

Disaster Collaborative Exercises for Healthcare Teamwork in a Saudi Context

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Introduction: Saudi Arabia has experienced special challenges calling for effective teamwork in the management of disasters and emergencies, such as wars, earthquakes, and major accidents linked to the Hajj pilgrimage over the years. In 2015, 769 pilgrims died in a crowd stampede during Hajj. The outcome of the incident could have been different if the rescuers had the necessary multiagency and collaborative disaster education. This study aims to determine the development of Saudi HCWs' teamwork during collaboration exercises.

Method: This study employed two methods to gather data: (observational) during three-level-collaboration (3LC) tabletop-exercises and semi-structured interviews, by employing two theoretical models (team development models). The number of participants was (100) HCWs.

Results: The results of these exercises had a positive impact on the functionality of HCWs and helped them prepare for disaster management and mitigation inside and outside of a medical facility. Based on the theoretical framework of the integration of team members, the participants reported that the trans-professional team developed because they understood the scenarios. In addition, the participants underscored they developed their skills and knowledge of disaster management because of the attempts made in scenario one. Furthermore, on the theoretical framework of team maturity, several participants indicated that immaturity in scenario one is because of the team members not having the same knowledge and skills. While in scenario two, they are mature because of training and challenges resulting in individual development.

Conclusion: This study focused on determining the development of healthcare teamwork during collaborative exercises. HCWs were exposed to two scenarios. The tabletop training enabled HCWs to gain the maturity in team building and disaster management. Immature and overripe HCWs cannot easily embrace teamwork. In addition, the public should be made aware of disasters that may come their way. Continuous training of HCWs and creating public awareness are essential parts of disaster management.

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A Crisis is an Opportunity for Human Resource Development

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Introduction: The COVID-19 pandemic also raged in Fukushima Prefecture, Japan. Moreover, it forced a response to the medical crisis just as much as the disaster. After the Great East Japan Earthquake, disaster response system development progressed in Fukushima Prefecture. The relationship between the DMAT and the Prefectural Medical Health and Welfare Department was becoming more assertive.

Method: However, as the disaster response members became fixed, there was an urgent need to develop new young human resources.

Results: Meanwhile, flood damage caused by Typhoon No. 24 occurred in September 2018. It was the first time since the Great East Japan Earthquake that a disaster countermeasures headquarters was set up within the prefectural office. In that response, we discovered young talents. Furthermore, they nurtured in response to the medical crisis caused by the COVID-19 pandemic.

Conclusion: In recent years, the main elements of disaster response required support for continuing medical care and securing public health. Unfortunately, however, these things are insufficient both as medical education and as postgraduate education. Therefore, few human resources are interested in disaster medicine and taking action. In addition, it is also a fact that, like surgical operations, if disasters are not responded to, they will not come to fruition. The response to this pandemic is genuinely an opportunity for human resource development. Taking advantage of this crisis to develop new human resources can be a blessing.

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Climate Change Impact on Floods and Water Borne Disease in Nepal

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Introduction: Nepal's reported risk to Climate Change adaptation reported by Notre Dame Global Adaptation Initiative Index (ND-GAIN Index) 2020 is 5.2 and ranked 71% high

in country vulnerability, 126th of the total 180 countries. According to the report of the Ministry of Forest and Environment in 2018, flood is one of the principal climatic hazards in Nepal. According to the Department of Health Services Nepal, 3,500 children die each year due to water-borne diseases (WBD). The objective of this study is to analyze the climate change impact focusing on floods and WBD for the past two decades.

Method: A secondary data analysis method was used to analyze the impact of floods and WBD attributed to climate change. Data was obtained from Nepal Risk Reduction Portal (<http://drrportal.gov.np>), Nepal Annual Health Reports (2000–2021), Nepal Government Vulnerability and Risk Assessment reports, and reputable journals.

Results: Climate-related disasters have increased by six-fold in 2021, as compared to 2000 in Nepal. Among the people affected by disasters 71% of them are due to floods. Flood events during the last 21 years have a fluctuating trend with highest and lowest events observed in 2017(388) and 2015(15) respectively. Heavy and unusual rainfall patterns as a major indicator of climate change is likely to cause riverine floods and flash flooding by melting the glaciers. The incidence of diarrhea disease rose by 4.39% for 1°C increase in ambient temperature in data analysis collected on temperature and diarrhea from July 2002–June 2014.

Conclusion: The findings suggested that increased temperatures in Nepal might have induced a change in flood events and the incidence of WBD (such as diarrhea), thus emphasizing the importance of climate change adaptation plans, flood risk management, and WBD surveillance to be prioritized and put in place to mitigate the effects of climate change.

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Psychological Emergency Cell and Prehospital Emergency Medical Service Integration into the Care Pathway for Victims

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Introduction: The Medical-Psychological Emergency Cells (CUMP) are integrated in France into the pre-hospital Medical Emergency Services (SAMU). The objective of this study aims to show an integrated course of care and the major interest of the inclusion of the Psychological Cells in the structures of the SAMU.

Method: The CUMP of the Toulouse Area is made up of Psychologists, Nurses, Psychiatrists, professionals or volunteers sent or put on alert. Interventions take place immediately under the aegis of the prehospital medical care department or in a deferred manner within the first 48 hours. All subjects having at the time signs of acute stress, peritraumatic dissociation, behavioral disorders, are invited to follow-up consultations within 48 to 72 hours. The objective of this work is to show the continuity of care and the pathway of patients coordinated from an emergency call to several months beyond.

Results: During 2021, 222 situations were handled, either individually or collectively. 94 were assaults (physical, psychological, or sexual), 55 were accidents (traffic accident, fire, explosion, etc.), 50 were confrontations with death (attending a suicide, death, etc.), 13 were traumatic bereavements, and 10 a context of a health disaster. Overall, 1,109 patients were seen immediately on site, 192 post-immediate in less than 48 hours and 197 had repeated individual consultations.

Conclusion: 1) The participation of the same professionals in immediate and post-immediate care makes the prevention of chronic post-traumatic stress more effective.

2) The articulation with the care structures for lasting psycho-trauma establishes consistency in the course of care: sensitivity to signs of distress, dissociation or stupefaction.

3) The links with the pre-hospital emergency medical aid service make emergency specialists aware of the psychological component of traumatic events.

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Development and Validation of a Repeatable Exsanguination Simulator Using Live Tissue (RESULT)

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Introduction: Proper packing technique is crucial to minimize blood loss and successfully stop fatal junctional (axilla, groin, and neck) bleedings. Several medical simulators and mannequins are used to teach techniques for manual pressure and wound packing. Live tissue training (LTT) using animal models represents a high-fidelity simulator, but the number of times massive hemorrhage can be practiced is limited due to cumulative blood loss of the animal. Moreover, the animal's potent coagulation limits the reuse of injuries. The study aimed at creating and validating a reproducible and repeatable exsanguination simulator to be used for high-volume training.

Method: This study was approved by the regional animal ethics committee (Dnr 17953-2020). All animals were fully anesthetized throughout the duration of experiments. A repeatable exsanguination simulator using live tissue (RESULT) was created using commonly available materials to add reproducible junctional bleedings in an LTT context. A canister of porcine or bovine blood is connected to a standard gravity infusion set with roll clamp and pump chamber removed and added to a 100 cm 3-way stopcock connected to a 60 ml syringe. The free end of tubing is surgically inserted into the hind leg of a pig and placed inside a 5 cm long and 5 cm deep wound cavity. The simulator was evaluated with instructors controlling the rate of bleeding using the syringe while training participants packed the wound.