**Table 3**. The results of thematic analysis of the extracted data of the reviewed studies related to each earthquake are illustrated in the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Albania  (Banushi) | Economic decline in post-earthquake period due to COVID-19 |  |  | 1) Ongoing reforms to the system of economic governance  2) Economic development for loss compensation  3) Social productivity |
| Čivljak, Croatia | Evacuation of the hospitals due to extensive property damage  The earthquake causing acceleration in the spread of COVID-19 due to migration  The earthquake causing infection increase and outbreak of other infectious diseases | No increase in COVID-19 incidence due to well-organized public health system  No increase in COVID-19 incidence due to coordinated outbreak response | Conscientious public compliance with social distancing and other preventive measures |  |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Ivanuša, Croatia | Deterioration of lifestyle habits in less resilient people due to rapid changes  Reduction in health care availability  Higher morbidity and mortality  Limited use of secondary prevention measures in CV patients  Health disruption in high risk CV patients due to fear of consequences and uncertainty | recommencing performing the traditional form of rehabilitation  Ensuring the application of hygienic procedures and social distancing  Installing protective glass on reception desks  Implementing a fully virtual program for the first time for CV patients  easy-to-reach methods of communication, such as telephone-delivered or text messaging interventions for CV patients  Publishing all digital content (PDF, mp4) for recorded medical exercises for CV patients  Including 80 virtually involved CV patients in the weekly newsletter program |  |  |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Marko  Croatia | The dual **mental pressures** of COVID-19 and earthquake  Restrictive public health measures  Leading to  unintended **psychological** and social consequences  The people who are more vulnerable to **biological and psychological** stressors  More people are affected mentally by the pandemic than the infected ones  The **mental** challenge of COVID was reinforced by another deeply traumatic experience (Earthquake)  Variety of effects of disasters on individuals |  |  |  |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Quigley, Croatia | compound risks of cascading crises  Social distancing collapsed temporarily after the earthquake  Disruption of people’s comforting gatherings after the earthquake due to clamping down on lockdown measures  Increase in COVID transmission despite clamping down on lockdown measures |  |  | Reducing COVID risks by advancing preparation for natural disasters to enforce actions more efficiently and systematically |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| **Šago**, Croatia | Distress of contradictory measures: ‘staying home’ meaning ‘social distancing’ and ‘going out’ meaning ‘social gathering’  Psychotic experience of fear, uncertainty, and double blind messages  The numerous new psychological challenges general population and therapists had to adjust | Rapid changes in the scope of practice  choosing a variety of tele-psychiatry modalities with online technologies, e.g. Skype therapy  regular telephone support and consultation |  | More attention to the vulnerable groups through telemedicine  The therapists’ need for flexibility and resourcefulness |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Tisljaric, Croatia | some notable traffic mobility patterns during the natural disasters |  |  | The information and captured pattern could be useful for Psychological effects on the mobility pattern during the crisis.  one radar detector can be a valuable source of the information to emphasize the importance of real-time traffic data collection in extraordinary situations |
| **The earthquake** | **Challenges** | **Successful management of the challenge** | **Public cooperation** | **Recommendation** |
| Allen  Haiti |  | The Government of Vanuatu’s strict health protocols for all humanitarian cargos, risk reduction strategy  COVID-19 risk-reduction strategy: learning from the  post-earthquake cholera epidemic in Haiti |  | ensuring that all disaster-response personnel (national/international), entering damaged areas, are disease-free  Making sure that aid workers not bring COVID-19 to these locales.  The temporarily practical prevention strategy is a vigorous, well-publicized, strongly-supported **masking campaign** |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Hashimoto, Japan | (Pharmacists) Lack of full utilization of the current medical/social framework in Japan  Ineffective supply system distribution during COVID-19 outbreak and lack of engagement of PhDLS |  |  | (For pharmacists) establishing a supply system for drugs and sanitary materials by the pharmacists in GEJE **like 2011 earthquake experience**  Providing helpful information to define pharmacists’ role in ongoing COVID-19 pandemic  The engagement of the pharmacists in relief activities in large-scale disasters  Reflecting the GEJE, Pharmacists helped insightfully the confused on-site health care professionals with checking the ingredients of drugs and suggested available alternatives to prescriptions  Raising awareness of the evacuees to observe sanitation in the sites by the pharmacists |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Hori, Japan | The commonalities of the two disasters led to a recurrence and exacerbation of initial symptoms of subthreshold PTSD  Attachment to the area and lack of social support contribute to symptom’s chronicity  The urgent atmosphere of COVID-19 as a trigger for another traumatic reactions |  |  | Being aware of the possibility that PTSD may occur for both the infected and those experiencing atmospheric change of society  The stakeholders’ awareness of the calming effect of recognizing the horrors of disasters; lack of recognition: frustration  Informing the community about the great psychological damage caused by atmosphere of harsh criticism  Establishing remote support system for mental care |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Nogami, Japan | (Businesses) Major changes caused by the two disasters; Maintaining energy policy and how/where people work and interact  Invisibility of both radioactivity and virus make social media the source of information  Destruction of industrial supply chains  Hesitation of the investors in unclear circumstances |  |  | Government support to sustain the businesses through the crisis  Sustaining essential businesses in disasters by timely backing  High quality information (disclosure) from the business management  Cooperation between management and stakeholders |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Sacamoto, Japan | The increased risk of transmission of infectious diseases in evacuation centers |  |  | Necessity of maintaining sanitary environment in evacuation centers  Community empowerment and self-reliance at the evacuation centers |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Mexico, Ramirez | Challenges and restriction imposed by the COVID-19 | Observing all prevention recommendation:  1 Wearing masks  2 Using alcohol gel  3 Frequent handwashing  4 Keeping 1.5 m distance from each other  5 Using only one vehicle, washed and disinfected  6 sage interaction with the people  7 constant vigilance/attentiveness |  |  |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Adhikari, Nepal | Worsening of the long-term impacts of earthquake during COVID-19 era  Corruption in Nepal’s health system and prevention in earthquake rebuilding and COVID-19 response  Escalation of vulnerability and poverty due to mobility restrictions against COVID-19 across the borders  The risk of an explosion of COVID-19 in urban areas due to poor living conditions  Lock down as the only option due to absence of effective testing, tracking and tracing strategy impacting economy, health, and rebuilding  Drop in the source of Nepal’s economy reduces earthquake rebuilding budget  Rebuilding process has been impacted by COVID |  |  | Immediate measures to support the health system to curb/restrain/limit the COVID- 19 pandemic and maintain the rebuilding |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Basnyat, Nepal | Criticism on the government’s inefficiency and lack of transparency in providing basic necessities for the lower class and the women following the earthquake  Today’s similar scenario in the government’s failing response to take questions of gender and class toward COVID-19 crisis  **The government unresponsive attitude**  Countless Nepali families are experiencing severe impacts of the pandemic without response from the government |  | **Women-centric initiatives during the earthquake**  2015 Nepali women in the forefront of rebuilding communities  2015 Nepali women as community workers and disaster management leaders  Women as strong pillars of Nepal in the aftermath of 2015 crisis | the necessity of the remembering the women’s key role to Nepal’s recovery and resilience post-2015  The state’s requirement for the recognition of women’s capabilities for local decision-making and planning structures, and mitigation of coronavirus impacts |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Dhungana, Nepal |  |  | **citizen-centric initiatives/politics**  Questioning, challenging and reversing the governmental and international actors’ response to the crisis  Similarity between citizen-centric politics of COVID-19 crisis in Nepal and that of the post-earthquake one | Determining citizen-driven Ombudsman/supervisory body to oversee the immediate and longer-term response.  Monitoring the mobilization and use of funds, implementation of relief and recovery packages at the local level  Community-based civil society campaign to monitor government budget and expenditure at the local level  Community-based civil society campaign to conduct media scrutiny, focused on the conduct and performance of officials handling the response at national and local level  The trigger of participatory and accountability politics revealing governance weaknesses by disasters |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation** |
| Punaks, Nepal | **Nepal, unprepared for an infection outbreak** Nepal’s worse preparation for COVID-19 than that for 2015 earthquake  The unpreparedness was due to attribution of significant policy and resources being focused on earthquake preparedness.  Unlike the surge of international donors and humanitarian response organizations after 2015 earthquake, the country has not received anywhere close to the same level of support | Despite the risks for children and families during the emergencies, innovations in child protection were also developed.  Learning from African countries for effective child protection responses |  | Opportunity for government actors at the local level to embrace more responsibility in the absence of international interference |
| **The earthquake** | **Challenges** | **Successful response of the health care system** | **Public cooperation** | **Recommendation**  **The lessons learned** |
| Pankow  Utah  **Responding to the 2020 Magna, Utah,**  **Earthquake Sequence during the COVID-19**  **Pandemic Shutdown** |  |  |  | **Expecting more earthquakes**  **Communication means during the operations**  **Remember to have plenty of spares and other supplies**  **Keeping a set of un-provisioned (cold) SIM cards on hand.**  **Rapid information for the public**  **Accurate information from the authoritative source**  **Have a plan, practice it, and update it!** |