Gender, socioeconomic status and adult mortality in New Zealand: 1981-2001

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Purpose:

This study examines the relationship between gender, socioeconomic status (SES) and adult mortality (general and cause specific) in New Zealand, using the New Zealand Census-Mortality Study (NZCMS) by addressing the following specific issues:

1. What is the magnitude of gender inequality in mortality among adults in New Zealand?
2. Does the association between gender and mortality vary depending on the socioeconomic indicator/s? If yes, what is the contribution of socio-economic factors to gender inequality in mortality?
3. What is the contribution of causes of death to gender inequality in mortality?
4. Does the relationship between gender, SES and mortality change over time?

Methods:

The NZCMS comprise of five cohorts formed by anonymous and probabilistic linkage of five censuses to three years of mortality records. The five cohorts were 1981-84, 1986-89, 1991-94, 1996-99, and 2001-2004. Detailed methods for linkages have been described elsewhere [1, 2]. The NZCMS is conducted collaboratively between Statistics New Zealand, the Ministry of Health and the Wellington School of Medicine and Health Sciences.

All individuals aged 25-77 at follow-up (either three years after Census or at deaths within those three years) were analysed. The proportion of mortality records linked to

a census record varied by sex, age, ethnicity, and neighbourhood deprivation. To allow for varying linkage success by these demographic strata, weights were assigned to the linked census-mortality record to make them representative of all eligible deaths. For example, if 20 out of 30 deaths for Māori (indigenous people of New Zealand) males aged 65-74 living in moderately deprived neighbourhoods were linked to a census record, then each of these 20 linked records was assigned a weight of 1.5 (ie, 30/20). Elsewhere, we have shown these linkage weights to be valid [3, 4].

The relative and slope index of inequality (RII and SII, respectively) that take account of the population distribution by SES measures, were used to calculate gender inequality in relative and absolute terms, respectively, in each cohort. To measure the contribution of socioeconomic factors to disparities between males and females, we used Poisson regression.

The socioeconomic variables represent differential access to resources which may in turn affect mortality. Most studies on SES differentials in mortality among males and females have focussed on a single measure of SES such as income, education, or home ownership. But it has been recommended that studies focussing on socioeconomic inequalities in mortality among males and females should focus on a set of measures rather than a single indicator of socioeconomic status as no single measure proves comprehensive enough to portray the entire picture of socioeconomic position, particularly among the females. We use comprehensive set of socioeconomic indicators (education, income, car access, housing tenure, neighourhood deprivation) in our study.

Results and conclusions:

This study shows that levels and patterns of adult age mortality vary considerably by gender and that socioeconomic factors play a sizeable role in inequalities in mortality

by gender. Compared to females, males have higher mortality rates, however the female advantage was greater for certain causes of death. Furthermore the overall female advantage in mortality decreased between 1981-84 and 2001-2004. The decrease in advantage for female was particularly marked for decline of male mortality due to cardiovascular causes of death. The association of the SES indicators and mortality vary depending on the gender of the respondent. Unlike many previous studies on SES differentials in mortality by gender, our results indicate that individual level measures of SES (e.g., education and incomer) are more closely related to the mortality in women. This study also brings out the dynamic nature of the association between gender, SES and mortality in the New Zealand setting.

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