

Human Casualties in Earthquakes and Their Reduction Strategies (2) For Further Development of Evaluation Equation

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1. For Further Research In the previous paper we attempted to collect existing human casualty equations based on published articles in ordinal earthquake engineering journals and made clear that the proposed equations concern either during the ground shaking or the following immediate situation. It is, however, certain that the casualties occur even in a longer time range after seismic shaking ceases. We have to expand our research in two different directions. One is to expand the time span as good enough to cover all kinds of diseases by a single quake, and examine those for the 1995 Kobe and following significant events. The other is to expand the time range for one quake good enough to cover diseases which might occur even over years. Covered areas by earthquake engineering journals are far insufficient to retrieve longer time range to trace such kinds of diseases. Thus, we should expand our handling over the traditional approach to the medical field, assisted by the Japan's Medical Database. 2. Introducing Ichushi Database

The Ichushi DB, the most known Medical Database in Japanese, has been developed in the similar manner as the preceding PubMed, the Database of National Inst. of Health, USA and is easier for us to handle. Retrieval was made in special marks to such medical diseases. Covered year range was again earlier than the 1995 Kobe quake, to make clear the importance of the Ichushi DB. The total number of articles retrieved from the beginning of Meiji era until 1995 was 60 and compared with those from the proper earthquake engineering journals. 3. Comparison with articles from Ichushi Database

The most prominent characteristics from two different DBs are essentially two. One is the covered time length. Articles from the engineering journals concentrates time zones mostly in acute stage. On the other hand, most articles retrieved from the Ichushi DB deal with quake-originated short and long term diseases as internal medicine, psychic trauma and so on; that is, the time term is far longer in medical field than that in the ordinary earthquake engineering, which teaches us both are complementary.

References:

- 1) Ohta, Shigaki and Miyano, Human Casualties in Earthquakes and Their Reduction Strategies (1), Annual Meeting of Japan's Seismological Society, 2017.
- 2) Ichushi DB, Medical Database in Japanese, The Japan Medical Abstracts Society.
- 3) PubMed DB, Nat. Inst. Health, USA.

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