H Inaba \(^1\); K Takada \(^2\); H Kurosaki \(^2\); Y Wato \(^3\); A Yamashita \(^2\)

\(^1\)Kanazawa University Graduate School of Medicine, Department of Circulatory Emergency and Emergency Medical Science, Kanazawa, Japan, \(^2\)Kanazawa University Graduate School of Medicine, Kanazawa, Japan, \(^3\)Kanazawa Medical University, Uchinada, Japan

Introduction:
Disaster may psychologically affect the social behaviour of citizens. However, the impact of great disaster on basic life support activities of laypersons is unknown. The East Japan Earthquake swept the Pacific coast of Japanese mainland on Friday 11 March 2011, and caused nuclear accidents. This study aimed to investigate whether and how this disaster influenced bystander cardiopulmonary resuscitation (BCPR) in family- and friends-witnessed out-of-hospital cardiac arrests (OHCAs).

Methods:
From nationwide OHCA registry, we extracted 74,684 family and friend bystander-witnessed OHCA cases without prehospital physician-performed advance life support, which were recorded between 11 March, 2010 and 10 March, 2013. The alterations in BCPR rate after the disaster in Tsunami-affected prefectures and others were analysed by univariate and multivariable analyses.

Results:
The BCPR rate in Tsunami-affected prefecture decreased in a biphasic manner during 20-weeks period after the onset of disaster in disaster year of 2011, compared to pre-disaster 2010 and post-disaster 2012: 42.5\% (375/882) in 2011 and 48.2\% (754/1565) in 2010&2012. This decrease in BCPR rate in Tsunami-affected prefectures was more prominent in the subgroup receiving dispatcher-assisted CPR instruction (Figure 1). A lower rate of dispatcher-assisted CPR instruction (49.1\% vs 53.4\%) and higher proportion of presumed cardiac aetiology (62.8\% vs 56.0\%) were also observed during the same period of 2011 in Tsunami-affected prefectures. One-month survival rate of the family- and friends-witnessed subgroup receiving dispatcher-assisted CPR was 8.2\% in 2011 and 10.2\% in 2010/2012. In Tsunami-unaffected prefectures, the changes in BCPR rate and outcome of family- and friends-witnessed OHCA were extremely small.

Conclusion:
A great disaster affects the family- and friend-performance of BCPR by diminishing the willingness of family and friend bystanders to follow the instruction provided by dispatchers.

References:
Changes in total B CPR rate in family- and friends-witnessed OHCA cases with dispatcher-assisted instruction during 20-weak period after the day of disaster during the three years

Figure 1