

AUSTRALIAN AND NEW ZEALAND JOURNAL OF PUBLIC HEALTH

Using the *Australian and
New Zealand Journal of
Public Health* as a research
and teaching resource

**Volume 2: Research that accesses
existing data sets**

Editor: Amy Nisselle



The e-book from PHAA

Survey research provides the foundation data for much of public health practice. This selection of key articles on survey research is intended to be useful to research methods teachers and researchers.

This e-book includes a selection of papers from *ANZJPH*. It covers a range of survey research styles and types. Many other examples are to be found in *ANZJPH*.

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Several further e-books are planned, and suggestions for additional topics are welcome.

Foreword

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It is always worth reflecting on how researchers can design studies that utilise existing data sets rather than collecting new data. Not all research requires new data to be collected. In the same way that museums are turning their attention to re-curating collections (for example, Museums Australia's 2010 conference "Interesting Times: New roles for collections") researchers can also repurpose or 'mine' existing data sets to address novel research questions. The aim of this e-book is to assist researchers, teachers and students of public health by collecting papers from past issues of ANZJPH that exemplify this methodology.

The book compiles 32 papers into six sections and begins with papers that illustrate the methodological issues of using existing data, including record linkage. There is a section on infectious diseases, where surveillance data has historically underpinned key public health initiatives and a section focused on indigenous health, where the use of existing data serves to protect people who may see themselves as over-researched. The last two sections contain papers that illustrate how existing data sets can be combined and extended. The papers were selected as they represent research that accessed existing data but the papers cross many disciplines and populations, different types of data and the findings have varied implications, including recommendations for methodology, public health and policy.

The development of methodology in using existing data sets is prefaced with an editorial about the balance to be struck between 'publication redundancy' – where authors data 'dredge' – and the re-analysis of data sets to answer novel research questions. The papers in this section present methods for linking data from multiple sources and/or organisations, including ensuring rigour in sampling, determining inaccuracies in national statistics for overweight and obesity via comparisons of existing data sets and how record linkage was used to reveal under-reporting of Western Australian Indigenous mortality. Two papers describe how combining existing datasets helped determine population norms for quality of life measures and how data sets could be combined and complemented with new data to determine the effectiveness of a housing program.

The technique of record linkage initially raised concerns about the confidentiality of records but a balance has been found to allow public health researchers to conduct important public health research. Four papers are included in this book, covering topics as diverse as suicide rates, Indigenous heart disease and health equality in Australia and New Zealand. Record linkage of governmental statistics and coroner's data revealed underestimates of suicide rates in Australia while linking hospital records with national health records in New Zealand helped determine the status

of coronary heart disease in Māori. Record linkage was also used to map amenable mortality in New Zealand from 1981 to 2004 and to link state health records and a previous research study, revealing that recording of Indigenous status was increasingly reliable in Western Australia.

Methods that access existing datasets are common throughout the literature on infectious diseases. Six papers are included in this book, beginning with an editorial that highlights the importance of using existing surveillance mechanisms for research purposes. Existing serology data were analysed to map the prevalence of Ross River Virus in South Australia while a review of hospital records in New Zealand provided insights into early identification of influenza outbreaks. A literature review confirmed the relationship between pet-bird ownership and respiratory illness and a novel study design that mapped vaccine ordering patterns during a media campaign around public awareness of free vaccination revealed the success of the campaign. Also included in this book is a paper where the researchers reconciled medical notes for regional Western Australian prisoners, revealing a higher incidence of infectious disease amongst Indigenous inmates was tempered by effective public health interventions.

Papers on Indigenous health are included throughout this book, as well as the four papers included in this separate section. An examination of hospital records mapped the seroprevalence and prevention strategies for Hepatitis B in Indigenous women giving birth in the Northern Territory and the different rates of interpersonal violence Indigenous and non-Indigenous Australian communities. A reconciliation of school dental data and geography of fluoride in water supplies confirmed the benefits of fluoridation for Indigenous communities. Accessing death records of Western Australians for over 100 years also allowed an historical perspective on Indigenous mortality.

Four papers are included in this book to exemplify how existing data sets can be combined to provide new insights. Geo-coding existing data revealed patterns on the incidence of melanoma in South Australia and access to termination of pregnancy services in New Zealand. Combining data from several school-based surveys of health and fitness helped map the extent of overweight and obesity in Australian children and trends in children's physical activity over a 16 year period.

The last section of this book includes six papers that extended existing data sets, either through repurposing of data to answer novel research questions or by complementing the data set with new data. For example, analysis of the 1993 OECD health database to examine health care and expenditure in Australia compared with other member countries. Trends in medication prescription, dispensing and errors in Australia were evaluated by combining national data sets and complementing data logged by the Victorian Poisons Information Centre with follow-up survey data. On a population-based level, trends in the Australian consumer price index were determined over nearly two decades while a comparison

of Australian and New Zealand census data with WHO data helped map the extent of Pacific Island health worker brain drain. The last paper discusses how health surveillance data routinely collected by the Australian military can be used to identify trends in health and risk factors.

This e-book is intended to be a repository of examples of high-quality public health research that accesses existing data sets to answer novel research questions that can be used by teachers and students in a variety of public health disciplines.

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Methodological issues

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The Australian and New Zealand Journal of Public Health is the Journal of the Public Health Association of Australia and is published six times a year, in February, April, June, August, October and December. Its contents are subject to normal refereeing processes. Finished discussions of research projects are the staple diet of the Journal, but there is space for reviews, views and historical pieces from time to time.

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