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Documenting and recording the empirical knowledge of how to mobilize resources, prepare and set up a biological defense base against the crisis of the COVID-19 disease

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Abstract

The emergence and increasing expansion of organizations has made the management in the effective and efficient performance of tasks require more awareness and knowledge. The present research was conducted to document and record the empirical knowledge of how to mobilize resources, and prepare and set up a biodefense camp against the COVID-19 disease crisis at Baqiyatullah University of Medical Sciences (AS). The current qualitative study was conducted in 2021-2022 at Baqiyatullah University of Medical Sciences (AS). Data collection was done face-to-face using a semi-structured interview with an experienced nutrition expert and converted into text. Then statistical analysis was done using MaxQDA software. The present empirical results lead to the identification and extraction of 193 open codes in 7 areas of incidents, problems, measures, decisions, results and consequences, suggestions, scenarios, and modeling and lessons learned about how to mobilize resources, prepare and set up a biodefense camp against The COVID-19 disease crisis happened at Baqiyatullah University of Medical Sciences (AS). The results of this study can be used as a basis for managers' planning in the implementation of documentation and recording of empirical knowledge on how to mobilize resources, prepare and launch a biodefense camp against the crisis of the COVID-19 disease in Baqiyat University of Medical Sciences.

Keywords: empiricism, biological defense, lesson learned.

Introduction

In the past, growth and development relied on tangible or visible resources, such as physical and financial assets. However, in recent years and up to the present day, this process is based on intellectual capital, such as knowledge and the experiences of human resources (1, 2) This includes how the creation, identification, sharing, and application of knowledge has been proposed as an influential factor in organizational performance (3). Among the intellectual capital, we can mention the experience of people, which is considered one of the most important sources of knowledge and is the result of solving past problems and issues. One of the practical measures to exploit experiences is to record and document them (4). Documenting the experience is a process in which the empiricist tries to accurately document the appearance of an event according to the available statistics and information, the way it was dealt with, and finally the results of it (5, 6). Empiricography aims to accumulate people's experiences and technical knowledge for reuse in the future and can create innovation in products, methods commercialization of organizations (7, Knowledge sharing plays a vital role in the success of any organization, and the dynamics of organizations in this direction is in the acquisition of knowledge and experience of employees and the application of these experiences and skills in the implementation of organizational tasks and roles (9). Knowledge sharing is a process through which people mutually exchange their knowledge with each other, individual knowledge is transformed into organizational knowledge and potentially through this process an opportunity to learn new experiences and an opportunity to practice and implement experiences and skills and abilities are provided (10). Since human capital lies mainly in the minds of individuals, this vital and important knowledge is available to the organization when the employees are willing share it, and, in addition, effective arrangements and mechanisms in this regard are also provided by the organization Therefore, it

can be said that the successful advancement of knowledge management requires that employees share what they know with others in the organization (11). As a result, knowledge sharing is considered as the most basic function of knowledge management in the organization. On other hand, sharing knowledge organizations has brought positive results and led to the improvement of the organization's indicators (12). The growth of organizations depends on updating and applying their knowledge in order to increase the learning capacity of people. Managers have performed different and numerous methods in the field of treatment, education, research, general and specific support, and command and leadership. Management experiences, if recorded and documented, can solve similar problems in the future and lead to improved organizational performance (13).The importance documenting the experience of mobilizing resources, preparing and setting up a biodefense camp against the COVID-19 disease crisis in Baqiyatullah University of Medical Sciences (AS) is because it leads to the storage of information in the organization's memory and prevents their loss and is available. It is necessary to conduct the present study in the direction of the emerging phenomena of organizations. Documenting the experiences of how to mobilize resources, prepare and set up a biodefense camp against the COVID-19 disease crisis in Baqiyatullah University of Medical Sciences (AS) is one of the tools that enable organizations to take more effective measures in the face of problems, from Avoid repeating the mistakes of the past and move faster towards organizational goals and thus achieve a sustainable competitive advantage.

Materials and Methods

The present qualitative study was conducted from March 2021 to March 2022 at Baqiyatullah University of Medical Sciences (AS). In terms of philosophy, this study is interpretive, approach:

inductive, study strategy: case, methodology: complex combination, time horizon: single segment and technique and processes using interview tools (14). This study was conducted in 5 stages. In the first stage, by reviewing the studies and holding various meetings with the research working group in order to identify the categories related to the subject, principles, concepts and its different dimensions were extracted and documented. In the next step, by using review studies and holding various meetings with the research working group, the empiricism protocol of the hospital's paraclinical services staff was determined. Delphi method was used to evaluate the empirical model. In this approach, the identified cases underwent assessment and review by experts and were then revised and corrected by those experts. In the third step, using the interview tool, the experience of the employees was recorded and the code was extracted. Then the open codes were categorized and analyzed using the conceptual model. In the last stage, in order to evaluate the findings and collective agreement, the Delphi method was used, and the items underwent evaluation by experts for revision and correction. The statistical population of this study included managers, experts, and supervisors in the field of resource mobilization, preparation and launch of the biodefense camp against the COVID-19 disease crisis at Baqiyatullah University of Medical Sciences (AS). Also, according to the qualitative approach of this study, sampling was purposeful and data collection was done until the saturation limit was reached. Based on this, the present study was carried out with the participation of 8 managers, experts and supervisors in the field of resource mobilization, preparation and launch of the university's biological defense camp. In this study, the method of interviewing the participants was used to collect information.

In the present study, for the purpose of content analysis, MaxQDA24 software was used, which is a professional software for analyzing mixed and qualitative data for analyzing unstructured data such as interviews. Also, in order to analyze the data, descriptive statistical tests (frequency, frequency percentage, average) were used. SPSS v29, Microsoft EXELE 365 and MaxQDA 24 software were used to interpret and analyze the data in this research.

The present study was conducted based on the ethical guidelines of Bagiyatullah University of Medical Sciences (AS) and has the code of ethics under the number IR.BMSU.REC.1400.121. The researchers in this study made a concerted effort to apply ethical considerations effectively. As such, they prioritized elements such as selecting appropriate studies, interpreting results objectively, obtaining consent from participants, safeguarding the confidentiality of their personal information, respecting their right to withdraw from the study at any point, and ensuring the acquisition of essential information to proceed with the research. These considerations were carefully integrated and implemented throughout the various stages of the study.

Results and Discussion

In this study, 8 managers, experts, and from the field supervisors of resource mobilization, preparation and launch of the biodefense camp of Bagiyatullah University of Medical Sciences (A.J.) participated in facing the crisis of the COVID-19 disease. Of these, 7 people were faculty members and one was nonacademic faculty member. Here, using MaxODA2020 software, the data were first classified according to the pattern and then analyzed. After analyzing the data, the results were divided into three categories: open codes, central codes, and selective codes. In the end, the results of the present study led to the extraction of 193 open codes in the seven dimensions of events, problems, measures and decisions, results consequences, suggestions, modeling, and lessons learned. Tables 1 to 7 show open and central codes and their frequency in the

Table 1. Axial and open coding of the event dimension

area	Axial code	open source
	COVID-19 disease occurred in	1-There are rumors about the spread of the disease
	China	2- Suspicious cases
		3- Many cases of symptoms based on corona
		4- Considering the flu, the outbreak of the
	Coronavirus epidemic	5- Arrival of the first COVID-19 patient
		6- Lack of timely identification
		7- Increasing trend of patients suffering from covid
		19
		8- Confusion of managers and specialists
		9- Inconsistency in the upstream decision-making
		levels
	Safety and health threats	10- Mental burden and fear of illness
		11- Manpower fatigue
		12- Weak awareness of the disease
		13- Lack of necessary preparation in facing the crisis
		14- Illness of a large number of employees
		15- Increasing sick leave
	D : 1 : 1	16- Testimony of several health defenders
	Basic changes in normal	17- Fundamental changes in care services
	activity	18- Significant reduction of normal (elective)
The event		patients
The event		19- Change in normal working hours (mandatory limitation)
		<i>'</i>
		20- Conflict beyond normal power 21- Dealing with a large volume of patients
		22- Exit, control of patients
	Disturbance in classical	23- Restrictions on holding training courses
	education education	24- Closure of face-to-face training classes
	cudeation	25- Impossibility of classical planning,
	Need for medicine and medical	26- Medicinal needs of affected patients and lack of
		-
	equipment	* *
		<u> </u>
	equipment	care equipment 27- Lack of knowledge of diagnosis and prescription of medicine 28- High use of corticosteroids 29- Increasing the use of antibiotics, different

mentioned dimensions.

Table 1 shows the frequency of post-event selective codes with 6 core codes of the spread of the COVID-19 disease in China, the corona virus epidemic, threats to safety and health, fundamental changes in normal activities, disruption in classical education and the different need for medicine and medical equipment, and 29 open codes. Also, Table 2 shows the frequency of selective problem codes with 8 core codes of unpreparedness in facing the crisis, lack of approval of medicine and medical equipment, weak coordination of the queue and headquarters,

weak planning, weak infrastructure, excessive patient referrals, disruption of financial resources. There is no information system and 23 codes are open.

In Table 3, the frequency of selective codes after measures and decisions with 10 core codes: launching a biological defense station in a university, launching a biological defense station in a hospital, activating the vice of treatment, launching a 1000-bed convalescent home, organizing human resources, using students, setting up counseling services, setting up a health center, setting up a mental health center, setting

up a public relations and information system, and 66 open codes are shown.

Table 4 shows the dimensions of the results and consequences and suggestions. The selection code of the results and suggestions includes 6

central codes of starting a convalescent home, revival of jihadi passion, reduction of bureaucracy, human resources capital management maneuver, disorganization, hasty

Table 2. Open axial coding of the problem dimension

Area	Axial code	Open source
	lack of preparation in facing	1-Lack of preparation at the level of the country and
	the crisis of the issue	university
		2- Lack of previous experience in facing biological crisis
		3- Weak recognition of critical situations
		4- Incorrect formation of the hierarchy of the crisis
		headquarters of the country
	lack of supply of medicine and	5- Lack of personal protective equipment
	medical equipment	6- Facing drug shortage
	Weak coordination of line and	7- Multiple and contradictory upstream orders
	headquarters	8- The psychological pressure of the upstream on the
		subordinates
		9- Insistence of the headquarters to carry out line work
		10- Inconsistency of line and headquarters
_	planning weakness	11- Lack of plan in the beginning
Issue		12- Improper guidance
	weak infrastructure	13- Emergency buildings and facilities
		14- Supplying the required force
	too many patients	15- Excessive reference
		16- Unreal crowding
	disruption of financial	17- Reduction or elimination of normal services and
	resources	elective surgeries
		18- Increase in cost due to compliance with health
		protocols
	lack of information system	19- Weakness of needs assessment
		20- Weakness of estimation
		21- Weakness of statistics and information
		22- Lack of recognition of real performance
		23- The variety of numerous and diverse software and
		their lack of efficiency

decisions and 25 open codes. Also, the selection code of the proposals consists of 5 core codes of coordination of headquarters and queue, creation of crisis infrastructure, reorganization, inspection and continuous monitoring, scientific support and 15 open codes.

Table 5 shows the dimensions of the scenario and modeling and the lessons learned as the last identified dimensions of experience in the areas of resource mobilization, preparation and launch of the bio defense base in the COVID-19 crisis. The dimension of scenario and modeling includes 7 core codes and 13 open codes. The core codes of this category include pattern making, creating a foundation, effective and efficient use of jihadi forces, suitable infrastructure, simulating the era of holy defense, creating a multi-purpose standard space and flexible and multi-purpose equipment. The dimension of lessons learned is also identified as the last dimension, including 10

core codes of exercise, burning opportunity, overcapacity, preventing trial and error, drowning in information but thirsty for performance, unit management, being a pioneer in all fields, virtual structure in the form of camp, similar Wartime Chemical Attacks use Holy Defense experience and 22 open codes.

The present study was conducted with the aim of documenting and recording the empirical knowledge of how to mobilize resources, prepare and launch a biodefense camp against the COVID-19 disease crisis at Baqiyatullah University of Medical Sciences (AS). The results of this study led to the identification of 7

Conclusion

Table 3. Axial and open dimensional coding of measures and decisions

Area	Axial code	Open source
	Setting up a bio defense camp in the	1- Activation of the university incident management
	university	system
		2- Continuous meetings on Saturdays and Tuesdays
		3- Providing consulting services in diagnostic fields
		4- Activate the virus research center
		5- Activate training
		6- Activating health
		7- Activating public relations
		8- Activating mental health
	Setting up a biological defense station in	9- Transferring recovering patients to the convalescent
	the hospital	home
		10- Allocation of NBC department to corona patients
		11- Creating the necessary inpatient capacity
		12- Making preparations in Najmia and Kalb Jamaran
Issue		hospitals
	Activation of the treatment assistant	13- Holding weekly sessions of specialized treatment
	Activation of the treatment assistant	14- Preparation of responsibility orders for the members
		of the treatment working group
		15- Announcing full readiness to university affiliated
		centers
		16- Forming an inspection team consisting of treatment
		representatives
		17- Sending a specialized team on a daily basis
		18- draft instructions
		19- Setting up a treatment status room and monitoring
		statistics and information
		20- Preparation and supply of personal protection items
	Setting up a 1000-bed convalescent home	21- Converting the dining hall to the convalescent home
	Setting up a 1000-bed convaiescent nome	of Shahid Soleimani 1
		22- Converting multi-storey parking lot to Shahid
		Soleimani 2 convalescent home
		23- Acceptance of patients in the convalescent home
		24- Installation of beds by Jihadi groups
		25- Setting up and equipping a sacrifice residence for
		medical personnel
	Organization of manpower	26- Determining the temporary structure of manpower in
	Organization of manpower	crisis
		27- Organization based on membership, military and
		employee nature
		employee nature

		28- Writing processes in normal and crisis situations
		29- The formation of the second organization
		30- On call shift
	Use of students	31- Organizing students of the 8th semester of nursing,
	ose of students	health and medicine
		32- Voluntary attendance of students in fever clinics
	Setting up consulting services	33- The country's non-operating defense organization
	Setting up consulting services	34- Laboratory diagnostics
		35- Triage protocol and standards
		36- Daily epidemiological investigation and reporting
		37- Compilation of various protocols and instructions
		38- Compilation of health guidelines for corpse
		management
		39- Compilation of waste management guidelines for
		corona patients
		40- Notification of protective and security measures
	Catting and a health as see	41- Production of virtual education content
	Setting up a health camp	42- Health executive measures
		43- Daily visits to hospitals
		44- Daily visit to bakery, sanatorium
		45- Disinfection and disinfection
		46- Disinfection of places
		47- Car disinfection
		48- Screening and fever measurement of employees
		49- Performance evaluation of production masks
		50- Modifying the method of preparation, packaging and
		distribution of food
		51- Daily visit to catering
		52- Food hygiene monitoring checklists
		53- Continuous monitoring of the use of personal
		protective equipment
	Setting up a mental health center	54- Setting up a mental health center
		55- Development of guidelines for psychological
		interventions
		56- Compilation of instructions for telephone
		consultation
		57- Setting up a phone counseling system
		58- Preparation of numerous clips
		59- Continuous communication and coordination with
		health jihadists
		60- Providing psychological services to discharged
		patients
		61- Setting up an online consultation
		62- Continuous follow-up of the approvals of the mental
		health camp council
	Setting up a public relations and	63- Notices
	information system	64- Clips
		65- Movies
		66- Radio and television interviews
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dimensions of the incident, problem, measures and decisions, results and consequences, suggestions, scenario and modeling, and lessons learned with a total of 193 open codes in the fields of resource mobilization, preparation and launching of the biodefense base. These results were reviewed, completed and revised by experts during several stages until finally the final results of the work in the above areas were extracted. The difference in the number of central and open codes related to each selective code varies according to the topic and areas under investigation. These cases have been specified by experts and experts in detail. Among the identified dimensions, dimensions of measures and decisions and lessons learned with 10 core codes each had the largest amount of core codes. which shows the extent of the dimensions mentioned in the investigated areas and the high importance of these selective codes compared to others. Also, the open codes proposed in connection with each selective code are proof of this issue because most of the open codes proposed are related to the planning and decisions dimension and the lesson learned dimension also gave a significant amount with 22 open codes. Also, after suggestions, the least amount of central code (5 codes) was included, and in terms of the frequency of open codes, this category of selective codes was placed in the category of the least open codes with 15 open codes.

Studies show that the speed of crisis management operations in Iran's governmental and public institutions has been higher compared to the countries involved in the COVID-19 crisis, and Iran's crisis management method has been

Table 4. Axial and open coding of the dimensions of results and consequences and suggestion

Area	Axial code	Open source
	Setting up a convalescent home	1- Evidence-based measures
		2- The measures were not research oriented
		3- Admission of more than 100 patients
	Revival of jihadi enthusiasm	4- Back to the memories of the Holy Defense era
		5- Entry of jihadist forces into the organization
		6- Creating a collective spirit
		7- Empathy and cooperation
	Reduction of bureaucracy	8- Reducing absorption steps
		9- Shortening the organization path
		10- Carelessness in work
		11- Removal of restrictions on the type of shifts
		12- Importance of medical centers from upstream point of view
		13- Preparation for various threats
		14- Competency assessment
Results and		15- The brilliance of people's capabilities
consequences	Maneuver of capital management of human	16- disproportionate distribution of forces
	resources disorder	17- Absence of employees
		18- Irregular illness
	Hasty decisions	19- Planning without studying
		20- Failure to pay attention to safety and security issues
		21- Not paying attention to the legal consequences of
		individuals
		22- Hasty payment of bonuses
		23- Removal of some inquiries from regulatory authorities
		24- Indiscriminate recruitment of human resources
		25- Planning for sisters and canceling it
	Coordination of headquarters and queue	1- Coordination between medical centers
		2- Constructive interaction between the headquarters and the
		ranks
		3- Recording records at the time of the event
Suggestions		4- Facilitating recruitment and use
		5- Proper organization
1		6- Effective notification system

Creating crisis infrastructure	7- Marfouk Crisis System (EOC)
rearranging	8- Formation of critical structure (ICS)
	9- Formation of the second organization
	10- Forming a composite emergency team
Inspection and continuous monitoring	11- Field visits
	12- Holding performance control and monitoring meetings
	13- Coordination of activities
Scientific support	14- Conducting studies
	15- Forming a specialized working group in the field of
	education and research

able to control the problem more calmly, more selflessly and more popularly. The difference between the decision-making pattern of the Islamic Republic of Iran and the pattern of other countries in crisis management is due to the difference in religious views and beliefs, common sentiments in the people and the culture of the countries. In the revolutionary spirit, forgiveness, sacrifice, self-sacrifice and public presence are the basis of work and encourage and create spiritual spirit in government and public institutions and reduce the fear of death; but in the system, capitalism and culture of Western countries, the idea of acquiring wealth and

Table 5. Open axial coding of scenario dimensions and model making and lessons learned

Area	Axial code	Open source
Scenario and	modeling	1-Crisis management
modeling		2- Indexing
		3- Policy making
	Creating "bone"	4- For the depot of equipment needed in crises
	Effective and efficient use of jihadist forces	5- Forming a second organization in a crisis
	Adequate infrastructure	6- Multipurpose parking lot
		7- Emergency Room (EOC)
	Simulation of the era of holy defense	8- The behavior of war conditions
		9- Using the experience of holy defense
		10- Using the experience of the axis of resistance
		11- Preparation for crisis
	Creating a multi-purpose standard space	12- Existence of numerous but ineffective software in the crisis
	Flexible and multi-purpose equipment	13- Interdepartmental coordination
	Combat training	1- The commander's front
Learned		2- Setting up a convalescent home as an exercise
		3- Discovering talents and building courage capacity in crisis
	loosing oportunitites	4- Losing 2 months of opportunity after the outbreak in China
		5- Insensitivity of the government and low sensitivity of the IRGC
		6- Lack of serious action by the university
	overcapacity	7- The multipurpose capacity of forces
	Avoid trial and error	8- Recording past experiences
		9- Minimal study before action
		10- Evidence of methods based on trial and error
	Drowning in information but thirsty for	11- Tendency towards obtaining personal experience
	action	12- Existence of numerous but ineffective software in the crisis
	Unit management	13- Interdepartmental coordination
		14- Coordination of queue and headquarters
	Being a pioneer in all fields	15- Basic attention to jihadist forces
		16- Promoting jihadi spirit
	Virtual structure in the form of camp	17- Formation of the second organization
		18- Organization of jihadist forces

Similar to	o wartime chemical attacks	19- Clients more than the capacity of medical centers 20- Lack of knowledge about the disease and its treatment
Use the F	Holy Defense experience	21- Collaborating with the retirees of the Holy Defense era to set up a convalescent home 22- The successful experience of sanatoriums in responding to the wounded of the holy defense

economic power is the basis of work. Iran, as a revolutionary country and adherent to Islamic selfless and selfless human resources, and this spiritual factor is the reason for achieving a relatively high level of success in the model of fighting against COVID-19. The research showed that the administration of the Islamic Republic of Iran acted relatively quickly and successfully in detecting and controlling the first wave of COVID-19 and this success was due to the revolutionary spirit of the Muslim nation of Iran and the organization experienced in the war, therefore, in line with the findings of this study. the mobilization of resources and the size of the biological defense camp in the face of the COVID-19 crisis, along with the revolutionary spirit of the Muslim nation of Iran, can help to better manage the crises of acute respiratory infections in the future (15).

The following documentation and research were conducted to identify challenges in mobilizing resources and establishing biological defense camp during the COVID-19 crisis. The results aim to provide insights for managers to enhance structures, functions, and services in the future. In this regard, a detailed checklist is compiled to record experiences and empirical components in seven sub-groups: events, problems, measures and decisions, suggestions, scenarios and models, and finally lessons learned. Due to the novelty of the present study, the results of this study can include lessons learned and models for managers supervisors, and can be useful and solve problems in the occurrence of similar problems in the future.

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teachings, is practically able to apply the model of crisis management with skilled, dedicated,

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