

GEOGRAPHICAL VARIATIONS IN ALL-CAUSE MORTALITY IN THAILAND

Patarapan Odton¹, Chamnein Choonpradub² and Kanitta Bundhamcharoen¹

¹International Health Policy Program, Ministry of Public Health, Nonthaburi;

²Department of Mathematics and Computer Science, Faculty of Science and Technology, Prince of Songkla University, Pattani, Thailand

Abstract. In this study, we examined age-specific death rates among men and women from various districts in Thailand using mortality data from 1999 to 2001. A Poisson generalized linear model was used for analysis. To adjust for large variations in resident populations among districts, the 926 districts in Thailand were reduced to 235 “superdistricts” based on a minimum population of 200,000. The Poisson model incorporating additive factors for age-group and superdistrict generally provided a good fit for these data. The fitted mortality rates among the 235 superdistricts were compared with the overall means for each gender (637 per 100,000 for males and 415 per 100,000 for females). Thematic maps were created with three different colors signifying each superdistrict’s mortality rate compared to the mean. Northeastern Thailand had higher than average mortality for both males and females. Lower than average death rates were found in southern Thailand with the exception of Phuket and Narathiwat, and in Bangkok, except for females in the superdistrict containing Nong Chok and Lat Krabang Districts. This modeling and mapping approach is a useful preliminary tool enabling public health planners to determine statistically valid geographical variations in mortality and to develop effective interventions.

Key words: all-cause mortality, Poisson regression, Thailand

Correspondence: Chamnein Choonpradub,
Department of Mathematics and Computer
Science, Faculty of Science and Technology,
Prince of Songkla University, Pattani 94000,
Thailand.

Tel: +66 (0) 7331 2179; Fax: +66 (0) 7331 2179

E-mail: cchamnein@bunga.pn.psu.ac.th