted
Consequences	Participation development	0.50	11.13	0.000	Accepted
Consequences	Sustainable development	0.61	9.15	0.000	Accepted

The results of Table 2 show that all estimated paths were statistically significant and accepted. The standardized coefficients ranged from 0.50 to 0.77, indicating that all identified components had acceptable explanatory power in the model. Among the causal factors, service quality had the strongest loading, followed by organizational justice and responsibility. Among contextual factors, effective management showed the highest coefficient, while

organizational resource capacities also had a strong role. In the executive strategies dimension, increasing economic and financial capacities and increasing organizational agility had the strongest effects. These findings indicate that the proposed model is supported by the empirical data and that all identified dimensions contribute meaningfully to the validation of the crisis management education model based on drug abuse.

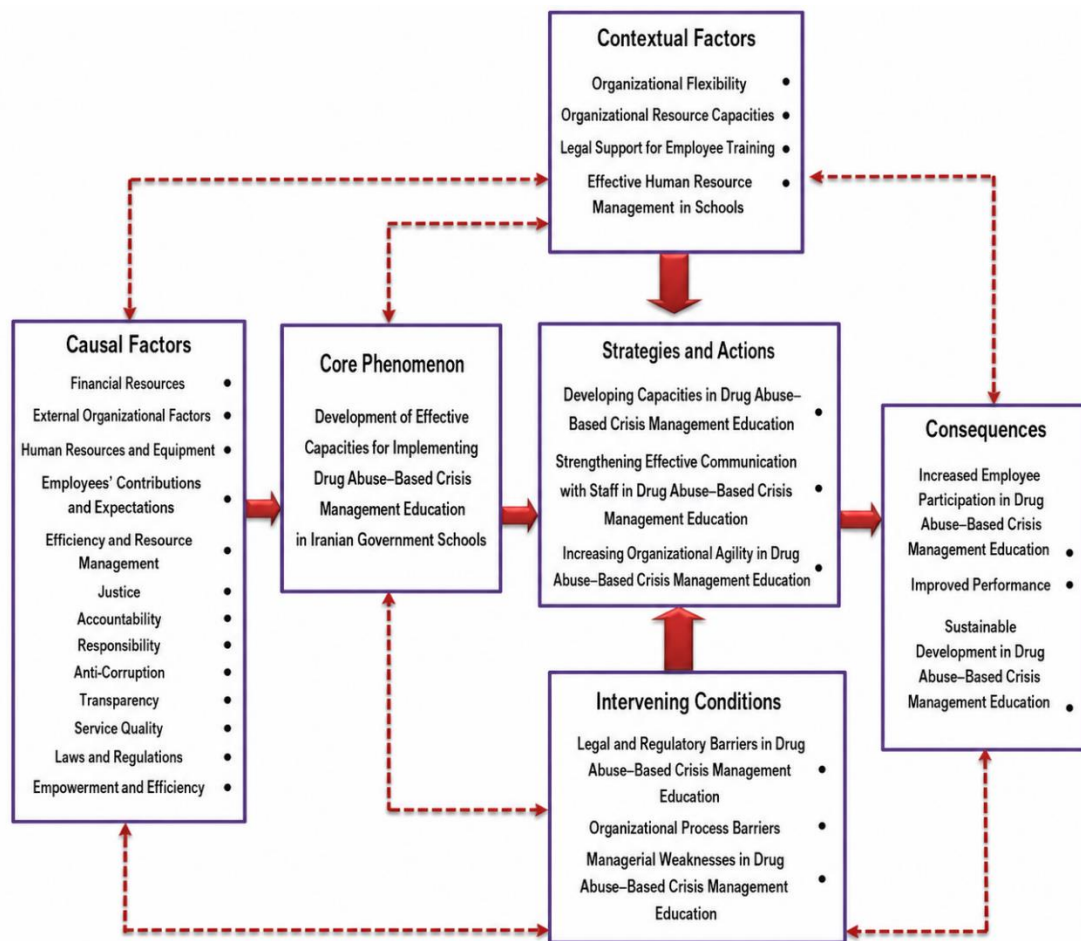
**Table 3**

*Model Fit Indices of the Confirmatory Factor Model*

Fit Index	Obtained Value	Acceptable Value	Status
GFI	0.92	GFI > 0.90	Accepted
AGFI	0.93	AGFI > 0.90	Accepted
CFI	0.96	0.90 < CFI < 1	Accepted
CMIN/df	1.88	Less than 3	Accepted
RMSEA	0.085	RMSEA < 0.10	Accepted

**Figure 1**

*Final Model*



**Drug Abuse-Based Crisis Management Education Model for First-Level Secondary Schools in Tehran City**

As shown in Table 3, all model fit indices were within acceptable ranges. The GFI, AGFI, and CFI values were above 0.90, indicating good overall model fit. The CMIN/df value was 1.88, which is below the acceptable threshold of 3 and confirms the adequacy of the model structure. The RMSEA value was 0.085, which is within the acceptable range and indicates a reasonable approximation error. Therefore, the confirmatory factor analysis results demonstrate that the empirical data fit the proposed theoretical model adequately, and the crisis management education model based on drug abuse can be considered statistically valid for first-level secondary school principals in Tehran.

#### 4. Discussion and Conclusion

The purpose of the present study was to validate a crisis management education model based on drug abuse among first-level secondary school principals in Tehran. The findings demonstrated that all identified dimensions of the proposed model, including causal factors, contextual factors, intervening conditions, implementation strategies, and consequences, were statistically significant and exhibited acceptable levels of explanatory power. Furthermore, the confirmatory factor analysis and structural model assessment indicated satisfactory model fit, suggesting that the proposed framework provides a coherent and empirically supported explanation of the factors influencing the implementation of drug abuse-based crisis management education in schools.

One of the most important findings of the study was the significant role of causal factors, including financial resources, external organizational factors, human resources and equipment, stakeholders' contributions and expectations, efficiency and resource management, organizational justice, accountability, responsibility, anti-corruption, transparency, service quality, laws and regulations, and empowerment and efficiency. Among these components, service quality, organizational justice, and responsibility demonstrated some of the strongest factor loadings. This finding suggests that effective crisis management education in the context of substance abuse requires more than merely financial support or policy development; rather, it depends on the existence of a transparent, responsible, and service-oriented organizational culture. These results are consistent with studies emphasizing that organizational readiness and governance quality significantly influence the effectiveness of crisis

response systems. Research has shown that institutions characterized by transparent decision-making, accountability mechanisms, and effective resource allocation are better equipped to respond to behavioral and public health crises (Lofaro et al., 2025; McLaughlan et al., 2025; Olmedo & Muir, 2025). Similarly, investigations into emergency management and behavioral health interventions have highlighted the importance of organizational capacity and institutional effectiveness as prerequisites for successful crisis management initiatives (Ding et al., 2023; Kilindimo et al., 2023).

The significant influence of financial resources identified in this study further reinforces the notion that sustainable crisis management programs require adequate investment and institutional support. Drug abuse prevention and intervention initiatives often involve specialized training, educational materials, counseling services, and collaborative partnerships, all of which depend upon sufficient financial capacity. Previous research has similarly demonstrated that inadequate resources can undermine the implementation of preventive programs and reduce organizational preparedness during crises (Leventelis et al., 2023; Montazeri et al., 2021). Therefore, the prominence of financial resources within the proposed model reflects both theoretical expectations and empirical realities observed in educational and public health settings.

The findings also revealed the importance of contextual factors, including organizational flexibility, organizational resource capacities, legal support for employee training, and effective human resource management. Among these dimensions, effective management and organizational resource capacities exhibited particularly strong effects. This result suggests that schools are more likely to implement successful drug abuse-based crisis management programs when they possess adaptive leadership structures and sufficient organizational capabilities. The contemporary crisis management literature increasingly emphasizes organizational adaptability as a central determinant of resilience and preparedness. Flexible institutions are better able to respond to rapidly changing environmental conditions, coordinate stakeholders, and implement innovative solutions to emerging challenges (Chaaya et al., 2025; Kwon, 2025). Likewise, studies examining responses to societal crises have shown that institutions with strong management systems and resource infrastructures are more capable of maintaining service quality and supporting vulnerable populations during periods of uncertainty (Iaali et al., 2024; Williams et al., 2025).

The role of legal support for employee training identified in the present study highlights the importance of policy frameworks in facilitating educational innovation and crisis preparedness. Training initiatives often require administrative authorization, financial support, and institutional commitment. Without supportive legal and regulatory structures, even well-designed programs may face implementation barriers. This finding aligns with previous research emphasizing that policy environments significantly influence organizational capacity to adopt preventive and educational interventions (Anderson et al., 2022; Neuenschwander et al., 2025). Consequently, efforts to strengthen crisis management education should be accompanied by policy reforms that promote professional development and organizational learning.

Another significant finding concerned the influence of intervening conditions, including legal and regulatory barriers, organizational process barriers, and managerial weaknesses. These variables demonstrated significant relationships with the implementation of the proposed model, indicating that obstacles within organizational and policy environments can substantially affect educational crisis management efforts. This finding is consistent with ecological perspectives on organizational behavior, which emphasize that successful implementation depends not only on internal resources but also on external environmental conditions. Organizations frequently encounter procedural complexities, regulatory constraints, and managerial challenges that hinder effective decision-making and innovation. Previous studies examining crisis response systems have reported similar findings, highlighting the detrimental effects of bureaucratic barriers and organizational inefficiencies on intervention outcomes (McLaughlan et al., 2025; Skundberg-Kletthagen & Fjær, 2025). Research involving public health crises has likewise demonstrated that institutional obstacles often reduce responsiveness and limit the effectiveness of preventive programs (Băcilă et al., 2025; Ding et al., 2023).

The results regarding implementation strategies provide further insight into the mechanisms through which drug abuse-based crisis management education can be strengthened. The strategies identified in the model included developing educational capacities, strengthening effective communication with staff, increasing organizational agility, and enhancing economic and financial capacities. Among these, organizational agility and economic capacity development exhibited particularly strong effects. These findings suggest that crisis management education requires

both structural preparedness and dynamic organizational processes. Educational institutions must not only possess adequate resources but also demonstrate the ability to adapt quickly to emerging circumstances and evolving student needs. Similar conclusions have been reported in studies examining crisis preparedness and behavioral health interventions, where organizational agility and communication effectiveness emerged as critical determinants of successful outcomes (Olmedo & Muir, 2025; Skundberg-Kletthagen & Fjær, 2025).

The importance of communication identified in the present study is especially noteworthy. Effective communication facilitates information sharing, stakeholder coordination, and collaborative problem-solving. Within educational environments, communication serves as a bridge connecting administrators, teachers, students, parents, and external service providers. Previous investigations have consistently emphasized communication as a key component of crisis management systems, particularly when addressing behavioral health and substance-related concerns (Ding et al., 2023; Shaikh et al., 2024). The present findings therefore support the growing consensus that communication should be viewed as a strategic organizational capability rather than a purely operational function.

The consequence dimension of the model included increased employee participation, improved performance, and sustainable development in crisis management education. The significance of these outcomes indicates that successful implementation of the proposed model generates benefits extending beyond immediate crisis response. Enhanced employee participation reflects greater organizational commitment and stakeholder engagement, both of which are essential for sustaining preventive initiatives. Improved organizational performance suggests that crisis management education contributes positively to institutional effectiveness, while sustainable development indicates long-term organizational learning and capacity building. These findings are consistent with resilience-based perspectives, which emphasize that effective crisis management should not merely mitigate negative outcomes but also promote organizational growth and adaptation (Demirci et al., 2026; Williams et al., 2025).

The broader implications of these findings are particularly relevant in light of increasing global concerns regarding substance abuse among adolescents and young adults. Research has demonstrated that substance use disorders are closely associated with stress, adverse

experiences, mental health problems, ineffective coping strategies, and social vulnerabilities (Chamoun et al., 2023; Hughes et al., 2024; Trucco et al., 2022). Educational institutions therefore occupy a unique position within prevention systems because they provide opportunities for early identification, intervention, and resilience development. The validated model developed in the present study offers a structured framework through which schools can address these challenges systematically and proactively.

The findings also support contemporary theoretical perspectives emphasizing the multidimensional nature of crisis management. Rather than focusing exclusively on emergency response procedures, effective crisis management education requires attention to organizational structures, leadership processes, environmental conditions, communication systems, resource management, and stakeholder engagement. Such a holistic perspective aligns with recent conceptual frameworks proposing that crisis preparedness emerges from interactions among multiple organizational and contextual factors (Neuenschwander et al., 2025; Olmedo & Muir, 2025). The present study contributes to this literature by demonstrating how these factors can be integrated into a coherent model specifically designed for educational settings and substance abuse prevention.

Furthermore, the study extends existing knowledge by providing empirical evidence from the educational sector, an area that has received comparatively limited attention within crisis management research. Much of the existing literature focuses on healthcare organizations, emergency services, or community-based interventions. By examining school administrators and educational institutions, the present research highlights the unique challenges and opportunities associated with crisis management education in schools. This contribution is particularly important because educational environments represent critical contexts for preventive interventions and long-term behavioral development (Anderson et al., 2022; Tatoğlu & Ayyıldız, 2025).

Overall, the findings indicate that drug abuse-based crisis management education is a multidimensional phenomenon influenced by organizational, contextual, environmental, and strategic factors. The validated model provides a comprehensive framework capable of guiding educational leaders, policymakers, and practitioners in designing and implementing effective crisis management initiatives. By integrating causal conditions, contextual influences, implementation strategies, and anticipated outcomes, the

model offers a practical roadmap for enhancing organizational preparedness and promoting healthier educational environments.

One limitation of the present study is that the quantitative data were collected exclusively from first-level secondary school principals in Tehran, which may limit the generalizability of the findings to other educational levels, geographical regions, or cultural contexts. Additionally, the use of self-report questionnaires may have introduced response biases related to social desirability or subjective perceptions. The cross-sectional design of the quantitative phase also restricts the ability to draw causal conclusions regarding relationships among variables. Finally, although the study incorporated expert perspectives during model development, the views of students, parents, counselors, and external stakeholders were not directly examined.

Future studies should examine the applicability of the proposed model in different educational settings, including primary schools, upper secondary schools, and higher education institutions. Longitudinal research designs would be valuable for investigating the long-term effects of crisis management education programs on organizational performance and substance abuse prevention outcomes. Researchers may also explore the perspectives of additional stakeholder groups, such as teachers, students, parents, and healthcare professionals, to enrich understanding of implementation processes. Comparative studies across regions or countries could further evaluate the cultural adaptability and external validity of the model. In addition, future research may investigate the effectiveness of specific intervention programs developed based on the validated framework.

Educational authorities should incorporate crisis management education related to substance abuse into professional development programs for school administrators and staff. Schools should establish interdisciplinary crisis management teams and create clear communication channels among educators, families, and community agencies. Policymakers should allocate sufficient financial and organizational resources to support preventive initiatives and training activities. Educational organizations should also prioritize transparency, accountability, organizational justice, and stakeholder participation as foundational principles of crisis management practice. Finally, regular evaluation and continuous improvement mechanisms should be implemented to ensure that crisis management education

programs remain responsive to emerging challenges and changing student needs.

### 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

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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