

Review



Crisis management programs in top universities worldwide to maintain educational activities in situational crises: A scoping review

Rana Gholamzadeh Nikjoo¹ , Yegane Partovi² , Akbar Javan Biparva^{3*} 

¹Department of Health Policy & Management, Tabriz Health Services Management Research Center, Iranian Center of Excellence in Health Management, School of Management & Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran

²Department of Health Policy and Health Services Management, School of Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran

³Iranian Center of Excellence in Health Management, Student Research Committee, School of Health Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran

Article info

Article History:

Received: July 3, 2022

Accepted: September 26, 2022

Published: December 18, 2022

Keywords:

Crisis management, Crisis program, Universities, Higher education institutions

Abstract

Background: Critical events can cause panic in the university community and raise the question of whether universities can prepare for and respond to these events while effectively maintaining a culture of inclusiveness and free access.

Methods: The current study was conducted based on a scoping review of texts using the Arksey and O'Malley frameworks and the PRISMA checklist to improve the quality of the report. For this study, crisis management programs at universities and institutes of higher education in all countries of the world within a period of 10 years (2010-2020) were searched using appropriate keywords approved in MeSH and various databases such as Embase, PubMed and Scopus, Proquest, and Iranian SID and Magiran databases. Finally, according to the search parameters, 21 studies were included in the final study, and an output table was extracted.

Results: The goals of university crisis programs when encountering existing accidents and crises are divided into several general categories: planning and creating a framework for dealing with the crisis, continuing to work in times of crisis, communicating in times of crisis, and providing supplies and continuity of training. The next most crucial element in the university crisis program is the formation of a crisis management team.

Conclusion: It is indispensable for students, faculty, and administrators to receive training in crisis management to prevent any possible harm to individuals when dealing with crises in universities. As a result, it is recommended that crisis management officials in universities pay serious attention.

Introduction

Today, natural disasters are more of a concern for humans than ever before. An examination of accidents and disasters in recent years shows that the increase in major accidents is associated with significant financial and human losses. Accidents and disasters are severe geographical displacements or high-intensity occurrences that cause death, financial loss, injuries, and illnesses. Conventional methods and usually available resources cannot control such crises effectively; therefore, the reaction requires planning and external assistance.¹

Colleges and universities have been confronted with various crises over the past few years. These include a football scandal at the University of Colorado, harassment

of female cadets at the Air Force Academy, and a 1999 bonfire catastrophe at Texas A&M, which resulted in the deaths of 12 students and 27 injuries. In addition, there are widespread and perennial crises such as grade tampering, the alteration of critical files and student records, computer hacking, major fires and explosions, student unrest, civil disturbances, confrontations, and occasional violence among students of different political, religious, and ideological viewpoints, ethical breaches by top administrators, faculty, and students, fraudulent use of tutors by student-athletes, stealing of body parts from medical schools,² and disease outbreaks. For instance, young adults are more likely to be susceptible to infection during a pandemic, increasing the potential

*Corresponding author: Akbar Javan Biparva, Email: akbarhavan4@gmail.com

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for universities to be volatile disease outbreak centers. Outbreak management is essential to reduce the impact on both the institution and the community.³

With a motto of “Health in Disasters,” in 2009, the World Health Organization (WHO) obligated all its member countries to act accordingly to plan, manage, coordinate, train, and take other necessary measures to achieve this goal, emphasizing public support, capacity building, and local management. Therefore, various centers and organizations in committed countries perform their duties most efficiently in accidents and disasters to maintain survivors’ health and provide them with short-term or long-term services.⁴ To minimize the impact of a crisis, crisis managers organize, direct, and execute actions to normalize the situation.⁵ Researchers have also become more interested in researching crisis management within higher education institutions as crisis events increase.

The managers of educational centers still encounter problems responding to actual events despite years of evaluating their effectiveness.⁶ Panic caused by critical events in a university community raises the question of whether universities can prepare and respond effectively to critical events while simultaneously maintaining a culture of inclusiveness and free access. Therefore supervisors and administrators of educational institutions must develop effective strategic plans to prevent and minimize the consequences of a critical event.⁷ Critical events at a university are generally part of a broader crisis. The crisis at the university level directly affects the regular teaching process and can damage the university’s reputation. Generally, university crises are latent events that have not yet revealed themselves and whose occurrence threatens regular educational programming. The interests of faculty, students, and university staff are closely related to these critical events. Universities’ critical events are often more sudden, emergent, harmful, and uncontrollable than international crises.

In case of a university crisis, as a direct subject, the university’s faculty and students typically pay more attention to the event’s progress, and information from all phases of the crisis management process is quickly shared between them. Inefficient crisis management can lead to dissatisfaction among faculty members and students, aggravating the situation. Therefore, a university’s crisis management program is essential and meaningful. It mainly aims to provide information about a possible crisis and help control the current crisis effectively.⁸ Developing protocols and a crisis management program can help universities deal with crises appropriately.⁹ In most higher education institutions, lack of proper planning makes them vulnerable to crises, according to crisis management experts.¹⁰ One of the reasons for the lack of attention to crisis management programs in universities is the unfamiliarity of their senior managers with risk management concepts in crises.¹¹

Furthermore, economic issues, cultural conditions, and weak leadership of organizations at times of crisis are other obstacles to properly implementing crisis management decisions.¹² To the best of our knowledge, this may be the first study conducted at this level in the field of crisis management at higher education institutions. It aims to examine the characteristics of crisis programs of universities and higher education institutions in different countries to provide them with beneficial experiences and help them perform appropriately in planning to deal with crises. Moreover, despite numerous studies on crisis management in colleges, universities, and higher education institutions in Iran and other countries, this study may rank first among those conducted at the top 20 universities worldwide. Previously, most reviews have focused on universities in a single country hence, this study’s ability to consider universities from various cultures and countries is one of its strengths.

Methods

The study was conducted in 2020 through a structured and extensive review of texts using the Arksey and O’Malley frameworks and the PRISMA 2020 checklist to improve the report quality.^{13,14} This checklist includes items related to the content of a systematic review and meta-analysis as well as abstracts, methods, results, and discussions to create remarkable transparency in article selection.

This type of review was selected because it is possible to identify and analyze knowledge gaps more efficiently using a scoping review. Conducting a scoping review can help identify the evidence available in a particular field and utilize it as a precursor to a systematic review.

Identifying the research questions

This study addressed the following questions: What are the goals of crisis management programs at universities and higher education institutions in different countries worldwide? Which elements and components are included in these programs? Who are the members of the crisis management teams? For which crises have universities and institutions developed strategies and interventions in different countries?

Identifying relevant studies

This study explored crisis management programs worldwide at universities and higher education institutions for ten years (2010-2020).

Inclusion criteria included studies that examined crisis management programs and their related features, as well as intervention strategies and measures against crises in higher education institutions and universities. A crisis event is sudden, unexpected, and often catastrophic, including natural disasters such as hurricanes, earthquakes, and floods, or unnatural disasters such as bombings, shootings, or sexual assaults,¹⁵ disrupting usual routines and daily activities at universities and higher

universities education institutions. It poses an immediate threat to the institution's staff, students, and shareholders as well as their physical structure or reputation.¹⁶ Non-English and Persian articles were excluded from this study.

The search for the current study was conducted using approved keywords in MeSH, including: Crisis, Disaster, University, Higher Education, College, Strategy and Planning, Program, "Action Plan," "Crisis Plan," "Disease Outbreaks," and "Epidemics."

Moreover, the search was conducted using combinations of the logical operators "and" (indicating that only documents containing all the keywords listed will be retrieved) and "or" (indicating that all documents containing merely one of the searched keywords will be retrieved). Searches were conducted in several databases, including Embase, PubMed, SCOPUS, Proquest, Iranian SID, and Magiran databases. In addition, all articles and reports published during the period were selected using the whole counting method. A manual search of journals and sources of selected articles was conducted along with a review of organizational reports, published government documents, websites, identified reference studies, and other available information sources. In the manual and gray literature, approximately 20 top universities worldwide were selected according to the Scimago ranking criterion for 2020. The list of these universities is available in [Supplementary file 1](#). The universities' websites were manually checked to find more documents, and study items were extracted. An alternative university was substituted in cases where the universities searched had no documentation of crisis programs.

Study selection

Two researchers performed the previous steps separately using the inclusion and exclusion criteria and reviewed the titles after removing duplicate items. Several articles were deleted at this stage due to not meeting inclusion criteria and other reasons, and the rest were summarized in the review stage. At this stage, abstracts of articles were reviewed, and irrelevant articles were removed. In the last step, the main and related articles' full texts were studied, findings were extracted, and irrelevant articles were deleted. It should be noted that at each screening stage, the screened studies were compared to increase the accuracy of the work during discussion sessions, and differences were resolved.

Data charting process

Researchers conducted a preliminary review of several articles to develop items that needed to be included in the data extraction form to extract information from the studies. After the initial review of the data extraction form, the study was designed based on the purpose and research questions. It should be noted that the data extraction form was repeatedly reviewed during the process, and

any necessary changes were made. The items in the data extraction form included program components and objectives, crisis management team composition, and types of crises.

Collating, summarizing, and reporting results

In this study, based on methodology, a thematic analysis method was conducted to analyze the data in the tables. This method consists of six steps: understanding the data, developing raw codes, searching for categories, reviewing, defining, naming, and preparing a report. In this way, a preliminary study was conducted to identify extracted studies. A thematic framework based on codes specific to the studies was designed, and another researcher reviewed each study. Then the findings were placed inside the specific extracted codes. The main themes were extracted for the next step following the pattern, semantic relationship, and occasional integration between codes.

In addition, the findings were organized within the main themes, which are presented as a table of findings.

Results

Our search yielded 1119 studies from the mentioned databases and 30 cases from other sources, including 20 studies of gray literature, 5 cases from lists of references, and five from consulting and contacting specialists and experts. As a result, after removing duplicates, 765 studies remained to review titles and abstracts. A total of 715 cases were excluded from further analyses due to non-compliance with the inclusion criteria. The remaining 50 studies were reviewed similarly, and their lists of references were thoroughly reviewed. After studying the full text of the articles, 29 articles were removed due to non-compliance with the inclusion criteria. Ultimately, 21 studies were considered for the final review, and an output table was extracted. The process of selecting studies is shown in [Figure 1](#).

According to [Table 1](#), the cases extracted from the studies were divided into specific categories, such as program components, program objectives, crisis management teams, and types of crises, to facilitate the presentation of the report.

The program components section covers the programs' general framework, titles, and elements. In the objectives section, all general and specific goals related to the development of the crisis plan are covered, and in the crisis management teams section, all individuals and constituents involved in controlling crises at the universities are covered. The type of crisis refers to crises that have arisen or may arise in the future, including natural disasters, wars and political conflicts, and epidemics. More details and details are given in [Table 1](#).

Discussion

The results of this study indicated that universities and higher education institutions design, formulate, and

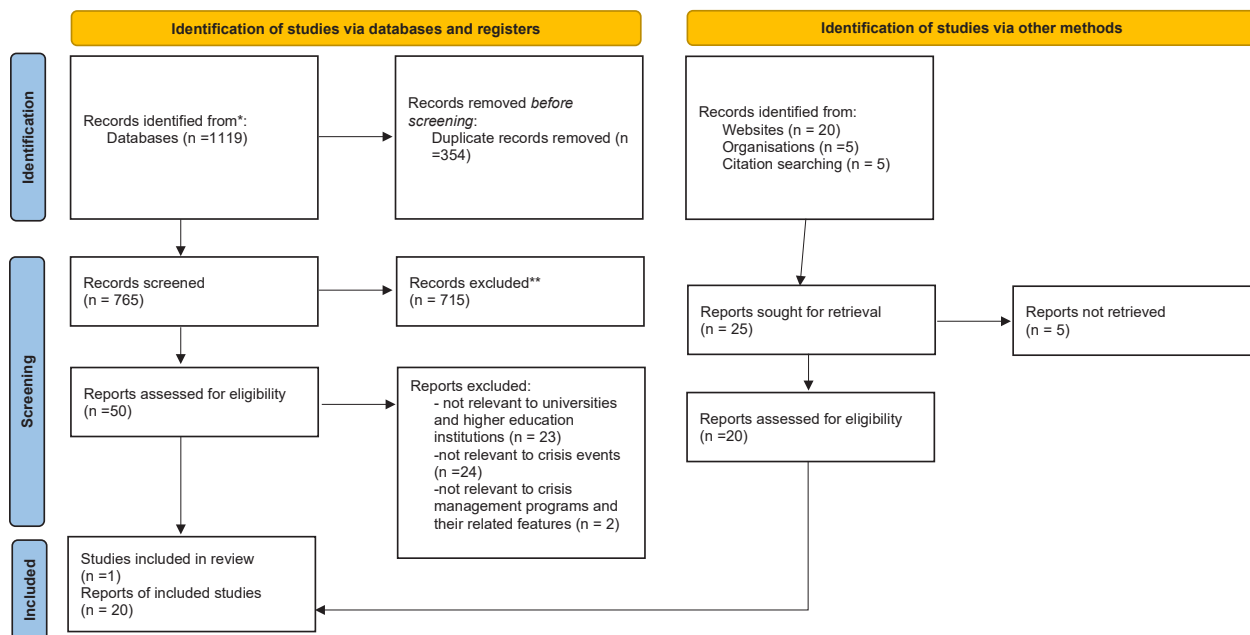


Figure 1. PRISMA diagram for selected studies

Table 1. Items mentioned in the crisis program of universities and higher education institutions

The type of crises mentioned	Crisis management team	Program Objectives	Program components	Country name	University name, site
All crises	President, Vice President, Student Vice Chancellor, Vice Chancellor for Commercial Finance, Executive Director of University Communications and Marketing, Head of Student Affairs, Director of Information Technology, Heads and Departments, Head of Safety, Executive and Facility Director, Health Officer	Provide an organizational and process framework for emergency management; describe areas of cooperation between local, state, and border centers involved in the accident, define concepts, terms, policies and structures, provide guidelines following the "all hazards" approach to threats, hazards and harms Which may affect people's lives	Objectives, areas of application, crisis team members, risk management program, communication channels, pre-planning training methods, maneuvers and exercises, tasks and responsibilities, specific risk guidelines	USA	University of Michigan, https://www.umich.edu/
All crises	University President or Vice-Chancellor, Head of Human Resources, Director of Marketing and Communications, Executive Vice President, Director of Infrastructure and University Campus Services, and others, depending on the type of crisis	Help prepare the university for emergencies and respond to them	Areas, general introduction of the university, crisis management framework, roles and responsibilities and related organizations, crisis management team	Australia	University of Sydney, https://www.sydney.edu.au/
Health and safety crises, fires, political and terrorist crises, building and facility collapse, explosions, floods and storms, earthquakes, severe traffic accidents, leakage of biologically hazardous and radioactive agents	Executive Vice President, Director of Student Affairs, Director of Finance, Director of Property and Assets, Director of Safety, Director of University Health Services, Director of Communications, Director of Human Resources, Director of Information Technology, Senior Director of Security, Heads of Affected Faculties, Heads Affected departments, supervisors, and others affected	Minimize and protect the academic community in the event of illness and injury caused by crises, minimize damage to the reputation of the university	Objectives, areas of application, tasks and responsibilities, the structure of the crisis management team	Hong Kong	Hong Kong, https://www.hku.hk/

Table 1. Continued

The type of crises mentioned	Crisis management team	Program Objectives	Program components	Country name	University name, site
Health and safety crises, fires, political and terrorist crises, leakage of biologically hazardous agents and gas	Chief of Security, Deputy Chief of Staff, Head of Departments involved, first aid officers	For the health and safety of all staff, contractor students, and other visitors	Introduction, crisis management organizations, duties, and responsibilities, emergency plans	Australia	University of Melbourne, https://www.unimelb.edu.au/
Earthquake, fire, explosion, emission of hazardous materials, prolonged power outages, floods, or mass casualties	During an event, the STAT team is activated to assess the extent and scope of the emergency. STAT determines whether the University Emergency Operations Center (EOC) and / or Department Operations Centers (DOC) need to be activated. DOCs prepare emergency programs for reduction, emergency preparedness, response and recovery, and assist in attracting volunteers for the Stanford Community Emergency Response Team (SCERT) and the Building Assessment Team (BAT).	Protection of life safety, provision of vital infrastructure and facilities, resumption of educational and research programs	Guides for heads and deputies of advisors and departments	USA	Stanford University, https://www.stanford.edu/
Stroke - A suicide attempt, severe assault or serious threat - Destructive behavior - Hospitalized patients - Missing persons - Physical assault - Recent death of a family member or friend - Serious injury or a serious illness - Sexual assault - Sexual harassment	The Student Vice-Chancellor coordinates information and crisis prevention services for most situations.	Dedicated support to students and other students who are immediately involved in the crisis, support for faculty members and others, prompt notification to them, reducing the confusion of administrators in times of crisis	Take immediate action, awareness of people, duties, and responsibilities, affected people, support measures	USA	John Hopkins University, https://www.jhu.edu/
Fire and smoke, leakage / release / exposure to toxic substances, shooting, medicine, application disruption, threats (bombings, etc.), cyber incidents, floods, weather hazards, emergency travel	Each academic, administrative, and research unit should have an Emergency Preparedness Coordination (EPC) Officer. EPCs have a role to play in the university's emergency preparedness: they prepare ward response programs and coordinate training and planning for ward staff. The EPC is the main interface between these units and MIT emergency and emergency response specialists.	Protecting the well-being of students, faculty, staff, and visitors, protecting the essential duties of the university, education, research, and services during and after emergencies and disasters	Measures and accountability, observance of the highest standards, safety and accessibility of people	USA	University of Massachusetts, https://www.massachusetts.edu/
Fires, bomb threats, chemical spills, earthquakes and more	Executive Director of the Department of Health Sciences, Executive Officers, Senior Executive Director, Executive Vice President for Medical Affairs and Head of the School of Medicine, Senior Vice President, Department of Finance and Facilities with Administrative Order, Vice President for Student Affairs, Vice President for Foreign Affairs, Vice President for Technology University Information and Senior Information Director	Emergency management plan for all risks (at the university level), having a unit response center (URC), emergency operations plan, scientific and research continuity in (unit/department), the readiness of individuals (individuals/employees)	Emergency scope and conditions, resources, duties and responsibilities, special emergency procedures, appendices, checklists, forms, and maps	USA	Washington University in St. Louis, https://wustl.edu/

Table 1. Continued

The type of crises mentioned	Crisis management team	Program Objectives	Program components	Country name	University name, site
Medical emergencies - evacuation - shelter in place - fire - flood/ water leakage - service disruption - bad weather - workplace injuries - employee safety - hazardous materials - suspicious packages - threats - personal preparedness - safety and security Personal - University maps	Local Emergency Management teams (LEMT), Emergency Support Functions (ESF), and a University-level Crisis Management Team (CMT) In the event of an emergency at the university level, Executive Management is provided by the CMT Team, led by the Executive Vice President Be.	Protect the health and safety of students, faculty, staff, and visitors, maintain scientific and intellectual capital, protect critical infrastructure and other physical assets, and restore typical university performance as soon as possible.	Planning, response, and recovery	USA	Harvard University, https://www.harvard.edu/
Workplace accidents - Student activities (cycling at night, etc.) - Lightning - Weather accidents	Executive team, planning team, logistics and resources team, financing team	Save lives, minimize damage to owners, protect the reputation of the university, maintain business	Instructions and control of structure, roles, and responsibilities, the definition of levels and types of crisis, activation method, reporting method, communication in crisis	Singapore	National University of Singapore, https://www.nus.edu.sg/
General cases, Physical threats, Weather emergencies, Medical emergencies, Emergency facilities	It lacks a team.	This guide helps members of the Yale community develop thought-provoking emergency plans regardless of the event.	Planning, evaluation, and response	USA	Yale University, https://www.yale.edu/
Shooting, financial crisis, rape, student death, sexual assault, murder	Senior leadership team	Crisis management, communication, and decision-making in crises	Transmitting trust and confidence to the people of the college community, preparing for the crisis, informing the main players of the team of the relevant task, being able to receive information quickly and considering different branches and then acting in moments of crisis, having a culture of crisis	USA	American University of Fine Arts, https://www.american.edu/cas/art/
Influenza A H1N1 Outbreak	Centers for Disease Control and Prevention (CDC)	Focus on training and taking essential actions in times of crisis	Perform the necessary actions and training in crisis	USA	Duke University, https://www.duke.edu/
Foodborne toxoplasmosis	Emerging Biological Threats Center (SECEBT)	Communicate with key organizations. Identify and address existing regulatory programs, policies, and procedures gaps. The unique contribution of academic institutions in crisis preparedness, research, and control in institutions	The different roles of federal, state, and regional public health organizations and agencies, open communication with various stakeholders, data sharing, coordination and collaboration between organizations, and identifying policy issues that arise during a crisis outbreak are identified. Take measures to respond more effectively to this type of emergency, identify a variety of resources available from academic institutions, identify opportunities for academic institutions to conduct emergency responses and related research, identify research priorities and educational needs	USA	Emory University University of Florida, Georgia Institute of Technology, University of South Carolina, University of South Florida, Duke University https://www.emory.edu https://www.ufl.edu/ https://www.gatech.edu/ https://scsu.edu https://www.usf.edu/ https://www.duke.edu
COVID-19	Johns Hopkins University orthopedic team	Protecting the workforce while providing essential clinical care. Maintaining the continuity of education and research; And improving care while having the most negligible impact on the team's psychosocial well-being.	Taking action in the event of a crisis, daily telephone conferences, maintaining educational continuity, controlling the mental health of residents and faculty members, Continuation of practices and distance learning curriculum via live teleconferencing by a faculty member in the team and distance learning in addition to the training program, residents (and professors) in distance learning conferences, as well as support for research volume During this period, by remote operation	USA	Department of Orthopedic Surgery, Johns Hopkins University School of Medicine, https://www.hopkinsmedicine.org/

Table 1. Continued

The type of crises mentioned	Crisis management team	Program Objectives	Program components	Country name	University name, site
COVID-19	Multidisciplinary teams included members from the thoracic imaging group, pulmonologists, internal medicine, geriatric medicine, intensive care unit, infection control unit, public health, and community medicine	Maintaining the health of academics and employees, having safe and effective measures, appropriate training strategies, and factors affecting research strategies. And government funding and assistance in the face of financial challenges	Effective measures during the crisis, attention to staff health, allocation of equipment and supplies - raising awareness, promoting e-learning through video conferencing formats for continuing education, paying attention to online webinars, encouraging researchers to work from home and conducting crisis studies, receiving support Government funding and endowments to cover needs during the crisis	Egypt	Department of Radiology at the University of Egypt, https://www.cu.edu.eg/ar/
Influenza pandemic	Emergency Response Office (AHC)	Take the necessary measures in the event of a crisis	Take appropriate action, have basic infrastructures such as telephone and computer networks, build a platform or train remote access to library resources - regardless of technology, the ability to communicate effectively in the event of a crisis	USA	University of Minnesota School of Medicine, https://www.med.umn.edu/
coronavirus	A core team under the supervision of the group leader in charge, organizing, executing and a core team for distance learning	Requirements to protect students and colleagues through physical distance and continuing education at any time	Proper training in times of crisis, personal protection guidelines for all staff and students Medical education, both through distance education and face-to-face - uses support staff to reach the educational process of students	USA	Vienna Medical University, https://www.meduniwien.ac.at/
Prevalence of Middle East Respiratory Syndrome (MERS)	The committee includes the dean, the vice-chancellors for academic affairs, education, and student affairs; the Director of Strategic Planning, A faculty member of the Office of Medical Education; And office staff	Implement safety measures to prevent the spread of the crisis, continuing education, and training (conducting distance lectures and virtual training)	Ensure student safety, minimize student learning loss, and reduce staff and student anxiety	South Korea	Sungkyunkwan University School of Medicine (SKKUSOM), http://www.skku.ac.kr/eng/
Hurricane Katrina	Led by President (DWN) and Resident Manager (AMP)	Communicating, retrieving information, providing emotional support to staff and re-establishing a college program, creating alternative locations and emotional support	Online services and training, appropriate training measures, and a training session to improve morale entitled "Natural Disaster Recovery for Physicians" held by mental health professionals. Also, the availability and presence of consultants by individuals as an essential part of the reconstruction process.	USA	The University of New Orleans, https://www.uno.edu/

implement structured programs to deal with emerging crises. All types of crisis management programs should contain a sequence of steps that start with the specification of shared goals in the field of higher education to the definition of rules for implementing programs and monitoring their implementation - steps, timelines, responsibility for the failure, etc.¹⁷

According to the findings, the content of these programs is divided into program components, objectives, members of the crisis management team, and type of crisis. The goals of university crisis programs in the face of existing accidents and crises are divided into several general categories, including planning and creating a framework for dealing with the crisis and continuing to work and teach in times of crisis, communicate in times of crisis, and provide supplies. Developing the proper organizational framework is fundamental in setting goals, planning, and

preparation because it provides the best ways to lead and develop a comprehensive crisis plan for universities to respond quickly to major incidents. It is essential to have a framework for administrators, faculty, and staff to provide them with best practices that guide the university in coping with a significant incident. This is one of the main goals of most universities, including the University of Michigan. According to a study by Nelson et al, "before", "during", and "after" a significant accident, developing an emergency crisis plan in an educational institution is an essential component because leadership is responsible for ensuring the safety of faculty, staff, and students.¹⁸ The main goal of universities in developing a crisis program is to provide universities with a platform that can help them continue their activities properly in the face of accidents and crises; a crisis should not hinder their activities any more than is unavoidable. Such programs are designed

to help the university community meet the needs of emergencies¹⁷ according to a pre-established framework. In crisis management, universities that take inappropriate decisions and measures, often without a framework, will fail to manage crises effectively. In addition, researchers found that communication barriers are often significant challenges in crisis management. Whether dealing with natural or man-made disasters, it is crucial to focus on information distribution, cross-sectoral coordination, and improved communication¹⁹ between responsive organizations to minimize damage and save lives. Under such stressful and highly dynamic conditions, effective communication can be a matter of life and death.²⁰ The timeliness and accuracy of the information are also crucial for university crisis management and informed decision-making when a critical incident occurs at the university. Most studies indicate that sharing information with no barrier to fully disclosing event details during a crisis is essential. Missing information can be detrimental to effectively responding to critical events at the university. The ability to quickly receive information, consider different dire consequences, and act accordingly is a necessity in moments of crisis and is an essential part of overall crisis management. It is noteworthy that most universities included in the study were concerned with communication issues. Higher education institutions such as the University of South Carolina, the University of Florida, the American Liberal Art University, and the University of New Orleans highlighted communication and information as one of their main goals.

Undoubtedly, each program requires specific facilities and requirements to function successfully. Therefore, another main goal of university crisis programs is to provide essential requirements and vital infrastructures to ensure their successful implementation. Some university crisis programs list financial or vital assets as program objectives as part of these requirements. With a strong emphasis on this issue, Stanford University and Harvard University cited the provision of critical infrastructure and facilities as one of their main goals in establishing a crisis program.

Education is one of the universities' main priorities as their existential goal. Disasters significantly affect education provision, according to the Japan International Cooperation Agency. A number of these effects can be attributed to teachers' and students' deaths, as well as sudden pauses in the course of education and of students' mental disorders.²¹ Various universities continued their education in times of crisis by creating a suitable educational environment, such as holding virtual classes both online and offline^{22,23} (e.g., through various software such as Skype²⁴ or Zoom²²) or holding training courses with a limited number of students and other strategies. Universities such as Stanford, John Hopkins, Washington in St. Louis, Harvard, Duke, Vienna, New Orleans, and

others involved in crisis planning have addressed this issue as one of the vital goals. Other universities, such as the University of Michigan, Sydney, Hong Kong, etc., consider this issue within their objectives but have not addressed it as a separate goal in their programs.

The next important element in the university crisis program is the formation of a crisis management team or group. In the crisis management group, each member has the authority to act. The crisis management group is expected to be ready to respond and react as a group and be available in an emergency or crisis.¹⁷ It is intended to increase awareness of potential crisis events that could threaten universities by creating a crisis planning team. Although universities cannot control all risks resulting from major incidents, such as conflicts, bomb threats, active threats, and shootings, university administrators may implement an emergency crisis planning team to devise a plan to mitigate the situation and take countermeasures. As a result, managers can take appropriate measures with the assistance of the Emergency Planning Team to reduce the likelihood of such incidents in the future.

To improve the culture and atmosphere at the university, the emergency team may implement mitigation and prevention measures, such as anti-bullying programs and nonviolent interventions. Emergency Planning Teams often consist of members from the university's management and the first accountable officials, including provosts, deans, administrators, and deputies in various areas, including communications and administration. All deputies or general managers are required to be members of the Crisis Management Group. Some deputies, such as the student deputy, are of particular importance. Thus, an effective crisis management team consists of university staff who are well acquainted with each other to make appropriate decisions during a crisis. Most of these members were found in the universities studied, such as the University of Michigan, University of Melbourne, Hong Kong University, Sydney University, etc. According to the results of the studies, the main tasks of the crisis management team include (1) preparing an intervention and support program in the event of a crisis; (2) assessing the effects of the crisis on the university; (3) collecting and disseminating updated information if necessary; (4) Providing necessary appropriate interventions and support for teachers, students, and parents outside the university, temporarily and if necessary; (5) Monitoring the progress of crisis interventions and support; (6) Evaluating the intervention program and support in times of crisis; (7) Coordination and follow up work.¹⁸ In a study by Andrew et al., the crisis leadership team was found to be very efficient because of the benefits of crisis preparation and support. During the interview, the Director of Information Technology stated, "We at the Pennsylvania University had an outstanding crisis leadership team, a team that is involved in crisis

forecasting, crisis management and, most importantly, post-crisis assessment and planning.²⁵ However, some universities, such as Yale University, the University of Minnesota, and Duke University, have not announced a specific crisis team for their crisis programs, making implementing the university crisis program difficult.

In addition, the main components of crisis programs mentioned in most universities include duties and responsibilities, actions, and functions in times of crisis. Therefore, one of the main themes of university crisis programs is that the leading players are appropriately acquainted with their jobs and assignments. Familiarity with people's duties and responsibilities will contribute to an effective response in the shortest possible period in times of crisis. Measures and actions that should be included in the university crisis program in various dimensions are also considered the main components of this program. The main cycle of a comprehensive crisis management program consists of four stages: prevention, statistics, response, and recovery.²⁶ All crisis team members must receive the necessary training in this regard and carry out the planned actions correctly "during" the crisis as well as "before" and "after" the crisis. The crisis management program of universities such as Harvard and Yale also have these components. Yet, most universities studied ignored this cycle and only focused on the response stage, such as Massachusetts, Florida, South Carolina, etc. As a result of defects in the crisis program of those universities, the main sections mentioned in the crisis program are not accurately described.

As for the types of crises mentioned, universities are continuously exposed to many crises, including crises that threaten the health and safety of academics. Most universities have crisis programs in the climate crisis, safety, health, attacks, and threats. Due to their nature, these crises can occur in most parts of the world. Due to these crises' recurrence, priority, and importance, universities endeavor to be sufficiently prepared to deal with them. However, at some universities, due to their physical location, various atmospheric crises may occur, or due to the prevailing culture of that university, some crises, such as rape or suicide, may occur less frequently. Universities that are stronger in terms of security will be less likely to encounter threats and attacks, and universities that are safer and healthier will be less likely to be involved in health crises. In the study of Nelson et al. conducted in K-12 schools, due to the exceptional location of these schools, most crises were related to evacuation crises, storms, threats, and attacks, respectively.¹⁸ In any case, universities should adjust their crisis programs according to their particular circumstances and possible crises that occur in them to prevent damage in the event of crises and restore all to their duties quickly. Among the leading universities that have developed a crisis plan for all existing crises are the University of Michigan and the University of Sydney. Other universities have developed a crisis plan

concerning their position in dealing with critical events at the university. For example, as the COVID-19 crisis has become one of the greatest crises in the world today, prominent universities such as Johns Hopkins University and Vienna each had a unique crisis program for COVID-19. However, many universities worldwide lack plans for crises and will encounter significant problems in the event of a crisis.

This study aimed to identify the crisis management programs at top universities to maintain educational activities in crises. The main limitation of this study is the lack of studies that examine the crisis management programs of universities and higher institutions worldwide. Therefore, the limitation on accessing the information on the websites and journals of these institutions was removed.

Conclusion

One of the strengths of university crisis management programs is their profound commitment to developing an appropriate framework and structure for handling duties and responsibilities and creating a cohesive team to deal with all types of situational crises at most universities, which has facilitated crisis planning and crisis management at higher education institutions.

The identified weaknesses of crisis programs included a lack of attention to a severe type of crisis and a lack of special attention to health crises and pandemics that have caused problems for the university in recent years. As a result, given the high position of universities in the development and comprehensive political, economic, social, and cultural development in any country, officials must view crises within universities differently from those occurring outside of them. Indeed, crisis management in universities is required to be more subtle, more accurate, and more responsible and tactful than many other kinds of crises. Therefore, concurrently, considering the mentioned points, it is necessary to formulate strategies and programs to deal with the crisis. In addition, the priority in the event of a crisis in the university is to maintain dignity, health, security, and comfort as well as to respect the high position of students and faculty members. Students, faculty members, and administrators should receive training in crisis management to prevent or mitigate any possible harm to individuals when dealing with crises in universities. As a result, it is recommended that crisis management officials in universities pay serious attention to this issue.

Acknowledgments

We would like to extend our appreciation to the research and technology deputy of Tabriz University of Medical Sciences for their financial support.

Author Contributions

RGH, YP, and AJ designed and drafted the research and the manuscript. RGH, AJ wrote the first and second drafts of the

paper. RGH, YP, and AJ reviewed the first and second drafts of the manuscript and improved them.

Funding

The Tabriz University of Medical Sciences funded this study.

Ethical Approval

Ethical approval of the study was obtained from the Ethics Committee of the Tabriz University of Medical Sciences (IR.TBZMED.REC.1399.371).

Competing Interests

The authors declare no conflict of interests.

Supplementary Files

Supplementary file 1. Top universities around the world were selected according to the Scimago ranking criterion in 2020

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