
Drowning mortality in the Asian Tsunami and correlates of survival

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Introduction

On the morning of December 26th, 2004, an undersea earthquake occurred 30 km off the western coast of northern Sumatra, Indonesia. It registered a magnitude of 9.2 on the modified Richter scale and triggered tsunami waves up to 30 meters high that inundated coastlines of countries bordering the Indian Ocean, and killed more than 225,000 people in 11 countries. In Indonesia, the closest country to the fault line, the tsunami caused an estimated 140,000 deaths in the northern areas of Sumatra, Indonesia.

Methods

An epidemiological study was conducted in January and February 2006, 13 months after the tsunami, using a retrospective cohort design. The cohort was composed of survivors living in temporary housing near where their pre-tsunami household had been in two areas of northern Sumatra: Banda Aceh, and Aceh Besar. The survivors provided information on their households at the time of the tsunami. A crude analysis was done looking at mortality and the odds ratio for death by distance from the beach. Statistically significant factors were included in a logistic regression model to control for confounding.

Results

The results show a positive association between survival and a number of factors: age, sex, location at exposure, height of water experienced, distance from the shore and swimming ability all having significant associations. Details will be presented at WCDP.

Conclusions

Despite the cataclysmic nature of the tsunami it was survivable. Mortality was highest in the oldest and youngest age groups, in those closest to the beach, in those who were inside a building, and in females, compared to males. The factor associated with the highest odds-ratio for survival was the ability to swim.

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