

Innovative Human Resource Management Practices in the Healthcare Sector during Times of Uncertainty: A Systematic Review

SK Sindu Bharathi, S Sujatha*

Faculty of Management, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu-603203, India. *Corresponding Author's Email: sujathas@srmist.edu.in

Abstract

With the sudden emergence of crisis scenarios like COVID-19, global healthcare systems are now undergoing disruption, uncertainty, and complexity. Health service providers are refocussing their interest on framing various alternative human resource strategies to ensure continuity of business and deliver high quality patient care. A comprehensive review of the existing literature might aid in the creation of innovative strategies and enhance their understanding in crisis handling. By using titles, keywords, and abstracts, the current research paper evaluates peer-reviewed literature available in the Scopus database. An extensive, systematic literature search was carried out and the study comprised the articles that best met the criteria. Following this, bibliometric analysis was done using VOS Viewer to create theme clusters. Notable patterns and themes from the literatures obtained for the purpose of this study are revealed through the network map construction process employing bibliographic coupling and co-citation analysis. Our study provides an in-depth agenda for future researchers based on the results that we draw.

Keywords: Bibliometric Analysis, COVID-19, Healthcare, Human Resource Strategies, Innovation, Literature Review.

Introduction

A number of regional, national, and local crises—including the energy crisis brought on by the conflict in the Ukraine, the tsunami in Japan, and the wildfires in California—as well as several global crises—including the Global Financial Crisis and the COVID-19 pandemic—have occurred over the past two decades. Such crises, specifically the COVID-19 pandemic, have fundamentally caused organizations to re-evaluate how they deal with their human resources during the initial to middle stages of a crisis, which are marked by significant levels of uncertainty, and in the later stages of the crisis and post-crisis stages, as organizations and their employees readjust to the "new normal" and in certain instances ascend to the pre-crisis environment. Healthcare uncertainties increase during the pandemic, hindering value co-creation practices (1). Physicians may spend less time with patients than usual due to concerns about chronic communicable diseases. Healthcare professionals' fast adaption to new positions raised concerns about their skills and job security. Due to lockdowns, non-COVID-related procedures

dropped, while breakouts caused surges, making resource management problematic (2). The pandemic highlighted the need for healthcare organisations to improve resilience and response methods for future public health emergencies (3). First, as the pandemic spreads faster, there will be increased pressure on healthcare professionals to plan ahead and be prepared to cope with a rapid surge in caseloads (4). Due to its quick spread and tendency for mutation, Covid - 19 has become a significant worldwide public health problem and has left the healthcare industry with volatility, uncertainty, complexity, and ambiguity. Continuity of operations, low staff engagement, remote working, and employee anxiety of coming to work because of the virus's spread are some of the organizational issues this pandemic has brought about, according to studies (5). To effectively combat transmissible diseases like Covid-19, measures that may prevent the virus's transmission must be synchronised with hospital healthcare providers guaranteeing the best possible patient care (6). Secondly, the COVID-19

This is an Open Access article distributed under the terms of the Creative Commons Attribution CC BY license (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

(Received 16th July 2024; Accepted 25th October 2024; Published 30th October 2024)

pandemic had significant consequences on healthcare systems, which included a) challenges in recognising and isolating infected patients b) diagnosing infected or probable patients c) excessive workloads for medical, paramedical, and administrative personnel d) patient misdiagnosis having other medical conditions e) inadequate use of healthcare resources. As a way to prevent halt the spread of the virus, the regulatory bodies have formulated strict regulations, such as lockdowns, wearing face masks in public places, necessitate healthcare workers to carry PPE kits, and educational initiatives that educate individuals the way to properly use hand sanitizer and cleanse their hands (7). One of the key elements in the creation, development, and execution of any system is the team of people engaged in formulation of necessary policies for the organization which will ensure employee performance, efficiency, productivity, growth, profitability, and employee turnover providing quality care delivery for infected patients and balancing the crisis circumstances (8).

Thirdly, in response to this challenge, practically every organization places a high priority on the employees' health, safety, and well-being. Managers of human resources are in the position of recruiting personnel, overseeing workers' productivity, salaries, and benefits, as well as formulating novel, creative, and practical solutions to problems that affect the workers' well-being and providing them with support through an efficient management strategy (9). The psychological issues that were seen among employees during the Covid 19 epidemic were noted in several studies, and it is crucial to create effective human resource approaches to deal with employee stress, anxiety, and despair. An exceptional probability to examine and revise the approaches of the business in managing human resources is laid out by the Covid 19 crisis. Out of crises emerge opportunities (10). Diverse ecological, financial, political, or health-related issues such COVID-19, should be taken as possibilities for assessment and enhancement of the competencies of both personnel and organizations (11). Due of the tremendous detrimental effects Covid 19 has on multiple organizations throughout the world this thorough scoping review study's purpose is to identify unanticipated obstacles, fresh ideas, and uncommon decisions in regard to the methods for

handling human resources used throughout the world for enhancing organizational performance and provide solutions. The study aims to assess the challenges involved in managing human resources to deliver optimal quality of service during times of uncertainty, evaluate the significance of having an innovative crisis management plan to cope with global emergencies, and examine recent advances in human resource management to expand the study's scope in the future (12). Literature reviews indicate gaps in research in the discipline and enable scholars explore untapped areas. Researchers utilise systematic review, scoping review, meta-analysis, and weight analysis to publish current literature reviews. The present research used systematic literature review (SLR) and bibliometric analysis to thoroughly examine the area while defining its cognitive content. Emerging epidemics, economic downturns, and disasters from nature put enormous strain on the healthcare industry. HRM innovation that improves staff resilience, adaptation, and performance assists in addressing these concerns. A literature-supported conceptual framework outlines how innovative HRM practices benefit healthcare outcomes amid uncertainties.

In healthcare perspective, uncertainty implies unforeseen and swiftly evolving occurrences, such as the COVID-19 epidemic, where unpredictable outcomes, fluctuating recommendations, and insufficient precise information affect decision-making and planning complex. Uncertainty stems from a variety of reasons, including changing infection rates, the introduction of new variations, the availability of resources such as personal protective equipment (PPE) and vaccines, and the impact of government regulations. Clinical and operational management are affected by uncertainty, thus healthcare systems must be flexible and adaptable (13). In a crisis, healthcare organisations need flexible staff management. Redesigning jobs and scheduling enables for flexible working hours, task-sharing, and staff redeployment to handle varying patient loads (14). Non-essential healthcare personnel can work remotely and telemedicine can reduce clinical staff physical exposure (15). HRM approaches emphasise on psychosocial support through counselling, mental health programmes, and resilience training to preserve employee morale and minimise burnout (16). Regulating workloads,

providing breaks, and delivering financial incentives like hazard pay can maintain employee engagement (17). By cross-training healthcare personnel for crucial jobs and providing crisis management and leadership training, resilience and crisis training improve the workforce's flexibility and adaptation in unanticipated scenarios (18, 19). By anticipating absenteeism and dynamically allocating staff, AI-driven personnel scheduling and predictive modelling can optimise workforce (20). Smartphone apps and dashboards provide real-time updates to health care providers throughout emergencies. Furthermore, agile hiring processes and retention programs like career advancement and disaster compensation plans help healthcare organisations fill essential positions while Retaining Staff during Prolonged Uncertainty (21).

Methodology

The present study employed SLR as the process involving articles that focus on organizational experiences of the COVID 19 pandemic and organizational-level response to the same. It is simpler for researchers to conduct systematic study swiftly when electronic databases are more widely available. SLR and Bibliometric analyses were combined for the current research. In order to extract the sample set of research articles, we first performed the SLR by entering the necessary keyword into the Scopus database between March 2020 and March 2023, and then we used the inclusion and exclusion criteria to extract the sample set in a systematic manner. Putting particular attention on healthcare interventions and organizational experiences in extremely dire emergency scenarios like the Covid 19 epidemic, we searched papers from Scopus database. For our current study, the Scopus database provided access to the best sources of research publications. The biggest abstract and citation database for peer-reviewed literature, Scopus includes content from top publishers. According to keyword searches are a good technique to identify articles that are pertinent to your research (22). To find the most pertinent study in our research topic, a combined search of the Scopus—Title, Abstract, and Keyword database was conducted. Search criteria included the following key terms like Human resource strategies, Healthcare, COVID-19, Innovation, literature review, bibliometric

analysis. In order to better grasp the conceptual framework of the subject area, we conducted a bibliometric analysis of the literature on innovative HR practises used during times of crisis. Reporting and assessing systematic reviews and meta-analyses utilises the PRISMA flowchart. Study provides PRISMA flowchart as evidence-based document (23). Since the research dealt with management streams, we confined search terms to business, management, and accounting. After filtering the subject area, document types are limited to articles excluding book chapters, conference papers, books, editorials, issue papers, and other non-referred publications to ensure double peer-reviewed articles for a systematic literature review (24). Following that, the articles are filtered to only include those written in English. Based on the preceding specifications, Scopus and Web of Science retrieved 56 documents. Thirty eight publications were deemed inappropriate after reviewing the Title, abstract, and findings, keeping 18 for the study. Bibliometric connections are generated and portrayed with VOSviewer. It is commonly used in academic research to map author, journal, keyword, and publication links. It analyses massive datasets of publications, citations, and co-authorship networks for bibliometric analysis. It helps users find noteworthy publications, authors, publications, and fields of study. Due to its capacity to display bigger bibliometric maps in an understandable manner VOS Viewer was chosen for the current study.

Selection Criteria

Choosing relevant articles was the primary stage, which involved looking at the title and abstract of the retrieved references. The full texts of reports that seemed appropriate based on their titles or abstracts were gathered, and they were examined independently for suitability and relevance. All publications covering the challenges and approaches of managing personnel during the COVID-19 outbreak fulfilled the criteria for inclusion. According to the literature review's objective, the inclusion criteria outlined as below:

Inclusion of Articles

- Articles published in Peer Reviewed Journals.
- Research publications on personnel management during the COVID-19 pandemic.
- Studies published in the English language.

- Studies which included all types of psychological impacts such as anxiety, fear of the virus, distress, stress, work overload among healthcare workers were taken.
- Only Empirical articles.

Exclusion Criteria

Exclusion criteria improve systematic literature reviews' focus, accuracy, and appropriateness. Clear definition and justification of these criteria helps develop a clear and reproducible review process, minimise bias, and ensure reliable outcomes. Study exclusion criteria are as follows.

- Non-English language publications.

- Subject area.
- Papers lacking full texts.
- Articles that were out of scope and lack of details for evaluation.
- Conference abstracts, editorials, dissertations, and non-peer-reviewed articles.
- Publications other than the time frame from March 2020 and March 2023 were excluded.
- Duplicate studies.

Figure 1 illustrates a schematic diagram that describes the procedures for finding, filtering, and getting the right number of articles in addition to data extraction.

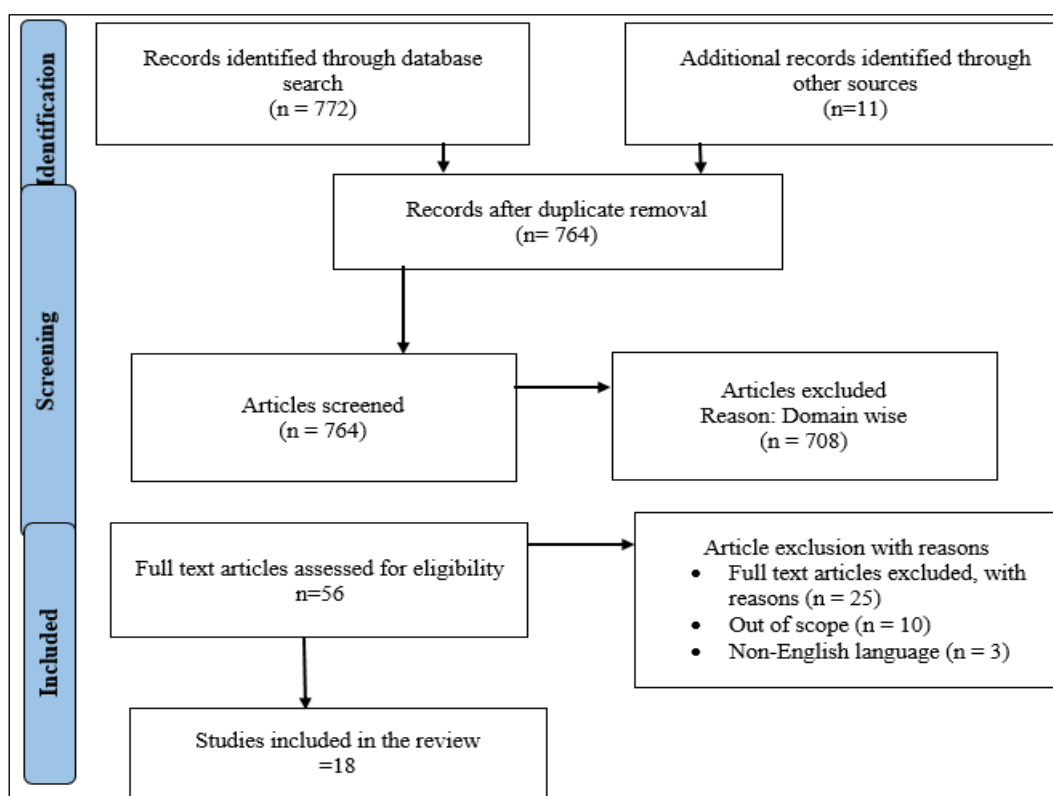


Figure 1: The Selection Procedure for Publications Used in the Present Research

After carefully choosing 56 papers based on inclusion and exclusion criteria from the articles after evaluating their titles and abstracts, 18 publications were ultimately included in the study. The top cited research papers pertinent to the subject are included in Table 1, highlighting HRM

contributions and healthcare implications. These highly referenced publications emphasise the relevance of strategic HRM in promoting staff resilience, increasing patient care quality, and increased organisational adaptability in the face of adversities, forming the basis for the current study.

Table 1: Most Cited Research Papers Relevant for the Study

S. No	Name of the Author	Impact Factor	Quartile	Article Description
1	Paquay <i>et al.</i> , (25)	3.4	Q1	The objectives of this study, which uses a mixed-methods approach, are to: 1) detect changes in the hospital OMC before and during the first wave of the Covid-19 crisis; and 2) further analyse and compare the impact of the crisis on staff perspectives.

2	Vindrola-Padros <i>et al.</i> , (26)	4.837	Q1	The objective of this study is to identify factors influencing HCWs' experiences and their support requirements during the COVID-19 pandemic.
3	Moynihan <i>et al.</i> , (27)	3.4	Q1	In this study, the effectiveness of the several municipalities in Sweden at controlling the Covid-19 epidemic is evaluated. Its objective is to ascertain if the primary healthcare system in Sweden performed differently in each region during the COVID-19 pandemic.
4	Xu <i>et al.</i> , (28)	3.4	Q1	In this work, System Dynamics (SD) simulation has been used to predict the patient flow in public hospitals in order to manage the ICU and ward capacity available throughout the COVID-19 period.
5	Azizi <i>et al.</i> , (29)	3.776	Q1	In addition to the customary HR practises, innovative modification based on organizational evaluation and requirements for efficient business operations are looked at.
6	Brun <i>et al.</i> , (30)	3.4	Q2	Findings from this study might aid healthcare organizations in improving the agility of their Covid care operations.
7	Klein <i>et al.</i> , (31)	3.4	Q1	Using an evidence-based strategy for disaster preparation, this article presents the argument that hospital managers should increase the facilities' capacity for surges during dengue epidemics.
8	Tzeng <i>et al.</i> , (32)	3.4	Q1	In order to balance performance during the COVID-19 epidemic with the need to prevent the health of persons with existing problems from getting worse, this review paper seeks to raise concerns for decision-makers and health service providers.
9	Bagchi <i>et al.</i> , (33)	3.4	Q1	This article exhibits superfluous travel has the greatest effect and is the most crucial component in Viral spread. The following crucial steps in dispersing the same include touching one's own bodily parts and shaking hands.
10	Manuti <i>et al.</i> , (34)	2.24	Q2	The author stressed that the COVID-19 pandemic is a clear signal to the Indian economy to adopt sustainable development models that are based on autonomy, egalitarian frameworks, and ecological sustainability.
11	Butterick <i>et al.</i> , (35)	6.11	Q1	The study investigates the moderating impact of personal factors like health on the link between involvement and HRP satisfaction and indicates that it significantly raises it. The potential pressures that HRP-related resources may have on the workforce are acknowledged.
12	Adam <i>et al.</i> , (36)	3.752	Q1	This study advances our understanding of the creation of COVID-19-focused HRM strategies and their potential for practical deployment.
13	Bouaziz <i>et al.</i> , (37)	4.02	Q1	In order to throw light on the link between innovative practises and the performance and survival of SMEs, this study intends to construct a theoretical model while highlighting the supporting role that outside assistance plays in such a relationship.

14	Di Giuseppe <i>et al.</i> , (38)	0.647	Q1	The goal of this article is to examine, in the context of Tunisia's democratic transition, the link between organizational resilience and SHRM practises (strategic human resource management)
15	de Lucas Ancillo <i>et al.</i> , (39)	4.340	Q2	Our comprehension of resilience's function in the link between stress and burnout connected to COVID-19 is furthered by the results obtained.
16	Wei <i>et al.</i> , (40)	9.720	Q1	This study emphasises HR's crucial contribution to operational and strategic success throughout the COVID-19 pandemic.
17	Williams <i>et al.</i> , (41)	5.589	Q1	This study analyses how health organizations were able to deal with adversity throughout the crisis by integrating crisis management and resilience literature.
18	Barasa <i>et al.</i> , (42)	3.396	Q1	The subject matter addressed in this study is how to keep healthcare personnel' morale up so they can engage in the COVID-19 pandemic response despite their anxiety and overwork.

Bibliometric Analysis

We used VOS Viewer to analyse the network relationship between several units of analysis and visually represent the bibliographic data. Co-authorship, keywords analyses and network of countries were carried out in the current study. In order to generate a map using network data, bibliographic data, and text data, as well as its versatility to support various file kinds, VOS Viewer was chosen for this study. The file utilised by VOS Viewer for visualisation purposes is in.CSV format and comprises the article's bibliographic data.

Co-Authorship Analysis of Authors and Countries

The co-authorship network reflects the extent to which authors, organizations, and countries collaborate. In general, researchers collaborate and contribute to the development of scientific articles, which results in a better number and quality of scientific output due to the individual's input. The analysis was carried out with the help of VOSviewer. Figure 2 depicts the author co-authorship network, with clusters coloured differently. The network in the image represents researchers who have worked collaboratively on a

minimum of one research publication. To reach the threshold, researchers must have co-authored at least a single article and been cited at least twenty times. In addition, the Figure 3 shows a network visualisation of the retrieved articles' distribution by country. A country with a minimum of 10 citations was subject to the threshold prerequisites. The USA was found to possess the strongest overall relationship amongst all the countries. Conversely, countries such as the UK, Australia, China, India, Spain, and Italy are a part of an extensive framework of collaboration.

Keyword Co-Occurrence Network

Author keyword analysis was done in order to capture the present-day flow of information that prevails among researchers. As a result, we've conducted author keyword analysis to learn more about the research trends in the healthcare industry. To create a keyword co-occurrence network, we used VOSviewer Version 1.6.18. The author's keyword co-occurrence network is shown in Figure 3. To construct the co-occurring network of the most frequently used author keywords, search terms were confined to two occurrences or above. Analysing an author's keywords might be insightful for both present and future research.

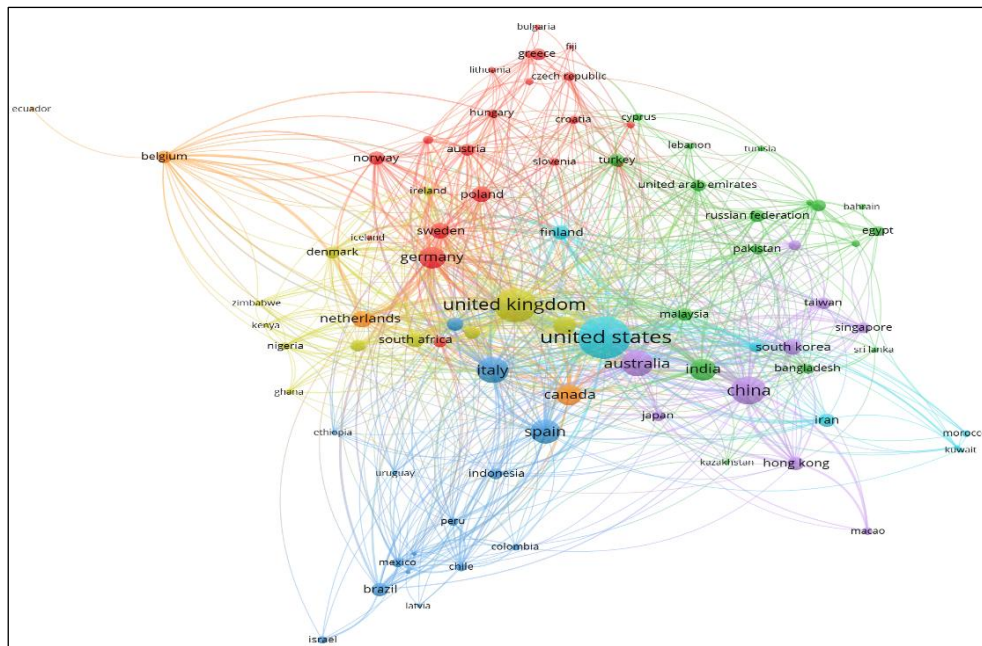


Figure 4: Visualisation of the Network of Country Wise Distribution

**Co-Authorship Network Information:
Country Wise Analysis**

Figure 4 shows the co-authorship arrangement among countries with a minimum of a single article and contributor affiliation. In total, fifty-seven countries were picked based on their minimal 10 citation. The United States possessed the most formidable links. However, the UK, Australia, China, India, Italy, Canada, Spain, and Germany

collaborate effectively. Table 2 depicts how innovative HRM strategies promote flexibility, engagement, and efficiency. Offering work-from-home options, remote work tools, and virtual training to increase skills and communication are key strategies. By acquiring and retaining exceptional, providing safe working conditions, and facilitating workers to participate in decision-making, particularly amid pandemics, organisations strengthen internal effectiveness.

Table 2: Description of Innovative Human Resource Management Strategies

Strategy	Illustration of the Strategy
Employee virtual lifecycle and flexibility	Flexibility in working from home. Access to floating hours of work. Encourage employees to work from home to protect them from viral exposure. Provide necessary skills through training on how to handle crisis situations. Develop a routine and lay down a line distinguishing the workplace from the home. Cultivate a healthy work-life balance so that businesses may be more productive as well as retain top talent for longer periods of time (43).
Availability of adequate resources	Providing employees with necessary resources to meet their technical needs enabling them to work efficiently. To facilitate communication, develop a virtual processing programme. Connect the customer network and organizational network in workers' homes to sustain business operations (44).

Providing training to gain new skills	<p>Plan periodic virtual meetings to increase understanding of distant employment.</p> <p>Both employees and managers are encouraged to participate in meetings by using a user-friendly virtual platform, based on which tasks are assigned to them. Successful virtual teams are effective at preserving interpersonal relationships while accomplishing tasks. Virtual education on health and hygienic practices during Covid 19 (45).</p>
Employee motivation by using innovative techniques	<p>Use of creative employee engagement strategies such as interactive virtual team meetings to build relationship with the employees.</p> <p>Self-managed teamwork enhances productivity while lowering absenteeism and staff turnover.</p> <p>An organization is more successful and lucrative when its people are motivated.</p> <p>Rewarding and recognizing active employees.</p> <p>Offer additional benefits to compensate employees instead of reducing employee payments, and try to give more benefits to employees (46).</p>
Organizing recreational activities for the staffs and enhancing internal efficiency by hiring new employees	<p>Designing innovative employee engagement strategies that help people manage their personal and professional lives efficiently.</p> <p>Strengthening the internal team to attract and hire talents and figure out best methods to retain them for long (47).</p>
Providing safe and healthy working conditions for employees	<p>Providing all the necessary safety materials to the employees when they work at office.</p> <p>Putting in place and putting into practise new and supporting policies with infection control procedures for the staff.</p> <p>Managers recognising the increased demands and learning about the domestic and global pandemic prevention strategies (48).</p>
Employee participation in decision making	<p>Employees are stressed out by uncertain events like the epidemic, despite their best efforts to stay optimistic.</p> <p>The company must foster a close relationship with its staff so that they feel safe enough to contribute and grow with the organization even in the most trying circumstances (49).</p>

The Healthcare Industry's Resilience

HRM in the healthcare industry is confronted with a number of significant issues in times of uncertainty, such as the COVID-19 pandemic. Shortages of healthcare personnel are a major concern since long hours and large patient loads increase the risk of disease, exhaustion, and stress. The HR department must prioritise employee well-being, mental health, and flexible work options. To address quarantine or illness-related workforce gaps, HR departments must quickly acquire, on

board, and educate new hires, sometimes in unpredictable environments. With rising stress, keeping staff engaged and committed while guaranteeing their safety through PPE and standards is another major challenge. In order to ensure that employees are informed about the changing guidelines and protocols, it is imperative to effectively communicate. In general, HRM in the healthcare industry during pandemics such as COVID-19 entails striking a balance between the

needs of the staff and operational responsibilities (50).

A large influx of patients and concern about illness transmission are claimed to make healthcare organizations more susceptible to outside pressure when disasters strike. The healthcare sector must successfully respond to a pandemic, recover from internal and external sets of unusual circumstances, and simultaneously preserve balance in continuous everyday operations, and also quickly adjust to changing demands. The pandemic has compelled healthcare organizations to adopt a resilient mind-set in order to endure the disaster. Hospital operations during the crisis were restructured to protect worker safety through a variety of therapeutic paths while also ensuring

the continuation of vital medical services. The organization's management practises have to be revised in light of the severe and uncontrollable COVID-19 environmental phenomena. Despite the fact that there are many research studies on crisis management and resilience, the organizational practises now used are still largely unmapped and are mostly discussed on the basis of opinions or general considerations rather than empirical studies or real instances. Our attention is drawn to the crucial "coping phase," which comes after "anticipation" and before "adaptation" in the development of resilience. Table 3 summarizes how different crises affect the healthcare sector and how HRM practices adapt to mitigate the challenges, with references to relevant research.

Table 3: Crisis Types and their Influence on HRM Practices in Healthcare

Crisis Type	Impact on Healthcare Sector	HRM Practice Response
Pandemic (e.g., COVID-19)	Overwhelmed healthcare systems, increased patient loads, and staff shortages.	Flexible workforce management, remote work, cross-training, and resilience training (51).
Economic Recession	Reduced budgets and cost-cutting measures impacting staffing levels and resource allocation.	Downsizing, compensation restructuring, workforce planning, retention strategies (52).
Natural Disasters	Infrastructure damage, disrupted healthcare services, and displaced workforce.	Emergency staffing protocols, crisis management training, and rapid recruitment processes (53).
Cybersecurity Breaches	Compromised patient data and disruption of digital healthcare services.	Cybersecurity training, digital HR platforms for communication, and workforce education on data protection (54).
Healthcare Worker Burnout	Declining employee well-being, high absenteeism, and reduced quality of care.	Mental health support programs, workload management, flexible scheduling, and burnout prevention initiatives (55).
Technological Disruption	Rapid technological advancements causing skill gaps and resistance to change in the workforce.	HR analytics for workforce planning, continuous training in new technologies, and digital communication platforms (56).
Public Health Emergencies	Unpredictable surges in patient demand and safety risks for healthcare workers.	Crisis preparedness, cross-training, hazard pay, and enhanced safety measures (57).

The goal of the study is to pinpoint the circumstances under which a complicated organization, like a healthcare system, may quickly come up with practical answers to novel problems. The single healthcare organization, possibly exposed to dangers that cannot always be anticipated and to unforeseen forms of crises, should identify the prerequisites for creating an effective response during that time. In addition to efficiently handling the issue, healthcare

organizations had to carry on with their regular operations for patients who did not have COVID-19. It was crucial for the organization to "bounce back" with quick responses and creative solutions in order to both protect society as a whole from the threat of subsequent breakouts as well as to ensure its own existence. Thus, we aim to respond to the following query: How did healthcare organizations respond to the COVID-19 situation with an effective strategy?

Results and Discussion

Understanding the bibliographic review of the papers that were extracted for the study was the primary objective of this research. This information made it possible to track down articles that provide a thorough summary of research on the management of human resources during the Covid 19 epidemic and their active involvement in the virus's prevention. The organization's performance was primarily evaluated based on how well it took care of the health and safety of its employees (58). The issues and crisis management techniques presented in this study will pave the way as a useful guide for organizations dealing with challenges posed by pandemics as we do not know when this pandemic will cease to exist. Flexibility in the workplace, staff safety, a focus on working conditions, employee participation, development, and motivation through continuous interaction and the use of creative methods, the provision of training sessions for employees, the use of creative means to support employees and ensure their health and well-being, and the use of creative fun activities are some of the human resource strategies discussed in this study that were used to respond to situations similar to those resulting from the Covid 19 pandemic. Because of the numerous difficulties the healthcare sector faced as a result of the pandemic, it is essential that the organization have a functioning crisis response plan to address the situation. For the continuity and survival of the organization, solutions to global crises like the pandemic are required at all levels of the organization. Any organization's primary objective in the current environment is to sustain its survival, welfare, and effective management of its human resources to maintain an equilibrium in its existence. They must thus have a strong crisis management strategy in place if they want to quickly implement appropriate responses during the crisis.

To effectively manage any crisis, it becomes crucial to understand its impact on the organization. Crisis may be defined as a low probability, high impact occurrence that poses a threat to the organization's survival and is characterised by uncertainty regarding its source, effect, and course of action as well as a sense that choices need to be taken swiftly. In this article, the steps of the crisis management preparedness plan are briefly

described, paving the way for organizations to manage the situation appropriately (59).

'Pre event of preparedness for the crisis,' is a stage where Organizations must prepare for a crisis in advance to ensure that it does not interfere with their ability to conduct business. Crisis management and planning are essential in this stage to mitigate the impact of the crisis on the business. To safeguard the survival of the organization during this time, it is crucial to form a disaster management team and set up specific procedures and regulations.

'Upon emergence of the crisis,' the impending crisis sends out several conflicting warning signs, which are undoubtedly detrimental for an organization's daily operations. At this juncture, prevention is no longer an option; instead, a contingency plan is required to deal with the circumstance. Also, in these early stages of the crisis, in this case Covid 19, immediate priorities were determined, such as social isolation, early testing and identification upon the onset of symptoms, and training staff on safety procedures. To achieve the objective—that is, to fight the pandemic—solidarity in all facets of healthcare should be the guiding concept.

'Stages of emergency,' at this point in the crisis, there are a number of serious and adverse consequences are witnessed that must be addressed promptly in order to protect people, businesses, and the environment.

'Phases of recovery (Short term),' is a stage where priority must be given to meeting the urgent needs of the organizations, employees, and patients in order to recover from the crisis' effects and resume normal operations.

'Long-term (recovery),' is the continuation of the preceding phase, where the developed plans and strategies are put into action. Re-evaluating and rebuilding the company, as well as reinvestigating or amending any strategies that call for it, are the main areas of focus here.

Resolution phase,' the objective at this juncture is to get the firm back to its regular course of operations. Here, the team reviews the choices they have made so far and, if necessary, encourages revisions.

Following are some of the benefits of having a contingency plan from the viewpoint of employees

- Reduction of stress
- Efficient management of the crisis
- Lesser turnover rates

- Increasing flexibility in work
- Employee satisfaction and motivation
- Building of a feeling of solidarity (60).

Further research in this field is necessary due to the fact that different sections of society experience distinct issues during the crisis, necessitating a careful and extensive investigation. We also discovered that several nations retain specialised pandemic treatment departments in hospitals to concentrate on efficient monitoring of patients who may need critical care. The retention of a known, trained medical personnel in the hospital network was acknowledged as a benefit. Finally, based on the outcomes of this study, a conceptual model of a sustainable organization for managing human resources under COVID-19-like situations of uncertainty was presented which demonstrated the degree to which the pandemic has forced healthcare organizations to deal with fluctuation, uncertainty, complexity, and ambiguity in the economic, social, and organizational settings.

Limitations

Despite the fact that there are several research on Covid 19 crisis management in various sectors since the disease's breakout, there have only been a limited number of studies in the healthcare sector. Additionally, only English-language publications published in internationally recognised databases were examined for this study, and other information sources—including websites—were not taken into consideration. The following topics are proposed for more research: empirical research to learn more about the COVID-19's challenges for managing human resources, creative management techniques during the COVID-19, the experience and lessons learned by the clinical organization, qualitative research of health professionals for managing human resources during this crisis.

Conclusion

This research, which described the actual crisis management strategies used by the managers participating in COVID-19, demonstrated how managers use a variety of different solutions when faced with a crisis. Although crises are always possible, it is crucial to draw lessons from them that will help you better handle future problems. While expressing the difficulties of the COVID-19 crisis, this study also outlines the human resource

management strategies that organization managers should employ to raise employee welfare, health, and productivity at work by improving working conditions, talent management, and flexibility. Regardless of the patient density, agility variables that are managed to aid Covid care operations in hospitals should also be considered to successfully restrict the spread of Covid 19 worldwide. In addition, organizations may take initiatives to refrain from stigmatising the virus' transmission, which may lower resilience and heighten perceptions of stress. We concentrated on the thorough analysis of all relevant documents found in the three major databases.

Health care outcomes like staff retention, patient care, and organisational resilience are greatly affected by HRM advancements. Organisations can minimise attrition and improve employee satisfaction by using data-driven approaches to hiring and improving employee engagement programs like feedback and career advancement. Training and development programs in clinical skills and patient communication promote staff proficiency, improving patient care and satisfaction. Stress management workshops and wellness programs minimise burnout and improve patient empathy, improving the satisfaction of patients. Agile workforce planning and crisis management training help healthcare organisations adapt to demand changes during public health emergencies, ensuring operational efficiency. Encouraging employee empowerment boosts resilience by encouraging creativity and flexibility. These advancements reduce turnover, improve patient satisfaction, reduce medication errors, and increase operational responsiveness, establishing that effective HRM practices optimise healthcare outcomes.

Due to inflexibility in organizational procedures and difficulty understanding the impact of the crisis, an organization's long-term existence may be affected. The management capacity of the healthcare organization will determine how resiliently it responds to the crisis. In particular, managers must

- Centralize the Decision-making process to avoid the freeze of the organization at the event of the crisis
- To allow for some degree of adaptation and flexibility, as well as creative solutions,

establish teams with multiple disciplines and task groups.

- To achieve short-term objectives, devise protocols to address ad hoc tasks and temporary routines.
- As an organization cannot handle a complex crisis alone, networks and linkages should be established outside the business as well.

A serious occurrence, like a pandemic, necessitates a re-evaluation of the standard procedures and well-prepared leadership. Therefore, major events will have an effect on the entire organizational structure, which may lead to a more resilient, adaptable, and creative business in the future.

Abbreviations

VOS: Visualization of Similarities, SLR: Systematic Literature Review, PRISMA: Preferred Reporting Items for Systematic Review and Meta-Analysis, PPE: Personal Protective Equipment, HR: Human Resource, HRM: Human Resource Management, Q: Quartile, CSV: comma-separated values, USA: United States of America, UK: United Kingdom.

Acknowledgement

I express our gratitude and appreciation to my institution with whose support and guidance contributed significantly to this research. A Special thanks to my beloved supervisor for her invaluable assistance.

Author Contributions

S K Sindu Bharathi: Conducted the research and analysis for the study, S Sujatha: Supervised the project and provided critical revisions to the manuscript. Both authors contributed to the writing and approval of the final manuscript.

Conflict of Interest

The authors declare no conflicts of interest.

Ethics Approval

Not applicable.

Funding

None.

References

1. Hosseinzadeh S, Ketabi S, Atighehchian A, Nazari R. Hospital bed capacity management during the COVID-19 outbreak using system dynamics: A case study in Amol public hospitals, Iran. *International Journal of Healthcare Management*. 2024 Jan 2;17(1):63-75.
2. Bieńkowska A, Koszela A, Sałamacha A, Tworek K. COVID-19 oriented HRM strategies influence on job and organizational performance through job-related attitudes. *Plos one*. 2022 Apr 13;17(4):e0266364.
3. Risley C. Maintaining performance and employee engagement during the COVID-19 pandemic. *Journal of Library Administration*. 2020 Aug 17;60(6):653-9.
4. Roggeveen SA, Chen SW, Harmony CR, Ma ZI, Qiao P. The adaption of post COVID-19 in IHRM to mitigate changes in employee welfare affecting cross-cultural employment. *IETI Trans Econ Manag*. 2020;1:1-8.
5. Abbasi P, Ziapour A, Kianipour N. Correlation of the Components of Student's Lifestyles and their Health Promotion. *Journal of Clinical & Diagnostic Research*. 2018 Jun 1;12(6):LC01-LC04.
6. Chemali S, Mari-Sáez A, El Bcheraoui C, Weishaar H. Health care workers' experiences during the COVID-19 pandemic: a scoping review. *Human resources for health*. 2022 Mar 24;20(1):27.
7. Singh R, Avikal S. COVID-19: A decision-making approach for prioritization of preventive activities. *International Journal of Healthcare Management*. 2020 Jul 2;13(3):257-62.
8. Klein MG, Cheng CJ, Lii E, Mao K, Mesbahi H, Zhu T, Muckstadt JA, Hupert N. COVID-19 models for hospital surge capacity planning: a systematic review. *Disaster medicine and public health preparedness*. 2022 Feb;16(1):390-7.
9. Zaghini F, Fiorini J, Livigni L, Carrabs G, Sili A. A mixed methods study of an organization's approach to the COVID-19 health care crisis. *Nursing outlook*. 2021 Sep 1;69(5):793-804.
10. Kaushik AK and Rahman Z. Perspectives and dimensions of consumer innovativeness: A literature review and future agenda. *Journal of International Consumer Marketing*. 2014 May 27;26(3):239-63.
11. Raso R, Fitzpatrick JJ, Masick K, Giordano-Mulligan M, Sweeney CD. Perceptions of authentic nurse leadership and work environment and the pandemic impact for nurse leaders and clinical nurses. *JONA: The Journal of Nursing Administration*. 2021 May 1;51(5):257-63.
12. Heshmati A, Tsionas M, Rashidghalam M. An assessment of the Swedish health system's efficiency during the Covid-19 pandemic. *International journal of healthcare management*. 2023 Jul 3;16(3):336-52.
13. Mahdavi A, Atlasi R, Ebrahimi M, Azimian E, Naemi R. Human resource management (HRM) strategies of medical staff during the COVID-19 pandemic. *Heliyon*. 2023 Oct 1;9(10):e20355.
14. Kartal N, Arıkan G, Seyhan F, Aydan S. Mediator roles of resilience and intolerance of uncertainty in the effect of healthcare professionals' coronavirus stigma on stress. *International Journal of Healthcare Management*. 2023 Jan 2;16(1):120-7.
15. Rathnayake D, Clarke M, Jayasinghe VI. Health system performance and health system preparedness for the post-pandemic impact of COVID-19: A review. *International Journal of Healthcare Management*. 2021 Jan 2;14(1):250-4.
16. Chaudhary M, Sodani PR, Das S. Effect of COVID-19 on economy in India: Some reflections for policy and programme. *Journal of Health Management*. 2020 Jun;22(2):169-80.
17. Stirpe L, Profili S, Sammarra A. Satisfaction with HR practices and employee performance: A moderated mediation model of engagement and health.

- European Management Journal. 2022 Apr 1;40(2):295-305.
18. Cai Y, Rowley C, Xu M. Workplaces during the COVID-19 pandemic and beyond: insights from strategic human resource management in Mainland China. *Asia Pacific Business Review*. 2023 Aug 8;29(4):1170-91.
 19. Adla L, Gallego-Roquelaure V, Calamel L. Human resource management and innovation in SMEs. *Personnel Review*. 2020 Oct 10;49(8):1519-35.
 20. Annarelli A and Nonino F. Strategic and operational management of organizational resilience: Current state of research and future directions. *Omega*. 2016 Jul 1;62:1-8.
 21. Yildirim M, Solmaz F. COVID-19 burnout, COVID-19 stress and resilience: Initial psychometric properties of COVID-19 Burnout Scale. *Death Studies*. 2022 Mar 16;46(3):524-32.
 22. Collings DG, McMackin J, Nyberg AJ, Wright PM. Strategic human resource management and COVID-19: Emerging challenges and research opportunities. *Journal of Management Studies*. 2021 Jul;58(5):1378.
 23. Donelli CC, Fanelli S, Zangrandi A, Elefanti M. Disruptive crisis management: lessons from managing a hospital during the COVID-19 pandemic. *Management Decision*. 2022 Apr 11;60(13):66-91.
 24. Wu LK, Su WH, Hsiao SH, Hou MF. Preparedness for the next emerging infectious disease outbreak by implementing strategic human resource management. *Journal of the Chinese Medical Association*. 2020 Oct 1;83(10):973-4.
 25. Paquay M, Diep AN, Kabanda Z, Ancion A, Piazza J, Ghuysen A. Impact of the Covid-19 crisis on the hospital work environment and organization: a mixed-methods study. *International Journal of Healthcare Management*. 2024 Apr 2;17(2):398-408.
 26. Vindrola-Padros C, Andrews L, Dowrick A, Djellouli N, Fillmore H, Gonzalez EB, Javadi D, Lewis-Jackson S, Manby L, Mitchinson L, Symmons SM. Perceptions and experiences of healthcare workers during the COVID-19 pandemic in the UK. *BMJ open*. 2020 Nov 1;10(11):e040503.
 27. Moynihan R, Sanders S, Michaleff ZA, Scott AM, Clark J, To EJ, Jones M, Kitchener E, Fox M, Johansson M, Lang E. Impact of COVID-19 pandemic on utilisation of healthcare services: a systematic review. *BMJ open*. 2021 Mar 1;11(3):e045343.
 28. Xu X, Luo L, Zhong X. Forecast-based newsvendor models for hospital bed capacity management. *IEEE Robotics and Automation Letters*. 2021 Jun 30;6(4):6513-20.
 29. Azizi MR, Atlasi R, Ziapour A, Abbas J, Naemi R. Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach. *Heliyon*. 2021 Jun 1;7(6):e07233.
 30. Brun C, Zerhouni O, Akinyemi A, Houtin L, Monvoisin R, Pinsault N. Impact of uncertainty intolerance on clinical reasoning: A scoping review of the 21st-century literature. *Journal of Evaluation in Clinical Practice*. 2023 Apr;29(3):539-53.
 31. Klein MG, Cheng CJ, Lii E, Mao K, Mesbahi H, Zhu T, Muckstadt JA, Hupert N. COVID-19 models for hospital surge capacity planning: a systematic review. *Disaster medicine and public health preparedness*. 2022 Feb;16(1):390-7.
 32. Tzeng CW, Cao HS, Roland CL, Teshome M, Bednarski BK, Ikoma N, Graham PH, Keung EZ, Scally CP, Katz MH, Gershenwald JE. Surgical decision-making and prioritization for cancer patients at the onset of the COVID-19 pandemic: a multidisciplinary approach. *Surgical oncology*. 2020 Sep 1;34:182-5.
 33. Bagchi B, Chatterjee S, Ghosh R, Dandapat D. Impact of COVID-19 on global economy. In: *Coronavirus Outbreak and the Great Lockdown*. SpringerBriefs in Economics. Springer, Singapore. https://doi.org/10.1007/978-981-15-7782-6_3
 34. Manuti A, Giancaspro ML, Molino M, Ingusci E, Russo V, Signore F, Zito M, Cortese CG. "Everything will be fine": a study on the relationship between employees' perception of sustainable HRM practices and positive organizational behavior during COVID19. *Sustainability*. 2020 Dec 7;12(23):10216.
 35. Butterick M, Charlwood A. HRM and the COVID-19 pandemic: How can we stop making a bad situation worse? *Human Resource Management Journal*. 2021 Nov;31(4):847-56.
 36. Adam NA and Alarifi G. Innovation practices for survival of small and medium enterprises (SMEs) in the COVID-19 times: the role of external support. *Journal of innovation and entrepreneurship*. 2021 May 27;10(1):15.
 37. Bouaziz F and Smaoui Hachicha Z. Strategic human resource management practices and organizational resilience. *Journal of Management Development*. 2018 Sep 18;37(7):537-51.
 38. Di Giuseppe M, Nepa G, Prout TA, Albertini F, Marcelli S, Orrù G, Conversano C. Stress, burnout, and resilience among healthcare workers during the COVID-19 emergency: the role of defense mechanisms. *International journal of environmental research and public health*. 2021 May 14;18(10):5258.
 39. de Lucas Ancillo A, Gavrilu SG, del Val Núñez MT. Workplace change within the COVID-19 context: The new (next) normal. *Technological Forecasting and Social Change*. 2023 Sep 1;194:122673.
 40. Wei EK, Long T, Katz MH. Nine lessons learned from the COVID-19 pandemic for improving hospital care and health care delivery. *JAMA internal medicine*. 2021 Sep 1;181(9):1161-3.
 41. Williams BA, Jones CH, Welch V, True JM. Outlook of pandemic preparedness in a post-COVID-19 world. *npj Vaccines*. 2023 Nov 20;8(1):178.
 42. Barasa EW, Manyara AM, Molyneux S, Tsofa B. Recentralization within decentralization: County hospital autonomy under devolution in Kenya. *PLoS ONE*. 2017;12(8):e0182440. <https://doi.org/10.1371/journal.pone.0182440>.
 43. van Heel L, Pretelt M, Herweijer M, van Oel C. Perspectives on assessing the flexibility of hospitals for crisis mode operations: Lessons from the COVID-19 pandemic in the Netherlands. *HERD: Health Environments Research & Design Journal*. 2024 Jan;17(1):34-48.
 44. Pinzaru F, Zbucnea A, Anghel L. The Impact of the COVID-19 Pandemic on Business. A preliminary overview. *Strategica. Preparing for Tomorrow, Today*. 2020 Oct 15;8:721-30.

45. Abdou SH. The Impact of HRM Practices on Employee Creativity Through the Mediating Role of Employee Engagement in the Egyptian Hotels Context. *Pharos International Journal of Tourism and Hospitality*. 2024 Feb 15;3(1):17-35.
46. Moher D, Liberati A, Tetzlaff J, Altman DG, Altman D, Antes G, Atkins D, Barbour V, Barrowman N, Berlin JA, Clark J. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement (Chinese edition). *Journal of integrative medicine*. 2009 Sep;7(9):889-96.
47. Mihalache M and Mihalache OR. A decisional framework of offshoring: Integrating insights from 25 years of research to provide direction for future. *Decision Sciences*. 2016 Dec;47(6):1103-49.
48. Bharathi SS and Sujatha S. Healthcare Employee Well-Being and Work-Related Stress Factors: Evaluating the Mediating Influence of Perceived Organisational Support. *Qubahan Academic Journal*. 2024 Aug 30;4(3):209-25.
49. Sasikumar GM and Sujatha S. Perceptions of Women Employees on the Quality of Work Life Practices in the Electronics Manufacturing Industry-an Analysis. *Qubahan Academic Journal*. 2024 Jun 5;4(2):129-52.
50. Sasikumar GM and Sujatha S. Work-life enrichment among college educators. *Salud, Ciencia y Tecnología - Serie de Conferencias*. 2024 Jul; 3:1127.
51. Chirico F, Nucera G, Magnavita N. Protecting the mental health of healthcare workers during the COVID-19 emergency. *BJPsych International*. 2021 Feb;18(1):E1.
52. Han PK, Klein WM, Arora NK. Varieties of uncertainty in health care: a conceptual taxonomy. *Medical Decision Making*. 2011 Nov;31(6):828-38.
53. Ferry AB, Sidin I, Wahyu A. An analysis of the effects of human resources management on healthcare innovation in hospital: A scoping review. *Journal of Asian Multicultural Research for Medical and Health Science Study*. 2021 Jun 4;2(2):70-83.
54. Edvardsson IR and Durst S. Human resource management in crisis situations: a systematic literature review. *Sustainability*. 2021 Nov 10;13(22):12406.
55. Talaee N, Varahram M, Jamaati H, Salimi A, Attarchi M, Kazempour Dizaji M, Sadr M, Hassani S, Farzanegan B, Monjazebi F, Seyedmehdi SM. Stress and burnout in health care workers during COVID-19 pandemic: validation of a questionnaire. *Journal of Public Health*. 2022;30(3):531-536.
56. Shah S, Diwan S, Kohan L, Rosenblum D, Gharibo C, Soin A, Sulindro A, Quinn N, Provenzano DA. The technological impact of COVID-19 on the future of education and health care delivery. *Pain physician*. 2020;23(4S):S367.
57. Vagni M, Maiorano T, Giostra V, Pajardi D, Bartone P. Emergency stress, hardiness, coping strategies and burnout in health care and emergency response workers during the COVID-19 pandemic. *Frontiers in Psychology*. 2022 Jun 21;13:918788.
58. Al-Khrabsheh AA, Al-Bazaiyah SA, Al-Khrabsheh AA, Alheet AF. The strategic role of human resources management in performing crisis management: The mediating role of organizational culture and human capital during Covid-19 (An Applied Study on the Jordanian Ministry of Health). *Journal of Management Information and Decision Sciences*. 2022;25:1-8.
59. Cao Y, Li Q, Chen J, Guo X, Miao C, Yang H, Chen Z, Li C, Li L. Hospital emergency management plan during the COVID-19 epidemic. *Academic Emergency Medicine*. 2020 Apr;27(4):309-11.
60. Sedes PR, Sanz MB, Saera MB, Rodríguez-Rey LC, Ortega AC, González MC, de Haro López C, Santos ED, Barcena AE, Mera MF, Cano JI. Contingency plan for the intensive care services for the COVID-19 pandemic. *Medicina Intensiva (English Edition)*. 2020 Aug 1;44(6):363-70.