

## Abstract

**Objective:** In many developed countries, socioeconomic status (SES) is associated with cancer incidence and survival and SES inequity is a major risk of cancer and the poor disease outcome. The major objective of the present study is to examine the association between neighborhood deprivation and the risk of incidence, mortality and survival from all and major cancers in the Japanese population.

**Methods:** In total, 86,112 subjects (40,883 men, and 45,229 women) were followed through the end of 2009 in the Japan Public Health Center-based Prospective Study (JPHC Study). A total of 10,416 incident cases and 5,510 deaths from cancer were identified among 1,348,437 person-years of follow-up (mean follow-up: 15.7 years). The Japanese deprivation index was used to assess neighborhood deprivation. Hazard ratios (HRs) and 95% confidence intervals (CIs) were calculated with Cox regression analysis controlling for potential confounding factors.

**Results:** Overall we found no associations between neighborhood deprivation index and the incidence of total and major cancers, although for some cancer risks and deaths we found positive or inverse associations with a higher deprivation index, such as a decreased risk of colorectal cancer incidence in both sexes and increased risk of liver cancer incidence and deaths in women. No significant associations were observed for cancer survival.

**Conclusion:** Although some positive or inverse association was detected for specific sites, the neighborhood deprivation index has no substantial overall impact on the risk of incidence, death due to, or survival from major cancer in Japanese men and women.

**Keywords:** Socioeconomic status, deprivation index, cancer, survival analysis, Japan Public Health Center-based Prospective Study (JPHC Study)