INTRODUCTION: Natural disasters are known to have a chronic effect on the functioning of older persons. However, no study has yet clarified the impact that natural disaster had on a long-term increase of the disabled elderly. The aim of the present study was to examine the hypothesis that the disability prevalence would have increased in the areas severely affected by the Great East Japan Earthquake and tsunami on 11 March 2011, relative to other areas of Japan.

METHODS: Longitudinal analysis using public statistics data from the Ministry of Health, Labour and Welfare in Japan. The analysis
included 1,549 municipalities covered by the Long-term Care Insurance (LTCI) system. ‘Disaster areas’ were defined as three prefectures (Iwate, Miyagi, Fukushima). The outcome measure was the number of aged people (≥65 years) with LTCI disability certification. Rates of change in disability prevalence from February 2011 to February 2012 were used as the primary outcome variable, and were compared by analysis of covariance between ‘Coastal disaster areas’, ‘Inland disaster areas’ and ‘Non-disaster areas’.

RESULTS: Regarding disability prevalence at all levels, the mean value of the increase rate in Coastal disaster areas (7.1%) was higher than in Inland disaster areas (3.7%) and Non-disaster areas (2.8%) (P < 0.001). When stratified by the increase in the level of disability, the increase in mild disability in Coastal disaster areas (12.6%) was higher than in Inland disaster areas (4.8%) and Non-disaster areas (3.3%) (P < 0.001). For the increase in moderate to severe disability, although that in Coastal disaster areas was higher than Non-disaster areas and the Inland disaster areas, the difference was not significant (P = 0.190).

CONCLUSIONS: The areas that were severely affected by the earthquake and tsunami had a significantly higher increase in disability prevalence during the one year after the earthquake disaster than other areas.