

Trends in Cancer Survival by Ethnic and Socioeconomic Group, New Zealand 1991–2004

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Abstract

Background

This thesis aimed to understand trends and inequalities in cancer survival using relative survival and excess mortality rate analyses. The three research questions were: i) do non-Māori and higher socioeconomic groups have better survival compared to Māori and lower socioeconomic groups diagnosed with cancer respectively?; ii) is cancer survival improving over time by ethnic and socioeconomic group?; and iii) where they exist, are ethnic and socioeconomic differences in cancer survival narrowing or widening over time?

Data and methods

Anonymised individual unit records for people diagnosed with cancer 1991-2004, followed up to 31 December 2006, were extracted from linked Census, cancer and mortality data. Cancers were categorised into 21 sites. Ethnicity and equivalised household income categorised were assigned to each unit record using socio-demographic data recorded on the Census. Linked Census and mortality data were used to construct comparable survival and mortality data by ethnicity and income for people who died for reasons other than cancer. Five-year relative survival estimates by ethnic and income group were estimated as well as excess mortality rates censored at 5 years following a cancer diagnosis. The main effect measures were the relative survival ratio difference (RSRD) and the excess mortality rate ratio (EMRR). Pooled EMRR estimates were also calculate to assess the weighted average across all cancer sites.

Results

Pooled across all cancers and averaged over the study period, Māori had 29% greater excess mortality following a cancer diagnosis compared to non-Māori, with an ethnic EMRR of 1.29 (95% CI 1.24, 1.34). The pooled income EMRR, averaged over time, across all cancer sites was 1.12 (95% CI 1.08, 1.15), a 12% greater excess mortality following a cancer diagnosis on average for the lowest-income group compared to the highest-income group.

Pooled across all cancers, excess mortality following a cancer diagnosis reduced by 26% per decade, or a 3% annual reduction in excess mortality, comparing people diagnosed in 2001 to those diagnosed in 1991, with a calendar period EMRR of 0.74 (95% CI 0.72, 0.76).

Pooled across all cancers, the ratio change per decade in the Māori compared to non-Maori EMRR was 1.04 (95% CI 0.94, 1.14); suggesting there was little evidence of either widening or narrowing relative gaps in excess mortality by ethnic group over time. Pooled across all cancers, the ratio change per decade in the lowest- compared to the highest-income EMRR was 1.09 (95% CI 1.01, 1.17), suggesting a 9% relative increase per decade in the EMRR comparing the lowest- to highest-income groups.

Conclusions

Ethnic inequalities and, to a lesser extent, income inequalities, in cancer survival were reported for the majority of cancer sites. These inequalities were likely to stem from differences between groups in terms of quality and timing of treatment, host factors such as co-morbidities, and possibly differences between groups in stage at diagnosis and tumour biology. Survival improved over time for all cancer sites. These trends are likely to be explained by earlier diagnosis for some cancers through improvements in cancer detection and screening and/or improvements in treatment.

On average pooled across all cancer sites, there was evidence of faster reductions in the excess mortality rate among high-income people. There was little evidence of changing ethnic differences in excess mortality over time. Differential rates over time between socioeconomic groups in cancer detection, screening, diagnosis and treatment may explain trends in socioeconomic inequalities in cancer survival.