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The Empiricism of Human Resource Management of the Selected University of Medical Sciences in Covid-19 Disease Crises

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Abstract

Background: During the working period, employees face a wide variety of organizational problems and issues, leading to decision-making based on their knowledge and mental models to take appropriate actions. The aim of this study was to document and record the empirical knowledge of how to provide, organize, and use the human resources of the selected Universities of Medical Sciences in the face of the Covid-19 crisis.

Methods: The present study used a literature review study and documentary research to find research orientation, application, and evaluation, research philosophy of understanding phenomena, inductive research approaches, research strategy for case study, exploratory and descriptive purpose, one-section time horizon, and the method used for data collection. After collecting data, Excel software (version, 2019) and MaxQDA (version 2020) were used to analyze the data.

Results: Results from the present empirical study led to the identification and extraction in seven dimensions of the incident, problem, decisions, output and outcome, suggestions, scenario and pattern, and lessons learned from human resource empiricism of selected Universities of Medical Sciences. The frequency of sub-sets of the incident, problem, decisions, output and outcome, suggestions, scenario and pattern, and lessons learned were 38, 146, 117, 66, 60, 19, and 68, respectively.

Conclusion: Results from this study can be used as a basis for managerial planning in the implementation of experience documentation for human resource management.

Keywords: Human resources; Covid-19; Lessons learned; Empiricism.

Introduction

The covid-19 disease, caused by the Coronavirus, began in December 2019 in Wuhan, China, and has spread to other countries [1,2]. The Covid-19 disease entered Iran in February 2020 and has affected many people. According to the responsible organizations, about 259 and 5 million people have been infected and lost their lives so far, respectively. In Iran, approximately 6 million infections have been reported, and about 129 thousand people of who have lost their lives [3,4]. This disease has had extensive consequences for the livelihood, health, and economy of individuals and health systems in countries, and many hospitals and medical centers in the world have been affected by this disease and its management [5]. This emerging disease was able to challenge the health management of countries and led to various experiences to deal with emerging diseases. Recording the experiences of different countries has offered different strategies to decrease the prevalence of Covid-19, showing that lessons learned from experiences play an effective role in controlling diseases. Experience is one of the most important sources of knowledge gained in solving past problems. This could lead to improved organizational performance when well-documented. Experience, as a summary of knowledge and expertise, is one of the most important sources of knowledge [6-8]. Human resource management, as another important point, means understanding the importance of an organization's human resources, which leads to organizational excellence, entrepreneurship, quality, and the like. Growth, increasing the level of capabilities, and organizing the human resources of an organization to achieve the goals of the

organization are summarized in the perspective and intellectual level of human resource management; this management level plays an important role in the failure and success of the organization[7,9,10]. Human resource management is the human aspect of management and is the most important factor in improving the quality and quantity of products and services in the organization [11]. The philosophy of human resource management makes it very clear in that the necessary coordination must be established between the organization and human resources in order to accept common organizational goals and also ensures the achievement of organizational goals and human resources. For this reason, human resource management is the process of identifying, selecting, recruiting, training, and human resource training resources to achieve organizational goals[11,12]. Experience is part of the tacit knowledge of any organization. Tacit knowledge, which accounts for 80% of organizational knowledge, is largely unwritten. This knowledge exists in the minds of individuals and is not easily transferable to other individuals[13].

Therefore, to better identify an unknown event such as Covid-19 disease, using tacit knowledge and lessons learned during that event can lead to the identification of more practical solutions. Selected University of Medical Sciences is one of the leaders in health in Iran during the Covid-19 Crisis by providing extensive services to Covid-19 patients. Management of acquired knowledge during facing this disease and identifying and documenting it can be valuable knowledge that can be used in potential future crises and biological wars. The use of documented experiences, as mentioned earlier, is one of the most valuable human assets. In other words, documenting experiences gained in different situations can help organizations achieve their strategic goals. Therefore, the present study aimed to identify and investigate the factors affecting the supply, organization, and use of human resources in the face of the Covid-19 Crisis based on experimental knowledge in the selected university.

2. Methodology

2.1. Ethical considerations

The present study was conducted by the recommendations of ethical guidelines, IR.BMSU.REC.1400.121. The protocols carried out in this investigation were approved by the selected University of Medical Sciences.

2.2. Study design

This study is qualitative research with a guided inductive approach with used documentary research and questionnaires in terms of research applied orientation, application, and evaluation orientation; research philosophy of understanding phenomena; inductive research approach; research strategy used for the case study; exploratory and descriptive purpose; one-section time horizon; and the method used for data collection.

2.3. Sample size

The present study was conducted among selected managers and experts of human resources from the selected University of Medical Sciences who have been active in the Covid-19 disease crisis. Because the present study is qualitative, the sampling was purposive, and data collection was carried out until data saturation. Accordingly, the number of participants in the present study was 15.

2.4. Data collection

A literature review study was first conducted, and then several meetings were held with the research working group to identify items related to the topic. Afterward, its various dimensions were extracted and documented by examining the principles. Therefore, the panel survey methods workshop was used to identify the concepts and design the model. In the second step of the study, the Delphi technique was used to evaluate the model. In this method, the extracted concepts were evaluated by experts to be corrected if necessary.

2.5. Research instruments

The data obtained from this method depend on several factors, including the validity and reliability of the questionnaire, the accuracy of the selected sample, execution correctly, and items such as the accuracy and correctness of statistical analysis performed on the data. The data collection instrument in this study was a questionnaire. First, information related to the Covid-19 disease crisis was obtained through a literature review, focus group formation, and interviews with people involved in the crisis. Then, the factors were identified using the relevant coding. For this purpose, studies and topics published in the field of Covid-19 were extracted using keywords such as empiricism, Covid-19, the lessons learned, and crisis management in databases such as Iran Medex, Magiran, PubMed, ISI, and Scopus. After extracting the factors and forming the interview protocol, the managerial experience of the hospital managers was recorded using direct interviews, and the codes were extracted. Therefore, the dimensions of empiricism in different countries were extracted using a literature review. Subsequently, the Delphi method was used to evaluate the model. In this step, the questionnaire was Weighted using the factors extracted in the previous section and with the opinion of the panel of experts. Rand Corporation first introduced the Delphi technique in the 1950s. The Delphi method is a forecasting process framework based on the results of multiple rounds of questionnaires sent to a panel of experts[14]. After each round of questionnaires, the experts are presented with an

aggregated summary of the last round, allowing each expert to adjust their answers according to the group response. This process combines the benefits of expert analysis with elements of the wisdom of crowds. Initially, a protocol with open and closed questions was prepared and sent to the experts. After collecting experts' opinions in the first round, the initial questionnaire was reviewed. The questionnaire was then sent to the experts for the second time. The purpose of these surveys is to reach a full agreement on the questionnaire questions[15].

Selecting the right experts, designing valuable questions in the first stage, and paying attention to the opinions of experts in each round of review guarantee the success of the Delphi method.

2.6. Statistical analysis

MaxQDA software (version 2020) and Excel (version 2019) were used to analyze the data in this study. The present study was conducted in two phases of resource content analysis related to how to supply, organize and use human resources in the Covid-19 disease crisis and to model the relationships between the identified factors using the Delphi method.

3. Results

Table1 indicates the results obtained from the demographic characteristics of the interviewees and experts participating in the study. As shown in Table 1, 15 individuals participated in this study; the lowest and highest work experience of the participants were 10 and 30 years, respectively, and their education level was between an associate's degree and a doctorate. Furthermore, 87.1% of the participants were male, and 66.6% had work experience between 10 and 20 years.

Table 1- Demographic characteristics of the participants used in this study

No	Education level	Work experience (year)	Membership
1	Doctorate degree	10	Faculty member
2	Doctorate degree	30	Permanent Employee
3	Master degree	23	Permanent Employee
4	Master degree	20	Permanent Employee
5	Master degree	20	Permanent Employee
6	Master degree	17	Permanent Employee
7	Master degree	15	Permanent Employee
8	Bachelor degree	25	Permanent Employee
9	Bachelor degree	24	Permanent Employee
10	Bachelor degree	23	Permanent Employee
11	Bachelor degree	21	Permanent Employee
12	Bachelor degree	20	Permanent Employee
13	Bachelor degree	16	Permanent Employee
14	Bachelor degree	13	Contractual employee
15	Associate's degree	15	Contractual employee

In this study, the data in the MaxQDA2020 software were first categorized based on the pattern and then analyzed. Results from this study showed 111 factors with a frequency of 512 in seven dimensions of the incident (36), problem (146), decisions (117), output and outcome (66), suggestions (60), scenario and pattern (19), and lessons learned (68). Among the mentioned dimensions, the lowest and highest frequencies were related to scenario and pattern and, problems, respectively. The high psychological burden of human resources was the most frequent issue in the dimension of the incident. This factor indicates the impact of the Covid-19 Crisis on the psyche of individuals, which has also led to an impact on their performance. The dimension of the problem deals with the central issue of the Crisis, which represents the main factors of crisis organization and control. Most of the codes expressed in this category, including weakness planning, weakness human resource management pattern, and excessive human resource accumulation repeated 29, 23, and 13 times, respectively (Table 2).

The dimension of the decisions showed the things that need to be considered in the future to control the Crisis. In this category, the three topics of reorganization, reorganization, providing data for planning, and the formation of the second organization with 40, 18, and 14 repetitions were found to be the most essential topics expressed by the interviewees. The dimension of the output and outcome was divided into two categories of positive and negative consequences, which had 30 and 34 factors, respectively. The most important positive and negative consequences of the Covid-19 Crisis were unity and empathy, and the disproportionate distribution of personnel with 4 and 7 repetitions, respectively (Table 3).

Table 4 indicates the dimensions of the suggestion and the scenario and pattern. Dynamic planning with 37 repetitions was identified as the most critical suggestion. In the scenario and pattern dimension, the Factors of the formation of the second organization in the Crisis and the forecast of the organization for normal conditions had the highest frequency.

Table 2 - Frequency of Factors in incident and problem dimensions

Dimension	No	Factors	Frequency
Incident	1	Feeling the urgent need for human resources	5
	2	Disruption of normal human *resource activities*	3
	3	The high psychological burden of human *resources*	8
	4	Fundamental changes in care services	2
	5	Employees infected with Covid-19 disease	2
	6	Judicial and disciplinary violations	3
	7	Human resource fatigue at the Beginning of the Covid-19 crisis	2
	8	Change in normal working hours	3
	9	Human resource events	10
Problem	1	The conflict between the queue and the headquarters	7
	2	Human resource crisis due to unpreparedness	1
	3	Weakness in the human resource management pattern	23
	4	Numerous and contradictory orders of upstream managers	3
	5	Prevalence of Covid-19 disease at the same time as Nowruz holidays	2
	6	Dispersal of personnel in units and getting out of human resource management	6
	7	The lack of specialized personnel due to the increase in patients with Covid-19	4
	8	disproportionate human resource accumulation	13
	9	The lack of mechanisms to register staff disease	2
	10	The lack of integration of human resource statistics and information	1
	11	Salary and benefits	1
	12	Variety of soft wares	1
	13	Increased volume of court cases	10
	14	The lack of attention to organize sick people	2
	15	The main task of nursing services	2
	16	Challenge of jihadi volunteers	11
	17	Imposing double work on human resources for various calls	2
	18	Pre-crisis unpreparedness	10
	19	Weakness in planning	29
	20	Individual resistance	4
	21	Organizational resistance	12

Table 3- Frequency of Factors in decisions dimension and output and outcome dimension

Dimension		No	Factors	Frequency
Decisions		1	Forming a human resource team	**5**
		2	Reorganization	**40**
		3	The formation of the second organization	**14**
		4	Fundamental changes in the human resources system	**4**
		5	Interact with Social Security	**2**
		6	Provision of human resources	**9**
		7	Spiritual and material support for employees with Covid-19 disease	**4**
		8	The need of Employee for assessment	**3**
		9	Determining the capability of employees	**5**
		10	Providing data for planning	**18**
		11	Facilitating the recruitment of individuals	**5**
		12	Empowerment	**8**
Output and Outcome	**Positive**	1	Maneuver for human resources	**2**
		2	Assessment of competencies	**2**
		3	Realization of jihadi spirit	**2**
		4	Some people shine	**2**
		5	Unity and empathy	**3**
		6	Self-sacrifice	**2**
		7	Reduce recruitment steps	**4**
		8	Reduce selection time	**2**
		9	Hierarchy flexibility	**2**
		10	Reduce administrative bureaucracy	**1**
		11	Encouragement from the Commander-in-Chief	**2**
		12	Accelerate the organizing process	**3**
		13	No strictness in shift work	**2**
		14	Reassuring employees	**2**
	Negative	15	Disproportionate distribution of personnel	**7**
		16	Increase the workload of the human resource unit	**2**
		17	Hasty decision	**1**
		18	Feeling injustice in payments	**2**
		19	Violations of some employees	**4**
		20	Legal issues arising from the unusual recruitment and employment of employees	**2**
		21	Impressive weakness of human resources	**2**
		22	Removing some inquiries from references	**2**
		23	Over-recruitment of human resource	**3**
		24	Withdrawal of many tasks from human resource management	**2**
		25	Feeling injustice in encouragement	**2**
		26	Service Compensation Challenge	**2**
		27	Staff fatigue	**2**
		28	Disorganization	**2**

Table 4- Frequency of Factors in suggestion and scenario and pattern dimensions

Dimension	No	Factors	Frequency
Suggestions	1	Forming a specialized working group	2
	2	Dynamic planning	37
	3	Holding empowerment courses	3
	4	Management dashboard design	1
	5	Inter-unit coordination	3
	6	Awareness movement	1
	7	Coordination between the queue and the headquarters	2
	8	Permanent employment	3
	9	Documentation of records at the time of the event	4
	10	Use of intelligent systems	2
	11	Effective motivational system	2
Scenario and Pattern	1	Formation of the second organization in crisis	3
	2	Forecasting the organization for normal conditions	3
	3	Estimating human resource supply	2
	4	Determining effective service compensation	2
	5	Learning skills	3
	6	Online reports	2
	7	Various maneuvers to readiness	2

Dimension of the lessons learned includes four factors, of which the maintenance section was identified as the most important factor (Table 5).

Table 5- Frequency of Factors in lessons learned dimension

Dimension	Factors	No	Factors	Frequency
lessons learned	Recruitment	1	Forming a bank of volunteers	6
	Education	2	Modeling	2
		3	Teaching self-help and helping others	1
		4	Focusing on internal capacities	2
		5	Identifying talented people	2
	Organization	6	Unit management	2
		7	Prevalence of Covid-19 disease	1
		8	Simulation of the era of sacred defense	1
		9	Documenting experience for the future	2
		10	Practice human resource management	2
		11	Reducing bureaucracy	4
		12	Statistical analysis	2
		13	Applying two software engineers	2
		14	Classification of personnel in crisis	5
		15	Key agent statistics	2
	Maintenance	16	Multipurpose staff	2
		17	Significant human resources with a jihadist commitment	1
		18	Leadership	10
		19	Strengthen the jihadist spirit	5
		20	Honoring employees	2
		21	Happy spiritual environment	2
		22	The continuous presence of managers	2
		23	Proper welfare services	2

4. Discussion

The present study aimed to identify and investigate the factors affecting the supply, organization, and use of human resources in the face of the Covid-19 Crisis based on experimental knowledge in a content analysis study. This study showed that empiricism in the Covid-19 Crisis has seven dimensions, including problem, decisions, output and outcome, suggestions, scenario and pattern, lessons learned dimensions. Importantly, the problem dimension was found to be the most frequent. Based on the results, the most important events of human resource management were achieved in the face and contrast with COVID19, fundamental changes in regular activity, shortage of staff, disproportionate staff, safety threats, and unemployment health of specialized teams.

In a study conducted in 2021, Labaf et al. evaluated the challenges and strategies for managing the Covid-19 crisis. In that study, the most critical challenges of this Crisis were reported to be the lack of preparedness at the macro-level, impracticability of controlling the use of personal protection equipment (PPE), and the consumption of medications, as well as provision of equipment, medications, and protecting medical devices. Strategies and interventions in this Crisis were classified in human resources, education, communications, clinical work, decision-making, and organizational activities[16].

Strategic human resource management in Iran requires careful design and implementation of development and management plans[17]. The empiricism evidence presented in this study indicates fundamental changes in regular activity. The most critical problems of human resource management in the Covid-19 disease crisis were identified and included the lack of preparedness in the face of crisis, weak interaction between headquarters and queue, weakness of human resource management model, weak human resource management planning, organizing jihadi volunteer forces. In a study, Inanloo et al. also stated that the Covid 19 epidemic has created a widespread global health crisis. This crisis requires a change in behavior on a large scale and imposes significant psychological burdens on individuals[18]. In a study in the field of Covid-19 Crisis management axis carried out by Payendeh et al. it was found that the use of emerging technologies such as big data and artificial intelligence is practical at least in the early stages of the crisis[19]. Based on the results, they obtained reorganization of human resources, formation of the second organization, statistics and information for planning and spiritual, the most important decisions of human resource management in the face of Covid-19 disease crisis, and material support. Existing experiences and documents showed some positive and negative consequences of this event in human resource management after the Covid-19 epidemic. In a study, Latif et al. showed that the world is in the grip of a crisis that has been unprecedented in contemporary history. The covid-19 epidemic is a global, high-impact emergency[20]. In addition, the most essential suggestions dimension of human resource management in this study was found to be dynamic human resource planning, empowering employees, coordination between headquarters and queue units, and development of human resource systems. The most crucial scenario and pattern of human resource management obtained in this research included the second organization in crisis, forecasting the organization for every day conditions, estimating human resource supply, determining adequate service compensation, learning skills, online reports, various maneuvers to readiness, and holding meetings to justify managers and employees. The present empiricism based on strategic management showed that designing a human resource management system in crises is a necessary pattern in the face of that Crisis. There are sometimes duplicate activities in the system without designing such a pattern, while increasing system costs. Lastly, recruitment, education, organization, and maintenance were the most important lessons learned from human resource management in the face with and contrast with the COVID-19 Crisis. One of the limitations of this study is the difficult conditions of data collection due to the limitations caused by the prevalence of Coronavirus disease and the unavailability of individuals. Based on our findings, it is recommended to use some valuable approaches, including production of empiricism media (media and multimedia productions in different languages), a special plan for broadcasting empiricism with a specific brand, production of a comprehensive book on empiricism, providing a comprehensive, integrated and indigenous pattern for empiricism for experience in different contexts and local, national, regional and international approaches to empiricism for future studies.

5. Conclusions

Human resource management in times of Crisis can be examined from different aspects. Results from the present study showed that the Covid-19 crisis consists of seven dimensions. The most essential dimensions included the problem, results, outcome, and lessons learned. Results obtained from this study can help prevent future crises and decrease the costs imposed on human resource management. Additionally, the present study can be used as a basis for managerial planning in the implementation of experience documentation in human resource management.

Authors' Contributions

R.T and M.M cooperated in design and concept of the study. R.T and M.M developed the search strategy and assessed the risk of bias of the meta-analyses. R.T, and M.M extracted the data and conducted the analyses. R.T drafted the manuscript. R.T, and M.M interpreted the results. R.T revised manuscript. All authors read and approved the final manuscript.

Conflicts of Interest Disclosures
None

Consent for Publication

All the authors approved the publication of the manuscript in the International Journal of Travel Medicine and Global Health (IJTMGH)

Ethics approval

The present study was conducted by the recommendations of ethical guidelines, IR.BMSU.REC.1400.121. The protocols carried out in this investigation were approved by the selected University of Medical Sciences.

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