

# The impact of socioeconomic status on arthritis and osteoporosis

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Conflictos de interés: Los autores declaran no tener conflictos de interés alguno.

## Abstract

**Background:** Low socioeconomic status has been shown to be associated with both osteoarthritis and rheumatoid arthritis, impacting on outcomes and even the development of arthritis. However, the association with osteoporosis has been less clear. The reasons for the association may be linked to socioeconomic status through educational aspects, income, employment type and even area of residence. **Purpose:** The purpose of this study was to use a monthly surveillance and monitoring system to examine the prevalence of self-reported osteoarthritis, rheumatoid arthritis and osteoporosis over time and the association with measures of socioeconomic status.

**Study/Intervention Design:** A Computer Assisted Telephone Interview (CATI) is used to conduct surveys with randomly selected participants.

**Methods:** The South Australian Monitoring and Surveillance System is a continuous disease and risk factor surveillance system which commenced in South Australia, Australia in 2002. Each month 600 telephone interviews are conducted with participants of all ages randomly selected initially from the Electronic White Pages and now from the Integrated Public Number Database. Adults aged 16 years and over are asked whether they had been told by a doctor that they had arthritis and if the response was "yes" they were further asked to define which type (osteoarthritis (OA) or rheumatoid arthritis (RA)). Participants were also asked if they had ever been told by a doctor that they had osteoporosis. Demographic variables (age, sex) as well as education level, income, work status are also asked and the Socioeconomic Indicators For Areas (SEIFA) Index of relative socio-economic disadvantage, developed by the Australian Bureau of Statistics (ABS) based on Census data, is determined from participant's residential postcode. All data are weighted by age, sex, probability of selection in the household to the relevant Australian Census or Estimated Residential Population data provided by the ABS. Data for those aged

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18 years and over from 2003 to 2014 are used in this study. Results: Overall, n=73972 respondents aged 18 years and over have participated in the survey over between 2003 and 2014. Of these 11.9% (95% CI 11.7-12.1) self-reported that they had been told by a doctor that they have OA and 2.9% (95% CI 2.8-3.1) RA. With regard to osteoporosis, 4.5% (95% CI 4.3-4.6) reported that they had this condition. Over time there has been a significant increase in the prevalence of OA (from 10.3% in 2003 to 13.9% in 2014; linear by linear association  $\chi^2=31.7$ ,  $p<0.001$ ), a decrease in the prevalence of RA (3.0% in 2003 to 2.3% in 2014; linear by linear association  $\chi^2=5.4$ ,  $p=0.02$ ). There has been no significant change in the prevalence of osteoporosis (3.8% in 2003 to 4.5% in 2014). Logistic regression analysis demonstrates that those in the two least disadvantaged SEIFA quintiles were less likely to report OA in 2003 and 2014 when adjusted for age and sex, while a higher level of education was associated with lower prevalence of OA and RA, and lower income with a higher prevalence of OA, RA and osteoporosis. In terms of work status, those who were unable to work were more likely to report OA, RA and osteoporosis.

Conclusion: Ongoing surveillance provides the ability to examine health issues over a period of time. Over a 12 year period, measures of socioeconomic status have consistently been associated with musculoskeletal conditions, highlighting an ongoing need to target interventions and information to these groups.