

ORIGINAL RESEARCH

Psychiatric Outpatients After the 3.11 Complex Disaster in Fukushima, Japan



Arinobu Hori, MD, Hiroshi Hoshino, MA, Itaru Miura, MD, PhD, Masaki Hisamura, MD, PhD, Akira Wada, MD, PhD, Shuntaro Itagaki, MD, PhD, Yasuto Kunii, MD, PhD, Junya Matsumoto, MD, PhD, Hirobumi Mashiko, MD, PhD, Craig L. Katz, MD, Hirooki Yabe, MD, PhD, Shin-Ichi Niwa, MD, PhD
Fukushima, Japan; Saitama, Japan; and New York, NY

Abstract

BACKGROUND After the 3.11 complex disaster, fear of radioactive contamination and forced evacuation influenced a number of residents to seek psychiatric care.

OBJECTIVES This study assessed the sequential changes in the number of new outpatients and patients with acute stress disorder (ASD), post-traumatic stress disorder (PTSD), adjustment disorder, and depression after the Fukushima disaster.

METHODS We distributed questionnaires to 77 psychiatric institutions to determine the number of new outpatients between March and June in 2010, 2011, and 2012.

FINDINGS There were 771, 1000, and 733 new patients in 2010, 2011, and 2012, respectively. We observed a statistically significant increase in new patients with ASD or PTSD and a significant decrease in patients with depression in 2011, which returned to predisaster levels in 2012.

CONCLUSIONS There were time- and disease-dependent changes in the numbers of psychiatric care-seeking individuals after the 3.11 complex disaster in Fukushima.

KEY WORDS disaster, nuclear power plant accident, evacuation, acute stress disorder, post-traumatic stress disorder, adjustment disorder, depression, Fukushima

© 2016 The Authors. Published by Elsevier Inc. on behalf of Icahn School of Medicine at Mount Sinai. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

INTRODUCTION

Post-traumatic stress disorder (PTSD) and clinical depression are central concerns in the field of disaster psychiatry. The prevalences of PTSD^{1,2} and depression² typically increase in the general population after

disasters. Studies have also suggested an increased incidence rate of PTSD and depression among evacuees after the Great East Japan Earthquake.^{3,4} However, the unavailability of psychiatric care and patients' resistance to treatment have also been reported in previous disasters.⁵ The Great East Japan Earthquake

The authors declare no conflicts of interest.

All the authors have approved the manuscript and agree with submission. A.H. designed the study and drafted the manuscript, and H.H. analyzed the data. I.M., M.H., A.W., S.I., Y.K., J.M., H.M., H.Y., and C.K. made significant contributions to the manuscript. S.-I.N. designed the study, analyzed the data, and revised the manuscript.

From the Department of Disaster and Comprehensive Medicine, Fukushima Medical University School of Medicine, Fukushima, Japan (AH); Department of Neuropsychiatry, Fukushima Medical University School of Medicine, Fukushima, Japan (HH, IM, AW, SI, YK, JM, HM, HY); Department of Emergency Medicine Saitama Medical Center, Saitama Medical University, Saitama, Japan (MH); Department of Psychiatry, Aizu Medical Center, Fukushima Medical University School of Medicine, Fukushima, Japan (YK, S-IN); and Departments of Psychiatry and Medical Education, Icahn School of Medicine at Mount Sinai, New York, NY (CK). Address correspondence to A.H. (arinobu.h@gmail.com).

and subsequent tsunami, which occurred on March 11, 2011, triggered a series of meltdowns and explosions at the Fukushima Daiichi Nuclear Power Plant. Because of the secondary disasters resulting from the earthquake, this event is best described as the 3.11 complex disaster. In addition to the immediate effects of the earthquake and tsunami throughout the north-eastern Tohoku region of Japan, the disaster dispersed radioactive contamination in Fukushima Prefecture. Consequently, many individuals experienced prolonged difficulties in daily living because of the long evacuation period, leading to an increase in mental health problems. Research in 2011 on temporary housing residents of Hirono Town,⁴ 20 km south of the Fukushima Daiichi Nuclear Power Plant, revealed that 66.8% of residents were acutely depressive according to the Zung Self-rating Depression Scale,⁶ and 53.5% were considered at high risk for PTSD as assessed by the revised Impact of Event Scale.⁷ The present study surveyed psychiatric institutions regarding the total number of new patients who visited psychiatric outpatient clinics in Fukushima Prefecture 9–12 months before and 0–3 and 12–15 months after the 3.11 complex disaster. This study assessed changes in the numbers of patients diagnosed with acute stress disorder (ASD) or PTSD, adjustment disorder, and depressive episode or other mood disorders after the 3.11 complex disaster. The Ethics Committee of Fukushima Medical University approved this study (No. 1642).

METHODS

Study Population. At the time of the Great East Japan Earthquake on March 11, 2011, there were 91 psychiatric outpatient clinics (psychiatric hospitals, psychiatric clinics, and psychiatric outpatient departments at general hospitals) in Fukushima Prefecture. However, 5 clinics were unable to function after the 3.11 complex disaster. Among the 86 remaining outpatient clinics, we invited psychiatrists from 77 clinics who were members of the Fukushima Society of Psychiatry to participate in our survey of new outpatients. All patients who visited psychiatric outpatient clinics in Fukushima Prefecture for the first time on Wednesdays (Tuesday, if Wednesday was a holiday) between March 12 and June 15 (a 3-month period) in 2010, 2011, and 2012, were included in this study. A survey questionnaire was sent in 2013 to these 77 clinics. The administrators of the participating clinics provided us with written consent to use their responses as data in the present study.

Survey. Psychiatrists at the 77 clinics were asked to report the numbers of new patients enrolled at their clinics on the targeted days of each survey period. In addition, we requested the numbers of patients diagnosed with the following 3 categories of disorders: (a) ASD or PTSD, (b) adjustment disorder, and (c) depressive episode or other mood disorders. An attending psychiatrist clinically diagnosed each individual in accordance with *International Classification of Diseases*, 10th edition (ICD-10)⁸ standards.

Statistical Analyses. The data were analyzed in several ways. First, to clarify the sequential changes in the total number of new patients during the survey period (2010, 2011, and 2012), we calculated the ratios of the numbers of 3 categories of disorders (ASD or PTSD, adjustment disorder, and depressive episodes or other mood disorders) for each year against the total numbers of patients for that year. Next, to ascertain the sequential changes in the numbers of new patients in each diagnostic category during the survey period, we performed χ^2 tests using the observed and expected numbers of new patients for each category across the 3 years. The expected numbers per diagnostic category in each year were calculated by multiplying the total number of patients in that category over 3 years by the ratio of the total number of new patients for that year and total new patients over 3 years. Multiple comparisons using exact binomial tests were performed using the observed and expected numbers of patients between 2010 and 2011, 2011 and 2012, and 2010 and 2012 for all categories for which the χ^2 tests revealed significant differences between the observed and expected frequencies across the 3 years. When conducting the exact binomial tests, we first calculated the expected patient frequencies for each category and year, allotting numbers of patients for each year by dividing the total number of patients for the relevant categories according to the ratios of the total number of patients of the corresponding year / total number of patients of all 3 years. The observed and expected frequencies for categories with significant differences in χ^2 tests were compared between 2010 and 2011, 2011 and 2012, and 2010 and 2012. We used the Benjamini-Hochberg method for *P* value adjustment in these tests.⁹

RESULTS

Overview of New Outpatients. Forty of the 77 psychiatric institutions provided valid responses. One participating clinic was located in the northern

Download English Version:

<https://daneshyari.com/en/article/5677034>

Download Persian Version:

<https://daneshyari.com/article/5677034>

[Daneshyari.com](https://daneshyari.com)