THEORETICAL EXPLANATIONS AND EMPIRICAL EVIDENCE FOR THE RELATIONSHIP BETWEEN INCOME INEQUALITY AND POPULATION ORAL HEALTH

by

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Abstract

Background: Over 300 studies have examined the hypothesised negative impact of high income inequality on health outcomes. Oral health is integral to general health. Several studies have examined the association between income inequality and oral health outcomes. A gap exists in the understanding of the theoretical basis for the income inequality and oral health relationship. The literature on income inequality and oral health at the sub-national level is limited to the USA, Japan, and Brazil. Australian evidence on the association between income inequality and general health outcomes is limited and inconclusive, and there is none for oral health. To address these gaps, this thesis by publication answered the following two research questions:

Research Question (I): Which socio-epidemiologic theories can be used to explain the linkages between social inequalities and population oral health?

Research Question (II): Is area-level income inequality inversely associated with population oral health in the Australian context?

Methods: A scoping review identified different types of socio-epidemiologic theories used in the global literature on area-level social inequality and population oral health and analysed their extent of application. A population-based multilevel study used the data on oral health of 5,169 Australian dentate adults nested in 435 Local Government Areas (LGAs) from the 2013 National Dental Telephone Interview Survey (NDTIS-2013) to answer research question (II). Associations were tested between tertiles of LGA-level income inequality and oral health outcomes of inadequate dentition (presence of <21 teeth) and poor self-rated oral health after accounting for covariates. Additionally, the population-based study investigated variations in the tested associations according to tertiles of LGA-level mean household weekly

income, as well as, the variations in the household income-oral health gradients according to tertiles of LGA-level income inequality.

Results: The scoping review found that there was limited explicit use of socio-epidemiologic theories in the analytical frameworks of selected studies. The use of psychosocial theory was dominant among all the socio-epidemiologic theories proposed to explain the association between income inequality and oral health outcomes. The population-based study found no associations between LGA-level income inequality and poor self-rated oral health after adjusting for covariates. Contrary to the hypothesis, LGA-level income inequality was inversely associated with inadequate dentition (OR: 0.64; 95% CI: 0.48, 0.87) at the individual level. However, this association was limited to LGAs with high mean income. Individuals with lower household income had poorer oral health, but the household income and inadequate dentition gradients varied according to LGA-level income inequality.

Conclusions: There is a lack of theoretical basis for the association between area-level income inequality and oral health. Increased and explicit testing of theoretical pathways within the analytical framework of studies on income inequality and oral health outcomes is required. Findings from the Australian population-based study do not support the positive associations between area-level income inequality and worse oral health as reported from the USA, Japan and Brazil. These variations are likely due to the contextual differences between Australia, and these contexts including its social and geographic characteristics and consequent implications on distribution of oral health resources.

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Thesis Declaration

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Notes

Referencing style:

This thesis has followed the Council of Scientific Editors (CSE) 8th Name-Year (Author-Year) style of referencing (http://endnote.com/downloads/style/cse-style-manual-8th-ed-name-year). Chapters 5 and 6 of this thesis includes papers that are currently under peer-review in the journals Community Dentistry and Oral Epidemiology and Plos One. For consistency, the two manuscripts (Papers 3 and 4) are formatted using the Council of Scientific Editors (CSE) 8th Name-Year in this thesis, but are submitted to the journals following their respective referencing styles.

- Journal: Community Dentistry and Oral Epidemiology: (http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1600-0528/homepage/ForAuthors.html)
- Journal: PLOS One (http://journals.plos.org/plosone/s/submission-guidelines)

Appendices

Appendices submitted along with the publications to the journals are included at the end of Chapters 3 to 6. Appendices for the overall thesis are attached at the end of the thesis.