



Learning From the Case of the Fukushima Nuclear Power Plant Accident and the Mental Health Issues That Arise In Long-Term Disaster Relief Workers

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Abstract

The years-long pandemic of Covid-19 is expected to continue to affect many parts of the world as a disaster. Professionals working in infectious disease control will also have to serve as disaster relief workers, and there is concern that adverse health effects would occur. The author, a psychiatrist, reported on the course of a case in which a disaster relief worker who responded to the Great East Japan Earthquake (GEJE) and nuclear power plant accident in 2011 was diagnosed with bipolar II disorder and Post-Traumatic Stress Disorder (PTSD) after spending three years in an overloaded state. Based on this experience, the author pointed out the importance of recognizing PTSD and avoiding the normal practice of disaster relief workers continuing to be active in an uplifted state of mind.

Keywords

Covid-19 pandemic; Disaster relief worker; The Great East Japan Earthquake (GEJE); The nuclear accident; Fukushima; Bipolar disorder; Post-Traumatic Stress Disorder (PTSD)

Introduction

As of January 2021, more than 85 million people worldwide have been affected by coronavirus infections [1]. The Covid-19 pandemic will impose a significant physical and mental burden on disaster relief workers for an extended period, including medical personnel involved in treating infectious diseases. In such a case, the disaster relief workers may suffer from health problems, including mental health issues [2,3]. To reduce this risk, we can learn lessons from the mental health problems experienced by a disaster relief worker in the Great East Japan Earthquake (GEJE) and the nuclear power plant accident[4].

Study Description

In this article, the author introduces the contents of a case report already published in 2020 titled “Post-Traumatic Stress Disorder (PTSD) and bipolar II disorder in Fukushima disaster relief workers after the 2011 nuclear accident” [4] (Table 1).

Acute phase stress: Soon and days after the disaster	
1	Earthquake
2	Tsunami
3	Search for bodies
4	Nuclear accident
Subacute phase stress: Months after the disaster	
1	Work with a small number of people with much responsibility
2	Being severely reprimanded by residents
3	Slaughter of animals that have gone wild
Chronic phase stress: Years after the disaster	
1	Complicated situation in the hometown
2	Work with a small number of people with much responsibility
3	Sometimes being severely reprimanded by residents
Trigger of the mental disorder: Three years after the disaster	
1	Seeing the news of flooding in another area and remembering the tsunami he had experienced

Table 1: Traumatic stress experienced by the patient during and after the disaster.

Discussion

The case study is about a local government employee who, while he and his family were affected by the disaster, continued to work devotedly in a local community disrupted by the GEJE and the nuclear power plant accident. Three years after the disaster, he developed depression

and needed to leave absence for eight months. From his first visit to the psychiatric hospital, the patient had re-experiencing symptoms such as dreams and flashbacks of traumatic scenes related to the disaster and were also diagnosed with PTSD. In addition to re-experiencing the trauma, PTSD typically shows signs of avoiding traumatic stimuli and hyper-arousal, where the nervous system is always tense and anticipates danger [5]. The patient was treated for depression with rest and antidepressant medication and improved. Then, he once terminated the treatment. During treatment, he experienced a hypomanic state in which his mood elevated. Two and a half years later, he became depressed again and returned to work after a four-month leave of absence, but the depression flared up immediately. The attending doctor decided that the patient needed intensive treatment for PTSD, which means trauma-focused cognitive-behavioral therapy called Prolonged Exposure Therapy [6]. In the course of the treatment, it became clear that the patient had experienced the following harsh experiences at the disaster and afterward [4].

- He experienced the earthquake when he was at work.
- After the earthquake, he patrolled the coastal area when the tsunami almost hit him and narrowly escaped with his life by evacuating to the second floor.
- He and the other victims spent the night isolated from their surroundings and were rescued by the Self-Defense Forces at dawn.
- At noon that day, he began to engage in community outreach. He took in several bodies, including those of people he knew. That night, he slept in his office, wrapped in a blanket.
- The next day, the nuclear accident occurred, and he evacuated his family, but he stayed there and continued to participate in the disaster recovery efforts.
- He stayed on for three months, leading the evacuation of hundreds

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of residents with a minimal number of people. During this period, he was heavily reprimanded by some residents for responses to the disaster in general.

- After returning home, he engaged in the slaughtering of many animals gone wild after the disaster and felt the burden on his heart.
- He continued to work as a local government official with a small staff in a community in turmoil after the disaster. He sometimes had to negotiate with residents seeking compensation.
- Then, he saw a TV news report about a flood in another part of Japan and had a flashback of the tsunami scene he experienced. The visual experience triggered the manifestation of depressive symptoms.

After implementing the PE therapy, PTSD symptoms improved and mood disorder symptoms became more easily controlled. Since then, he has continued to work while continuing to take small doses of psychotropic medication.

Firstly, non-psychiatric medical personnel and the whole society could recognize the symptoms of PTSD and the development of effective countermeasures [5-7]. As this case has shown, trauma-focused cognitive-behavioral therapy is effective.

In general, disaster relief workers on the front lines could be vulnerable to intense criticism from the public due to social turmoil. Such criticism can be severely damaging to disaster relief workers [8]. After the nuclear accident, where long-term health effects persisted, there were ongoing burdens on the whole community. Some disaster relief workers had to bear heavy mental and physical burdens with little supports. We cannot deny the risk of a similar situation occurring during the Covid-19 pandemic.

The mental health impact of the Covid-19 pandemic has also drawn attention to depression and PTSD. [2,3] Of course, they are quite significant, but researchers and administrators should pay more attention to hypomania. Being involved in a disaster may result in mood elevation [9]. Hypomanic reactions could be adaptive in the short term in an extraordinary situation, but they may exacerbate health problems in the long term [10].

Conclusion

In the Covid-19 pandemic, general people might also overestimate medical personnel, and uplifted professionals would offer themselves up to a sustained and demanding role. These dedications are necessary to some extent. However, the medical and social systems need to establish systematic support for continuously overly-burdened disaster relief workers.

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