

FACTORS AFFECTING SURVIVAL IN TSUNAMI EVACUATION

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ABSTRACT

During disasters, every second can be decisive but most people are unable to think clearly, and their decision-making is often illogical and irrational, or at best sub-optimal. In Japan, after the Great East Japan Earthquake (GEJE) and tsunami in 2011, survival was largely determined by timely evacuation. Evacuation procedures are highly developed in Japan and people are drilled in evacuation from childhood.

This paper reports recent research at Kyoto University to document evacuation after the 2011 event and to understand evacuation behaviour and their level of preparedness. One of the aspects studied is the difference between what people say they will do in a disaster and what they actually do in a real event. For example, in Japan many respondents said that they would run to a safe place, but in fact many people went home, often into danger, to seek and care for family members (Murakami and Umezu, 2011).

INTRODUCTION

Many factors have influence on people behaviour in a disaster, either at the time or during recovery process: age and gender, marital status, children, education, social networks, native to area or not, disaster experience, awareness of hazard and preparedness. All these affect the level of risk and the probability of casualty. There is evidence from previous disasters, notably the 2004 Indian Ocean tsunami, that foreign visitors have much greater difficulty than nationals in evacuating in time. There is also evidence that more women die than men, for example in the 1991 Bangladesh cyclone, the 1995 Hanshin-Awaji Earthquake, the 2005 Kashmir Pakistan earthquake and the 2009 L'Aquila earthquake.

In Japan, after Tohoku earthquake in 2011, the majority of deaths were caused by a tsunami that was much larger than had been anticipated and prepared for. There is evidence that the vast majority of nationals evacuated successfully but that many evacuation centres were overwhelmed by the unprecedented size of the