

Abstract citation ID: ckae144.1448

**Gender Differences in Years of Life Lost resulting from the 2015 Gorkha Earthquake in Nepal**

Margo Tonnelier

*M Tonnelier<sup>1</sup>, M Bhandari<sup>1</sup>, D Delforge<sup>1</sup>, M Moitinho de Almeida<sup>1</sup>, J van Loenhout<sup>1,2</sup>, B Devleeschauwer<sup>2,3</sup>, J Haagsma<sup>4</sup>, N Speybroeck<sup>1</sup>, P Charalampous<sup>1,4</sup>*<sup>1</sup>Institut de Recherche Santé Société, Université Catholique de Louvain, Woluwé-Saint-Lambert, Belgium<sup>2</sup>Department of Epidemiology and Public Health, Sciensano, Brussels, Belgium<sup>3</sup>Department of Translational Physiology, Infectiology and Public Health, Ghent University, Merelbeke, Belgium<sup>4</sup>Department of Public Health, Erasmus MC University Medical Center, Rotterdam, Netherlands

Contact: margo.tonnelier@uclouvain.be

**Background:** Nepal has a history of regular natural hazards, including significant earthquakes and floods. Previous studies have shown that females, particularly younger females, are more likely to die due to disasters compared to males. This study aimed to explore gender differences in mortality - measured in Years of Life Lost (YLL) - caused by the 2015 Gorkha earthquake across 41 districts of Nepal.

**Methods:** Mortality counts were derived from the Nepal Police Report. YLL was estimated by multiplying mortality counts (stratified by age, gender, and district) by age-conditional life expectancy from the 2019 Global Burden of Disease reference life table. Both absolute numbers and rates of YLL per 100,000 population were calculated. YLL per deaths, stratified by age-gender-and-location, were estimated and compared. Male-to-female YLL rate ratios were estimated as well, and compared across districts.

**Results:** The 2015 Gorkha earthquake resulted in 8,950 deaths (females: 56.1% versus males: 43.9%), accounting for 526,617 YLL. Males had a slightly higher number of YLL per death (59.2) compared to females (58.5); this is mainly due to the different number of deaths between males and females. YLL per deaths ranged from 65.4 (Rautahat district) to 0 (in several districts) among males and, from 65.3 (Rautahat district) to 0 (in several districts) among females. The YLL rate per 100,000 population was higher for females (3,158 per 100,000) than for males (2,575 per 100,000). Approximately 40% of the districts had male-to-female YLL rate ratios of less than one, which can be partly explained by the gender distribution of the population at risk of dying due to earthquake.

**Conclusions:** The study found relatively higher YLL per death for males and higher YLL rates for females. This underscores the necessity to further investigate the factors that contribute to fatalities from earthquakes, especially in lower middle income countries such as Nepal.

**Key messages:**

- Gender disparities in mortality following the 2015 Gorkha earthquake in Nepal were addressed using Years of Life Lost (YLLs); males had higher YLL per death, while females had higher YLL rates.
- Exploring the factors that contribute to earthquake-related fatalities should be a priority for disaster mitigation strategies.