

## Mini Review

# Psychological Situation of Local Residents in Fukushima after the Complex Disaster in 2011

**Arinobu Hori\***

Hori Mental Clinic, Gozen-no-Uchi 106, Kashima, Kashima-ku, Minamisoma-city, Fukushima, Japan

**\*Corresponding author:** Arinobu Hori, Hori Mental Clinic, Gozen-no-Uchi 106, Kashima, Kashima-ku, Minamisoma-city, Fukushima, Japan**Received:** April 06, 2017; **Accepted:** May 10, 2017;**Published:** May 17, 2017**Abstract**

Psychological effects of nuclear disaster is not only fear of the consequences of radiation exposure, but the results of prolonged evacuation and weakening of local communities. After Japan experienced the complex disaster in 2011, local residents of the disaster stricken area in Fukushima had to experience a number of social and psychological difficulties. Even though no clear evidence that depressive or PTSD patients increased in this area has been reported, it could be the appearance of psychological defense such as manic reaction. It is important to evaluate properly the mental conditions of people living in a situation where stable daily life was lost and to provide suitable psychiatric services to them.

**Keywords:** The great east Japan earthquake; Nuclear power plant accident; Evacuation; Community; Manic defense

## Introduction

The Great East Japan earthquake in 2011 affected extensively and enormously local residents in the disaster area, especially in the field of mental health [1]. That was a complex disaster where an earthquake and a tsunami occurred, followed by a nuclear power plant accident.

As for the spiritual burden caused by the nuclear accident, there might be many readers reminiscent of residents' anxiety about health damage such as carcinogenesis due to radiation exposure. Indeed, it has been reported that after the Chernobyl accident, women who was pregnant or had small children with high susceptibility to radiation had a particularly high risk of developing mental illness, and workers who actually worked under high radiation doses also had a higher risk [2]. However, the fear of direct health damage due to radiation exposure is only a part of the mental impact caused by nuclear power plant accident in Fukushima in 2011.

## Effects of Evacuation

Still in March of 2017, about 77 thousand of the residents of the affected area of Fukushima dai-ichi nuclear power plant accident experienced years of evacuation life, leaving ambiguous whether they could return home or not [3]. It was reported that the evacuation life itself in the acute period of disasters was harsh and, for example, in the elderly facilities in the disaster area, evacuation has increased the mortality rate [4]. Furthermore, the medical and welfare resources in the afflicted area also suffered significant damage, and it was also inevitable to reduce the mass of the medicine supplied there. Therefore, in Fukushima Prefecture, it is also reported that the disaster related death is very large [5].

For those who stayed in the afflicted areas of nuclear power plant accidents, there was also a problem of progress in aging in the area. Because children were concerned about the influence of radiation, not a few young parents with young children decided to migrate from the afflicted area. In comparison, the elderly have a strong attachment to the area where they have lived. Minami Soma City, where the author

lives, is located from about 10km to 40km north of the collapsed nuclear plant. In Minami Soma city, the proportion of elders (those aged 65 or older) in the population stood at 25.9% in March 2011, but this had increased to 32.9% by March 2013 [6].

## Weakening of Local Communities

Separation from their children or grandchildren gave severe damage to the elderly. In addition, they also experienced separation from their daily works or activities such as agriculture and forced to move to unfamiliar residency like temporary houses where the local communities were once destroyed. The number of elderly people who receive nursing-care insurance services continue to increase in Minami-Soma City, so there is a situation in the city's aged facilities that cannot deal with those elderly people because of the shortage of the working staff [7].

Due to the outflow of the population after the earthquake, the working population remaining in the afflicted area was forced to endure the situation of overwork. Let me give you an example. Takano Hospital was a hospital located 24 kilometers south of the Fukushima Daiichi Nuclear Power Plant, which was a hospital with a total of 118 beds, consist of 65 beds of a medical ward and 53 beds of a psychiatric ward. There were some doctors in this hospital until the disaster, but after the earthquake one elderly doctor was left and had to be in the charge almost all of outpatient clinics, inpatient clinics, and night shifts. There was also a case that night shifts in one year exceeded 100 times for the director. This director died suddenly at the end of 2016. He was over 80 years old [8], and it would be difficult to deny the influence of overwork. There are facts that people engaged in medical care and welfare is also victims of the disaster.

Furthermore, disastrously, there are situations where people in the afflicted area can hardly unite and cooperate together. People's heart is splitting. It is reparation money that is the biggest cause. For example, while many reparations were made to those who evacuated from the afflicted areas by the government's instructions,

compensation to those who voluntarily evacuated remains small. Besides, because compensation is done differently due to various factors, the suffered people are occasionally forced to have a sense of break-up, segmentation and solidarity. Besides that, expressing an opinion as to whether the resident is for or against nuclear power generation inevitably has a political meaning, which make the hearts of people become conflicting and avoid such occasions. Another concern is whether the work of decommissioning of the collapsed Fukushima dai-ichi nuclear power station would be really safely done or not.

## Psychological Defense of Local Residents

Under such circumstances, depression and PTSD might increase. However, it has been reported that in the research which I also participated, the number of patients suffering from PTSD who visited psychiatric institutions in Fukushima after the disaster increased only in 2011 and soon in 2012 returned to the similar as in 2010, at the same time, the number of patients suffering from depression did not increase but rather declined in 2011. We interpreted the result as that lots of people might be engaged in manic defense unconsciously against the difficulty of reality [9]. This would help residents adapting to the severe and complicated situation like evacuation after the disaster and brought them the effect of alleviating pains caused by traumas in the past disaster and anxiety of their present and future life.

However, this would not mean that the people in the disaster area are at a lower risk of psychiatric illness. The author started to live in the disaster stricken area and started to work as a psychiatrist in 2012. I experienced some patients who had severe symptoms of re-experiencing of the tsunami left unattended for several years. They often dreamed or had a flashback memory of psychological traumas of the disaster. There is also a paper which reports that the number of adjusted suicide mortality rate started to increase in Fukushima in 2014 [10].

## Conclusion

In this paper I attempted a brief summary of mental health in Fukushima after 2011. There is a very serious and complicated situation that would affect the local residents of the afflicted area. It is important to evaluate properly the mental conditions of people living in a situation where stable daily life was lost and to provide suitable psychiatric services to them. This is a new challenge.

## References

1. Yabe H, Suzuki Y, Mashiko H, Nakayama Y, Hisata M, Niwa S et al. Psychological distress after the Great East Japan Earthquake and Fukushima Daiichi Nuclear Power Plant accident: results of a mental health and lifestyle survey through the Fukushima Health Management Survey in FY2011 and FY2012. *Fukushima J Med Sci.* 2014; 60: 57-67.
2. Havenaar JM, Bromet EJ, Gluzman S. The 30 year mental health legacy of the Chernobyl disaster. *World Psychiatry.* 2016, 15: 181-182.
3. Fukushima Prefectural Government.
4. Nomura S, Gilmour S, Tsubokura M, Yoneoka D, Sugimoto A, Oikawa T et al. Mortality risk amongst nursing home residents evacuated after the Fukushima nuclear accident: a retrospective cohort study. *PLoS One.* 2013; 8: e60192.
5. Hayakawa M. Increase in disaster-related deaths: risks and social impacts of evacuation. *Ann ICRP.* 2016.
6. Hori A, Tsumuraya K, Kanamori R, Maeda M, Yabe H, Niwa S. Report from Minamisoma City: diversity and complexity of psychological distress in local residents after a nuclear power plant accident. *Seishin Shinkeigaku Zasshi.* 2014; 116: 212-218.
7. Minami Soma City Office.
8. Ozaki A, Shimada Y, Yamamoto K, Hori A, Sawano T, Morita T, et al. Death of the sole doctor at Takano Hospital 6 years after the Fukushima nuclear crisis-who is responsible for health care delivery in the Fukushima disaster zone? *QJM.* 2017.
9. Hori A, Hoshino H, Miura I, Hisamura M, Wada A, Itagaki S, et al. Psychiatric Outpatients After the 3.11 Complex Disaster in Fukushima, Japan. *Ann Glob Health.* 2016; 82: 798-805.
10. Ohto H, Maeda M, Yabe H, Yasumura S, Bromet EE. Suicide rates in the aftermath of the 2011 earthquake in Japan. *Lancet.* 2015; 385: 1727.