# The Great East Japan Earthquake and Mental Health Care Facing Adversity

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## 1. Introduction

On March 11, 2011, the largest earthquake in recorded Japanese history, a huge tsunami, and a nuclear accident occurred, causing enormous damage from Tohoku to Kanto. The number of people dead or missing was 24,829 (two months after the earthquake), and the number of evacuees in Iwate, Miyagi, and Fukushima reached just under 130,000. Aftershocks continued; on April 12, 126 were counted, and the Fukushima nuclear accident has not yet ended. The disruption of lifelines and traffic caused by the earthquake made it extremely difficult to grasp the disaster situation, and the scale of the disaster and its wide area, which had never been experienced before, pose many challenges to our support activities. In this article, I would like to look back on the mental care activities after the earthquake and report on current problems.

## 2. Disaster Damage to Psychiatric Hospitals and Transfer of Admitted Patients

There are 38 hospitals with psychiatric beds in the prefecture, and 30 of them were damaged. Among them, hospitals located in the coastal areas of Kesennuma, Ishinomaki, and Iwanuma suffered from inundation and outflow due to the tsunami, and hospitals in Ishinomaki and Iwanuma had to be closed because of difficulty in continuing medical treatment. The building of the Hospital in south of Sendai collapsed and inpatients had to be moved to a gymnasium. Even if they were spared direct damage, building damage and disruption of lifelines were serious for psychiatric hospitals, which often have many inpatients. In addition, the outpatient clinic function was significantly reduced. According to the prefecture's summary, the total damage to the facilities and equipment of psychiatric hospitals has reached about 2.5 billion yen.

Owing to the outage of two hospitals in Ishinomaki and Iwanuma, 291 patients were requested to be transferred immediately. However, the difficulty of collecting information hindered the understanding of the situation of the disaster-stricken hospitals, inpatient information was leaked because of the tsunami, and the psychiatric hospitals in the prefecture themselves were also damaged, resulting in a shortage of staff. The shortage of supplies such as food and medicine became serious, and it was extremely difficult to promptly secure a host hospital because of a lack of prior disaster response or agreement with related organizations. As a result, there were 38 hospitals in the prefecture (13 psychiatric hospitals, 15 internal medicine hospitals, and 10 facilities for the elderly), and 10 hospitals in Yamagata Prefecture cooperated from outside the prefecture. During hospital transfers, there were problems such as securing vehicles for transportation, and it took 20 days after the disaster for all patients to be transferred.

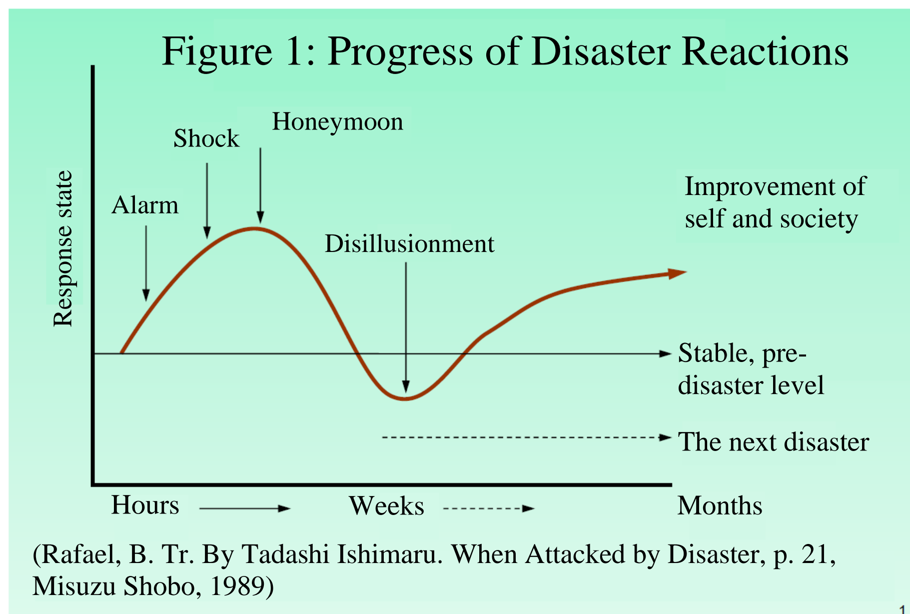
A disaster medical care headquarters has been set up in the prefecture and a disaster medical coordinator has been assigned, but unfortunately psychiatric medical care is outside that framework, and a public-private disaster relief system has not been established. Therefore, it can be said that the above results were brought about by psychiatric institutions' lack of disaster preparedness. In the future, it will be necessary to build a solid support system in preparation for disasters.

## 3. Disaster and Stress

The greater the scale of a disaster, the greater the stress that strikes afterward. The Great East Japan Earthquake was a complex combination of earthquake, tsunami, and radioactive contamination, and was utterly unprecedented. Death and related fear, trauma, loss, drastic changes in the environment, experiences of carnage at disaster sites, slow reconstruction and the confrontation with reality it forces, loss of hope, anger, and burnout can all lead to long-term stress.

Rafael shows the psychological reactions of disaster survivors over time (Fig. 1). In the early stages, alertness increases, and people experience shock, stunned self-defeat, emotional paralysis, derealization, and fear. After that, over-awakening and alertness become stronger, and during the honeymoon period, a feeling of mental upliftment continues. However, frustration and hypersensitivity to things remind people of the horrors immediately after the disaster. Fear, tremors, nausea, and so on occur. These are triggered and amplified by aftershocks. During the

disillusionment period, there are differences among the survivors, causing collapse, fatigue, a feeling of unreality, helplessness, anger, depressed mood, guilt, and grief. They also cause physical symptoms such as insomnia, loss of appetite, palpitation, nausea, and vomiting. During the period of improved adaptation between individuals and society (reconstruction period), the mood is stable and future prospects become clear. However, when encountering minor difficulties, individuals may experience flashbacks or become depressed from the experience of loss. Looking back on the Great Earthquake at this point, it seems that Rafael's reaction status over time varies considerably from person to person. In fact, the young doctors who worked diligently to support the survivors looked back and recalled that the honeymoon period was about three months, but the state and duration of the reaction were not uniform. There were considerable individual differences based on personal experiences and awareness.




Everyone who has been affected by a disaster feels, among other things, (1) that the earthquake and tsunami were scary, (2) sadness and loneliness at losing something important, (3) extreme helplessness, (4) anger being forced to suffer such a fate, (5) regret and self-blame for not having been able to help those close to them, (6) anxiety about the lack of prospects, and (7) indifference and apathy toward everything. In addition, the changes that are likely to occur in the body are (1) I can't get tired, (2) insomnia and nightmares, early morning awakening, (3) poor memory, inability to concentrate, and frustration, (4) nausea and loss of appetite, stomachache, (5) diarrhea and constipation, (6) palpitations, sweating, cold hands and feet, and (7) headaches, joint pain, dizziness, changes in personality, and so on. These are acute stress reactions that anyone can experience.

Disaster-related mental illnesses include the acute stress reactions mentioned above, sudden palpitations, dyspnea, dizziness, sometimes death-like intense anxiety panic disorder, shortness of breath, sweating, dizziness, and chest pain; generalized anxiety disorder with discomfort in the abdomen, numbness in the limbs, and a burning sensation; anxiety disorders including phobias, flashbacks, dyspnea, PTSD, paralysis, sleeplessness/nightmares, anger, loss of appetite, depression, inability to concentrate, inability to enjoy oneself, feelings of worthlessness, depression, and self-injury; and alcohol-related disorders that cause physical and mental symptoms.

The following are examples.

Case 1: A woman in her 30s. She was recently selected for temporary housing, but thinking about her hometown makes her cry. She returned from a mass shelter yesterday, and just looking at the sea is enough for her to burst into tears. "Am I weird?" she asks. "I can sleep at night, but I dream of dead people."

Case 2: A woman in her 70s. She is in a shelter, and she feels a swaying sensation even though there are no earthquakes. She wants to sleep soundly but won't take sleeping pills because of the fear of an earthquake or tsunami occurring while she sleeps. Her life in the evacuation center continues to drag on, and recently, it appears that she has started to become quite forgetful.

4. Mental Health Care

On March 13, after the disaster, in accordance with the Disaster Countermeasures Basic Law, the prefecture requested other prefectures to dispatch mental care teams through the Ministry of Health, Labour, and Welfare. According to the Disaster Relief Act, the dispatch period was until October 31, but part of it was continued until March 2012. In addition to the prefectural route, various university psychiatry departments (through the Tohoku University Department of Psychiatry), teams from the Japan Psychiatry Clinic Association, and private volunteers also supported the survivors. The main activities of these mental care teams were patrols and visits to evacuation centers in collaboration with municipal health organizations. Initially, psychiatric relief activities were the main focus, but awareness activities for survivors, consultations, visits, and medical examinations were also carried out. This wide range of initiatives gradually developed into community mental health activities, and were taken over by local Health Centers and municipalities. According to the prefecture's summary, the number of mental care teams dispatched peaked at a maximum of from the end of March to April, and then gradually declined, reaching a total of 4519 people assisted as of October 31, with 11705 people eligible for support. Figure 2 shows the activities of these mental care teams from March to October. During this period, 11,705 people were supported, including 909 children.

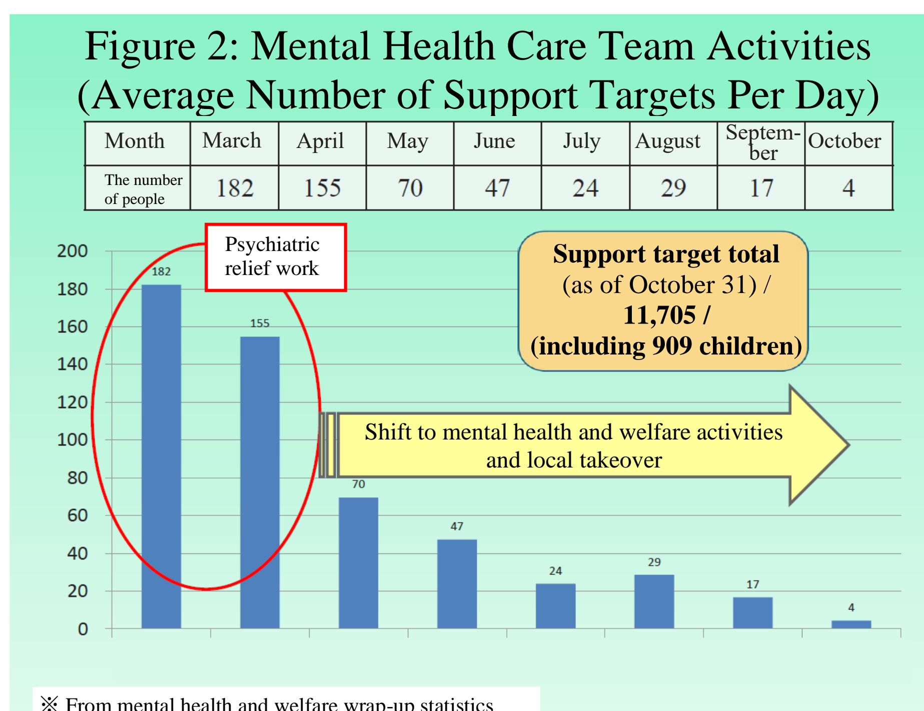


Figure 2: Mental Health Care Team Activities (Average Number of Support Targets Per Day)

| Month | March | April | May | June | July | August | Septem-ber | October |
|---|---|---|---|---|---|---|---|---|
| The number of people | 182 | 155 | 70 | 47 | 24 | 29 | 17 | 4 |


※ From mental health and welfare wrap-up statistics

One week after the earthquake, the Prefectural Disability Welfare Division, Sendai City, Tohoku University, and people involved in psychiatry in the prefecture gathered to hold mental care countermeasure meetings to grasp the current situation of disaster area support and develop future care activities. Activities such as liaison and coordination were carried out for about half a year. In July, the need for medium- to long-term mental care measures was discussed, and we visited the Disaster Mental Health Care Centers established in Hyogo and Niigata prefectures. In December, the MDMHCC was opened under the initiative of the prefecture.

Owing to the expansiveness of the disaster area, the MDMHCC was given a Stem Center in Sendai and Regional Centers in Kesennuma and Ishinomaki. Table 1 shows the number of staff at the MDMHCC. Even before the disaster, there was already a shortage throughout the prefecture of mental health and medical staff and specialists; it was, therefore, rather difficult to meet our staffing needs through prefectural hires alone, and we have made use of a national transfer/dispatch system through the Ministry of Health, Labour, and Welfare. As of May 1, 2013, the number of staff is 57, of which 38 are full-time and 19 are part-time. We have 11 psychiatrists, 19 psychiatric social workers, 10 clinical psychologists, seven public health nurses, five nurses, one occupational therapist, and four clerical workers. In addition, we have installed transfer employees in Iwanuma, Ishinomaki,

Higashimatsushima, Kesennuma, Onagawa, and the Ishinomaki Public Health Center, where a total of nine people are engaged in support activities.

Table 1: MDMHCC Staff Numbers

57 staff members
(38 full time, 19 part-time)

(As of 5/1/2013)

| | Stem Center | | Ishinomaki Reg. Cen. | | Kesennuma Reg. Cen | | Total |
|---|---|---|---|---|---|---|---|
| | Full | part | Full | Part | Full | Part・ | |
| Psychiatrist | 1 | 7 | 0 | 1 | 0 | 2 | 11 |
| Psychiatric social worker (PSW) | 9 | 1 | 6 | 0 | 3 | 0 | 19 |
| Clinical psychologist | 3 | 3 | 1 | 0 | 2 | 1 | 10 |
| Public health nurse | 3 | 0 | 2 | 1 | 1 | 0 | 7 |
| Nurse（NS） | 1 | 3 | 1 | 0 | 0 | 0 | 5 |
| Occupational therapist | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Administrative | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 21 | 14 | 11 | 2 | 6 | 3 | 57 |
| (Re-)transfers | Iwanuma(Ns1) | | Ishinomaki (0T1) Higashimatsushima（PSW2、CP1） Onagawa（PSW2）Ishinomaki Health Center（NS1） | | Ishinomaki （PSW1） | | 9 |

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The main activities of the MDMHCC are raising public awareness; providing support for disaster survivors, those who support municipalities, SWCs, Regional Comprehensive Support Centers, and activities carried out in temporary housing and other communities; human resource development, and research.

Table 2 shows the activity results of the MDMHCC from April 2012 to March 2013. There were 4,492 interview consultations, and the chief complaints were insomnia (22%), physical symptoms (19%), depression (17%), anxiety/fear (16%), lethargy (10%), and alcohol (10%). Background factors included the following: changes in the living environment (29%), domestic problems (15%), economic life reconstruction problems (14%), loss of a loved one (11%), and unemployment/related problems (8%). In addition, the number of telephone consultations was 1,945.

Table 2: MDMHCC Activity Achievements

(4/2012～3/2013)

- Interview consultations: 4,492
  Chief complaints: Insomnia 22%, physical symptoms 19%, depression 17%, anxiety/fear 16%, lethargy 10%, alcohol 10%.
  Background factors: Changes in the living environment 29%, domestic problems 15%, economic life reconstruction problems 14%, loss of a loved one 11%, and unemployment/related problems 8%.
- Telephone consultations: 1,945

The following introduces part of our work through an example case.

Case 3: Mrs. C, in her 60s, lives alone in private rental housing. She ran a company with her husband on the coast before the earthquake. After spending some time in a shelter, she entered private rental housing. She received a visit request from the city because she had a high K6 score on a private rental housing health survey. At the time of the first visit, Mrs. C said, “When the tsunami came after the big earthquake, my husband and I evacuated to the second floor of my house. My husband went

to the first floor, saying there was something important he had to do. After a while, the tsunami rushed in, so I went up to the roof from the second floor. When I looked down, my husband was waving, caught in the tsunami. Close enough for me to touch. I told him to crawl up, but I guess he was caught between some rubble, and couldn't move. Eventually, I lost sight of him. After the tsunami had receded and I went downstairs, I found his dead body in the rubble. Why didn't I stop him from going down? I feel like I killed him myself. I wish I had died with him. That image of him waving his hands at me is seared into my memory. Whenever I see others talking happily, I get so jealous. Why did I have to go through such a horrible experience? I envy others. I avoid going out during the day and try not to meet anyone. My son and his wife don't come to see me; they're apparently busy rebuilding their company. Sometimes I can't sleep at night, and my doctor has given me sleeping pills." Mrs. C told me this story with tears in her eyes, and we decided to put her on continuing visitations.

5. In Place of a Summary

Many survivors are still forced to live in temporary or designated temporary housing. Figure 3 shows the results of the prefecture's 2012 emergency temporary (container-type) housing resident health survey and the 2011 private rental housing resident health survey. About 19% were ill and had a serious mental illness. Further, 9% had a K6 score of ≥13 (as compared to 4.6% in a national survey), indicating severe mental illness, and 15% had insomnia, with their physical and mental health undermined without any prospect of improvement. It is said that problematic behaviors such as truancy, bullying, and violence are increasing for children and students, and at home, deterioration of family relations due to domestic violence and divorce has become a problem. In addition, supporters, including local government employees, are utterly exhausted, and support for them continues to be a major issue. Issues of concern in the future include the emergence of a scissor disparity (between communities and individuals able to achieve reconstruction and those unable to do so) as shown by our experiences following disasters such as the Great Hanshin and Niigata Chuetsu-oki earthquakes. Amidst these circumstances, solutions to and countermeasures against depression, dementia, alcohol/drug-related problems, suicide, and other issues will be required.

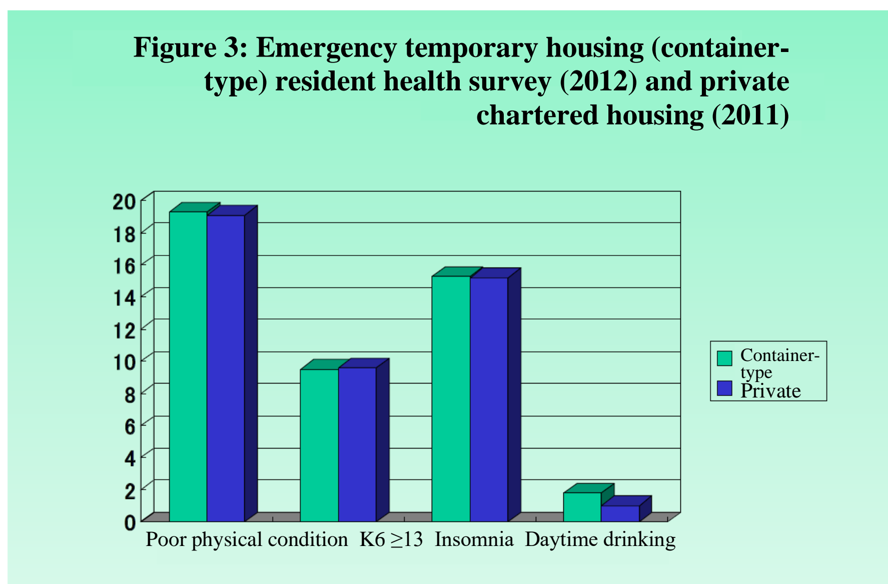

**Figure 3: Emergency temporary housing (container-type) resident health survey (2012) and private chartered housing (2011)**

To deal with these issues, the revitalization of community mental health activities centered on cities and towns is essential. However, owing to this large-scale disaster, it is difficult for existing community mental health systems to respond to the issues that will arise. There is, therefore, a need for long-term municipal-level support systems, such as those offered by the MDMHCC. As it is well-known that it is impossible to maintain or improve mental health without revitalizing the living infrastructure, reconstruction must be completed with utmost haste. At the same time, from the perspective of maintaining and improving the physical and mental health of disaster victims, it may be necessary for medical and health personnel to cooperate with each other within the region and respond flexibly.

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