**Appendix4:** Code, Sub-category, and category derivation process from the *Challenges* observed in the studies related to Great East Japan’s Earthquake (2011)

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| --- | --- | --- | --- |
| **First author of the selected articles, earthquake** | **Codes (Challenges)** | **Sub-categories** | **Categories** |
| Hashimoto, Japan | (Pharmacists) Lack of full utilization of the current medical/social framework in Japan  | Inefficient utilization of the pharmacists’ advanced skills | Inefficient engagement of the pharmacists |
| Ineffective supply system distribution during COVID-19 outbreak  | Ineffective supply system distribution during the pandemic | Ineffective supply system distribution |
|  lack of engagement of PhDLS | Lack of engagement of the pharmacists | Inefficient engagement of the pharmacists |
| Hori, Japan | The commonalities of the two disasters led to a recurrence and exacerbation of initial symptoms of subthreshold PTSD | Exacerbation of initial symptoms of subthreshold PTSD | Exacerbation of initial symptoms of subthreshold PTSD |
| Attachment to the area and lack of social support contribute to symptom’s chronicity | Confinement and lack of social support causing chronicity of initial symptoms of subthreshold PTSD | Exacerbation of initial symptoms of subthreshold PTSD |
| The urgent atmosphere of COVID-19 as a trigger for other distressing reactions such as insomnia and impatience | Triggering more distressing reactions due to COVID-19 | Exacerbation of initial symptoms of subthreshold PTSD |
| Nogami, Japan | (Businesses) Major changes caused by the two disasters; Maintaining energy policy(by earthquake) and how/where people work and interact (by COVID-19) | Maintaining energy policy by earthquake and the way people work and interact by COVID-19 | Detrimental impacts of the two disasters on businesses |
| Invisibility of both radioactivity and virus make social media the source of information | Social media the source of information [businesses were shut down] | Detrimental impacts of the two disasters on businesses |
| Destruction of industrial supply chains | Destruction of industrial supply chains | Detrimental impacts of the two disasters on businesses |
| Hesitation of the investors in unclear circumstances | Hesitation of the investors | Detrimental impacts of the two disasters on businesses |
| Sacamoto, Japan | The increased risk of transmission of infectious diseases in evacuation centers | The increased risk of transmission of infectious diseases in evacuation centers | Increased risk of infection transmission in evacuation centers |

**Table 5.** Codes and categories derived from the *Recommendations* observed in the studies related to Great East Japan’s Earthquake (2011)

|  |  |  |  |
| --- | --- | --- | --- |
| **First author of the selected articles, earthquake** | **Codes (Recommendations)** | **Sub-categories** | **Categories** |
| Hashimoto, Japan | (For pharmacists) establishing a supply system for drugs and sanitary materials by the pharmacists in GEJE like 2011 earthquake experience | establishing a supply system for drugs and sanitary materials by the pharmacists | What pharmacists can do during COVID-19 pandemic |
| The engagement of the pharmacists in relief activities in large-scale disasters | The engagement of the pharmacists in relief activities | What pharmacists can do during COVID-19 pandemic |
| Providing helpful information to define pharmacists’ role in ongoing COVID-19 pandemic | to define pharmacists’ role in ongoing COVID-19 pandemic | What pharmacists can do during COVID-19 pandemic |
| 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 | Checking the ingredients of drugs and suggested available alternatives to prescriptions by the pharmacists | What pharmacists can do during COVID-19 pandemic |
| Raising awareness of the evacuees to observe sanitation in the sites by the pharmacists | Raising awareness of the evacuees to observe sanitation | What pharmacists can do during COVID-19 pandemic |
| Hori, Japan | Being aware of the possibility that PTSD may occur for both the infected and those experiencing atmospheric change of society | Awareness of PTSD occurrence for both the infected and those experiencing drastic life changes | Consciousness raising to mitigate the psychological impacts of the two disasters |
| The stakeholders’ awareness of the calming effect of recognizing the horrors of disasters; lack of recognition= frustration | The stakeholders’ awareness of the calming effect of recognizing the horrors of disasters | Consciousness raising to mitigate the psychological impacts of the two disasters |
| Informing the community about the great psychological damage caused by atmosphere of harsh criticism | Informing about the psychological damage of harsh criticism | Consciousness raising to mitigate the psychological impacts of the two disasters |
| Establishing remote support system for mental care | Establishing remote support system for mental care | Establishing remote mental care support system  |
| Nogami, Japan | Government support to sustain the businesses through the crisis | Sustaining businesses through government support | Possible businesses-sustaining measures |
| Sustaining essential businesses in disasters by timely backing | Sustaining businesses through timely backing | Possible businesses-sustaining measures |
| High quality information (disclosure) from the business management | High quality information (disclosure) from the business management | Possible businesses-sustaining measures |
| Cooperation between management and stakeholders | Management-sponsor cooperation | Possible businesses-sustaining measures |
| Sacamoto, Japan | Necessity of maintaining sanitary environment in evacuation centers | maintaining sanitary environment in evacuation centers | Possible community empowerment measures at evacuation centers |
| Community empowerment through self-reliance at the evacuation centers | Prior self-reliance empowerment at the evacuation centers | Possible community empowerment measures at evacuation centers |