A Life Course Approach To Measuring Socioeconomic Position In Population Surveillance And Its Role In Determining Health Status

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THESIS SUMMARY

Measuring socioeconomic position (SEP) in population chronic disease and risk factor surveillance systems is essential for monitoring changes in socioeconomic inequities in health over time. A life course approach in epidemiology considers the long-term effects of physical and social exposures during gestation, childhood, adolescence, and later adult life on health. Previous studies provide evidence that socioeconomic factors at different stages of the life course influence current health status. Measures of SEP during early life to supplement existing indicators of current SEP are required to more adequately explain the contribution of socioeconomic factors to health status and monitor health inequities.

The aim of this thesis was to examine how a life course perspective could enhance the monitoring of SEP in chronic disease and risk factor surveillance systems. The thesis reviewed indicators of early life SEP used in previous research, determined indicators of early life SEP that may be useful in South Australian surveillance systems, and examined the association of SEP over the life course and self-rated health in adulthood across different population groups to demonstrate that inclusion of indicators of early life SEP in surveillance systems could allow health inequities to be monitored among socially mobile and stable groups.

A variety of indicators, such as parents' education level and occupation, and financial circumstances and living conditions during childhood, have been used in different study designs in many countries. Indicators of early life SEP used to monitor trends in the health and SEP of populations over time, and to analyse long-term effects of policies on the changing health of populations, need to be feasible to measure retrospectively, and relevant to the historical, geographical and sociocultural context in which the surveillance system is operating.

Retrospective recall of various indicators of early life SEP was examined in a telephone survey of a representative South Australian sample of adults. The highest proportions of missing data were observed for maternal grandfather's occupation, and mother's and father's highest education level. Family structure, housing tenure, and family financial situation when the respondent was aged ten, and mother and father's main occupation had lower item non-response. Respondents with missing data on early life SEP indicators were disadvantaged in terms of current SEP compared to those who provided this information. The differential response to early life SEP questions according to

current circumstances has implications for chronic disease surveillance examining the life course impact of socioeconomic disadvantage.

While face-to-face surveys are considered the gold standard of interviewing techniques, computer-assisted telephone interviewing is often preferred for cost and convenience. Recall of father's and mother's highest education level in the telephone survey was compared to that obtained in a face-to-face interview survey. The proportion of respondents who provided information about their father's and mother's highest education level was significantly higher in the face-to-face interview than in the telephone interview. Survey mode, however, did not influence the finding that respondents with missing data for parents' education were more likely to be socioeconomically disadvantaged. Alternative indicators of early life SEP, such as material and financial circumstances, are likely to be more appropriate than parents' education for life course analyses of health inequities using surveillance data.

Questions about family financial situation and housing tenure during childhood and adulthood asked in the cross-sectional telephone survey were used to examine the association of SEP over the life course with self-rated health in adulthood. Disadvantaged SEP during both childhood and adulthood and upward social mobility in financial situation were associated with a reduced prevalence of excellent or very good health, although this relationship varied across gender, rurality, and country of birth groups.

Trend data from a chronic disease and risk factor surveillance system indicated that socioeconomic disadvantage in adulthood was associated with poorer self-rated health. The surveillance system, however, does not currently contain any measures of early life SEP. Overlaying the social mobility variables on the surveillance data indicated how inequities in health could be differentiated in greater detail if early life SEP was measured in addition to current SEP. Inclusion of life course SEP measures in surveillance will enable monitoring of health inequities trends among socially mobile and stable groups.

Life course measures are an innovative way to supplement other SEP indicators in surveillance systems. Considerable information can be gained with the addition of a few questions. This will provide further insight into the determinants of health and illness and enable improved monitoring of the effects of policies and interventions on health inequities and intergenerational disadvantage.

DECLARATION

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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Chittleborough CR, Baum F, Taylor AW, Hiller JE. A life course approach to measuring socioeconomic position in population health surveillance systems. *J Epidemiol Community Health* 2006; 60:981-92.

Chittleborough CR, Baum F, Taylor AW, Hiller JE. Missing data on retrospective recall of early life socioeconomic position in surveillance systems: an additional disadvantage. *Public Health* 2008; 122:1152-66.

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2. Chittleborough CR, Baum F, Taylor AW, Hiller JE. Missing data on retrospective recall of early life socioeconomic position in surveillance systems: an additional disadvantage. *Public Health* 2008; 122:1152-66. [See Chapter 4 and Appendix 4]

3. Chittleborough CR, Taylor AW, Baum FE, Hiller JE. Non-response to a life course socioeconomic position indicator in surveillance: comparison of telephone and face-to-face modes. *BMC Med Res Methodol* 2008; 8:54. [See Chapter 5]

4. Chittleborough CR, Taylor AW, Baum FE, Hiller JE. Monitoring inequities in self-rated health over the life course in population surveillance systems. *Am J Public Health* February 5, 2009, 10.2105/AJPH.2008.141713. [See Chapter 6]

CONFERENCE PRESENTATIONS ARISING FROM THIS THESIS

1. Chittleborough C, Hiller J, Baum F, Taylor A. An examination of the value of adopting a life course approach to measuring socioeconomic position in population surveillance systems. *Public Health Association of Australia (SA) Conference 'Public Health Futures'*, Adelaide, Australia, 9 October 2004.

2. Chittleborough C, Hiller J, Baum F, Taylor A. An examination of the value of adopting a life course approach to measuring socioeconomic position and health in population surveillance systems. *13th Annual Meeting of the Australasian Epidemiological Association,* Adelaide, Australia, 11-12 October 2004.

3. Chittleborough C, Hiller J, Baum F, Taylor A. Measuring early life socioeconomic position in South Australian population health surveillance systems. *Public Health Association of Australia (SA) Conference 'Public Health in the Community'*, Adelaide, Australia, 22 October 2005.

4. Chittleborough C, Hiller J, Baum F, Taylor A. Missing early life socioeconomic position information in surveillance: an additional disadvantage. *International Society for Equity in Health 4th Biennial International Conference*, Adelaide, Australia, 11-13 September 2006, Abstract No. 63.

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ABBREVIATIONS

ASCO	Australian Standard Classification of Occupations
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
CARDIA	Coronary Artery Disease Risk Development in Young Adults Study
CATI	Computer Assisted Telephone Interviewing
CD	Collector District
EWP	Electronic White Pages
GEE	Generalised Estimated Equation
GLM	Generalised Linear Modeling
INDEPTH	An International Network of field sites with continuous Demographic Evaluation of Populations and Their Health in developing countries
SAMSS	South Australian Monitoring and Surveillance System
SEIFA	SocioEconomic Indexes for Areas
SEP	Socioeconomic Position