

# Chapter 36

## Disaster and Mental Health

Field of expertise: Disaster Psychiatry

Yasuto Kunii & Hiroaki Tomita

Translated by Catherine Sachi Kikuchi

### Summary

The need for mental health in disaster situations in Japan grew out of the Great Hanshin-Awaji Earthquake and came to fruition after the Great East Japan Earthquake. As a result, we now have the organization of the Disaster Dispatch Psychiatric Team (DPAT) and mid- to long-term support activities. In the future, it will be necessary to enhance disaster preparedness by providing support based on scientific evidence and an understanding of the reality of the situation, through incorporating scientific methods such as remote support, biosensing, AI, brain science, robotics, and virtual reality.

**Keywords:** DPAT, mental health care, post-traumatic stress response, nuclear power plant accident, affected communities, use of advanced technology

### Introduction

Although Japan has a long history of major earthquakes and tsunamis, the need for mental health care during and after disasters was not recognized until relatively recently, after the Great Hanshin-Awaji Earthquake. After the Niigata-Chuetsu Earthquake and the Great East Japan Earthquake, the importance of mental health during disasters has been widely recognized.

### 1: Problems Revealed by the Great East Japan Earthquake (Tomita, 2018)

#### What happened?

Because of what we learned from the Great Hanshin-Awaji Earthquake and subsequent disasters, recognition of the need for mental health care was widespread among psychiatrists and other professionals when the Great East Japan Earthquake struck. A lot of support was provided immediately after the disaster. In Iwate Prefecture, a total of 29 mental health care teams from in and out of the prefecture conducted activities, providing a total of 9,811 victims with 5,553 consultations and 2,083 prescriptions. In Miyagi Prefecture, 33 teams were dispatched, and 12,794 people were given consultations. In Fukushima Prefecture, the Disaster Response Headquarters were in charge of responding to hospital transfers, while the Mental Health Welfare Center started

consultation calls and began supporting evacuation centers together with Fukushima Medical University. Many teams from outside of the prefecture also came to provide support, with 54 teams coming to the Soso area, where the Fukushima Daiichi Nuclear Power Plant is located. A total of 90 teams provided support in the prefecture.

### **The reality of the damage**

The Great East Japan Earthquake was a disaster that had an unprecedented impact on the psychiatric care system. In Iwate Prefecture, psychiatric hospitals suffered only minor damage, but in Miyagi Prefecture, 3 coastal hospitals were inundated by the tsunami, 24 patients passed away, and 300 patients had to be transferred. In Fukushima Prefecture, 1 hospital was hit by the earthquake, 1 hospital was flooded by the tsunami, and inpatients had to be evacuated and moved within the facility. Five hospitals located in the Soso area were unable to operate due to the accident at the Fukushima Daiichi Nuclear Power Plant following the tsunami, and 710 inpatients had to be evacuated and transferred. The region's psychiatric care was temporarily destroyed. Later, 2 hospitals managed to resume operations, but 2 hospitals located within a 20 km radius of the nuclear power plant were closed, and 1 hospital was forced to open a clinic outside the radius, resulting in most of its staff retiring and the overall staff number shrinking. Even without the extensive damage described above, there were many medical institutions that experienced difficulties in areas such as securing food, fuel, medicines, as well as water and plumbing, telephones, and staff commutes.

## **2: Paradigms Destroyed by the Earthquake**

### **Conventional wisdom and necessary responses**

At the time of the Great East Japan Earthquake, many psychiatrists were aware of the importance of disaster relief from their experience in the Great Hanshin-Awaji Earthquake, and the knowledge they had accumulated through their relief activities had been published in the form of guidelines and preparedness manuals. However, these manuals were not shared in advance, nor was training conducted. In addition, the system and policies for mental health care services in the aftermath of the Great East Japan Earthquake were established through trial and error after the disaster. The efficiency of disaster response will differ greatly depending on whether basic policies are formulated in advance by organizations involved in mental health, and whether or not the people involved are familiar with and share these policies, which is an issue that still needs to be resolved.

The unprecedented event of the nuclear power plant accident caused by the tsunami of the Great East Japan Earthquake has complex and important issues that need to be examined separately from the direct damage caused by the earthquake and tsunami. Prior to the Great East Japan Earthquake, there was no disaster response preparedness for a nuclear disaster. The situation after the accident, which has not yet been resolved, has had a wide-ranging impact on the mental health of local residents (Kunii et al., 2016). It is necessary to consider the possibility of a nuclear disaster occurring again. The recent pandemic caused by the novel coronavirus is also a disaster that cannot be detected by the five senses and has no end in sight, and the stigma of the affected people is similar to the situation after a nuclear accident.

### 3: A New Approach

At the time of the Great East Japan Earthquake, there was no systematic support system in place for psychiatric response and mental health support in the affected areas. The Disaster Psychiatric Assistance Team (DPAT) (Figure 36-1) established a system for clarifying the chain of command immediately after the disaster, consolidating information, building a system of coordination within the framework of overall disaster medical support, and introducing pre-registration and training. Since then, the system has produced good results, such as the relatively smooth transfer of patients from psychiatric hospitals in the area affected by the Kumamoto Earthquake. In preparing for large-scale, long-term support systems for disasters such as earthquakes occurring directly beneath the Tokyo metropolitan area and in the Nankai Trough, it is necessary to establish policies for mental health professionals from a wider range of fields to be effective in disaster recovery support and to share these policies with the entire community.

A joint survey conducted since the Great East Japan Earthquake by Tohoku University and Shichigahama Town, Miyagi Prefecture, has shown once again that adverse effects on mental health persist over a long period of time (Figure 36-2). The post-traumatic stress response (a response that occurs after a traumatic experience, such as the disaster experience), psychological distress, and insomnia shown by disaster victims varied depending on their social interaction, alcohol consumption, and exercise habits (Utsumi et al., 2020). These findings indicate the necessity of continuing to monitor and support the affected communities for a longer period of time after the disaster.

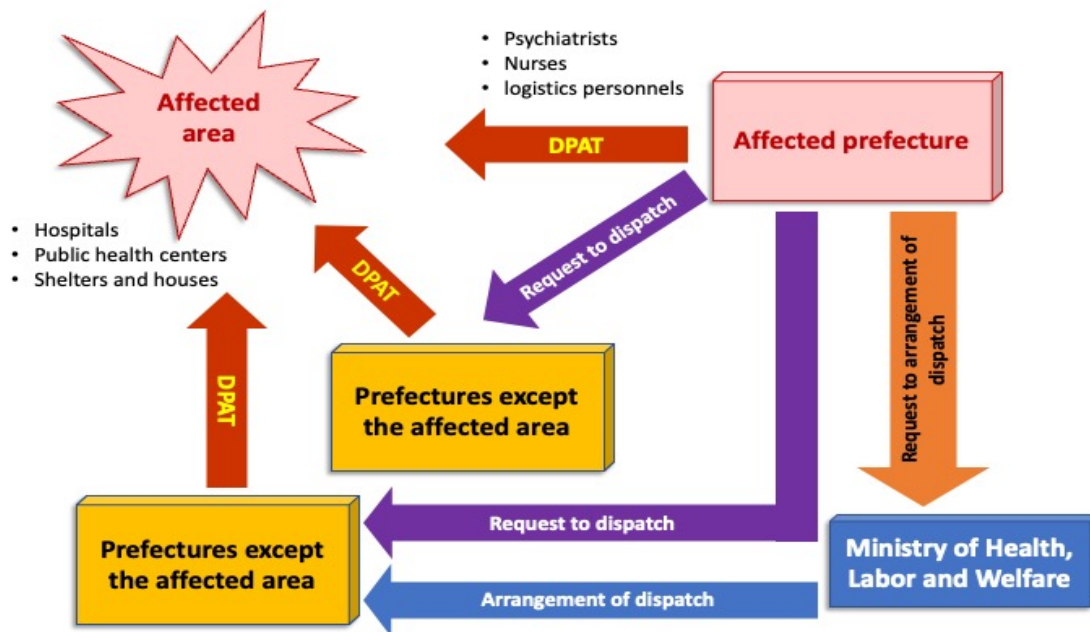


Figure 36-1. The Disaster Psychiatric Assistance Team (DPAT)

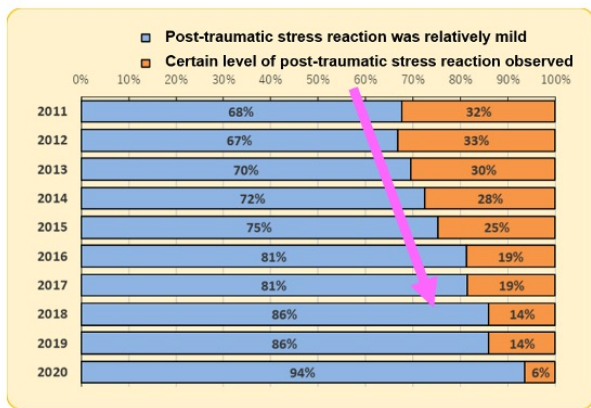


Figure 36-2. Longitudinal trends of post-traumatic stress response in Shichigahama Town, Miyagi Prefecture, after the Great East Japan Earthquake

## 4: Achievements and the Future

### A new approach to disaster science

Since the Great Hanshin-Awaji Earthquake, outreach and support for salons have been developed by psychiatric care centers after large-scale disasters, and have shown some effectiveness. However, the manpower of mental health professionals is limited, and there is a need to establish new methods of disaster psychiatry, including scientifically based assessment, prevention, care, and treatment. In terms of mental health measures under the special disaster situation of the novel coronavirus pandemic, remote support that uses online tools has been implemented, and biosensing monitoring of activity, sleep, and autonomic nerve functions have been tested. We expect that new intervention approaches such as AI technology, brain science, robotics, and virtual reality technology will be introduced to process the vast amount of information obtained using these advanced technologies.

### Conclusion - from the authors

The years from the Great Hanshin-Awaji Earthquake to the Great East Japan Earthquake have instilled in those involved in psychiatry and health care the need for mental health support in the aftermath of disasters. However, even after experiencing these disasters, there is still much room for improvement in preparedness and response measures. Whether the lessons we have learned from past earthquakes can be utilized effectively in the event of an earthquake directly beneath the Tokyo metropolitan area or in the Nankai Trough will depend on our future efforts.

### References

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