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Tohoku University Tohoku Medical Megabank Organization
Japan Agency for Medical Research and Development (AMED)

Depressive symptoms continue to be higher
in coastal areas than in inland areas 3 years after the Great
East Japan Earthquake

Tohoku University Tohoku Medical Megabank Organization has revealed that depressive symptoms, even in 2014, three years after the Great East Japan Earthquake, still continue to be higher in coastal areas than in inland areas of Miyagi Prefecture affected by the earthquake and consequent tsunami. About a quarter of residents on the Pacific coast of Miyagi Prefecture still suffer from depression, a slightly higher rate compared with those living in inland areas. These results are a third round of announcements of findings from a study from the Tohoku Medical Megabank Project Community-Based Cohort Study* by Tohoku University Tohoku Medical Megabank Organization (ToMMo)

In the current analyses, we found the following major results.

- (I) Similarly to the previous report, the participants living in the Pacific coast had higher risks of mental health problems such as depression. However, the differences in risks between the coastal and inland areas have been slightly decreased.
- (II) Influence of the earthquake disaster was closely related to withdrawal of hypertension treatment among the subjects living in coastal areas.
- (III) We found associations of disaster-caused changes in life environment and/or psychological problems with initiation of sleep medication.

(I) Mental health-related conditions

Previously, we reported that the residents in the coastal area had significantly higher risks of psychological distress (K6) and depressive symptoms (CES-D) than those in the inland area (Reference URL:

http://www.megabank.tohoku.ac.jp/english/timeline/20150901_01/).

Currently we added the records of the new participants in the fiscal year 2014 to the existing data set, and carried out further analyses of associations between locality of residence (coastal or inland) and mental health-related conditions, i.e., psychological distress, depressive symptoms, insomnia, and posttraumatic stress reaction (PTSR).

The analyses revealed that the differences in risks of all the mental health problems between the coastal and inland areas have been slightly decreased compared with the fiscal year 2013 (Since the participants in the fiscal year 2014 were not identical to those in the fiscal year 2013, it may be inappropriate to directly compare the results in the two fiscal years). However, similarly to the previous report, the participants living in the coastal area had significantly higher risks of depressive symptoms, insomnia, and PTSR. The findings indicate that further mental health support would be needed, especially for the residents in the coastal area.

(II) Withdrawing from chronic disease treatment

After the great earthquake, higher degrees of psychological distress and/or changes in living environment have been thought to be associated with withdrawal of chronic disease treatment.

The current analyses has revealed that the participants living in the coastal area, which had been severely inundated by the tsunami, tended to withdraw medical treatment for hypertension. On the other hand, the results also indicated that the risks of withdrawing treatments for the other chronic diseases were not necessarily higher, which may be in part because medical fees were partially waived for those in severely devastated areas.

Furthermore, 14% of participants, about 3,000 people, who felt the need for dental treatment did not actually visit a dentist in the past year.

Our findings highlight the importance of detailed supports to prevent treatment interruption and lack of treatment in post-disaster settings.

(III) Insomnia

Based on the data of the participants who had both insomnia and depressive symptoms according to the questionnaires, we examined factors associated with initiation of sleep medication, such as mental health and life environments. As a result, it was suggested that the participants with disaster-caused changes in life environment and/or some psychological problems tended to initiate sleep medication.

Our results suggested that it is important to properly carry out medical treatments and support focusing on the disaster-caused changes in life environment and/or the psychological problems, along with coping with insomnia itself, in the medical sites and the associated health systems.

This report presents the findings from the Tohoku Medical Megabank Project Community-Based Cohort Study, conducted in 21 cities and towns in fiscal year 2013-2014. The findings are from the questionnaire and examinations of blood and urine samples of a total of 24,703 residents (some 7,000 in fiscal year 2013, some 17,000 in fiscal year 2014); who were recruited at specific health checkup sites established by municipalities in Miyagi Prefecture. However, the number of residents for each study item is different due to the partial loss of data, etc.

Way Forward

ToMMo will assemble the findings of the participants who have taken part in the study from 2015 onwards, and carry out analyses of the trends, and where necessary, suggest action.

Regarding the characteristics of those people suffering from major problems, we plan to examine how the problems differ among the different demographic groups, so that we can provide useful information that would benefit the entire community.

Explanation of the Terms

*: Cohort study is a study in which groups of people with certain characteristics are followed over time to determine the relationship between diseases and factors such as the environment, lifestyle and genetic makeup.

Reference information

The number of participants is increased from the previous study.

- First round of announcement of findings of the study: February 27, 2014
The first round of aggregate findings from the community resident cohort study in the first year-27% of study participants showed depressive tendencies, 5% showed signs of PTSD- [Press Release]
http://www.megabank.tohoku.ac.jp/english/timeline/20140227_01/

- Second round of announcement of findings of the study: September 1, 2015
Psychological Consequences Remain Profound Among Coastal Communities Devastated by the Great East Japan Earthquake [Press Release]
http://www.megabank.tohoku.ac.jp/english/timeline/20150901_01/

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