Determinants of Immigrant-Native Health Disparities in Australia across 21 Years

1. Introduction

In recent decades, major immigrant-receiving nations, including the United States, Canada, Germany, and Australia, have witnessed significant increases in their immigrant populations. This demographic shift has led to increased scrutiny of immigrant health and well-being, raising important questions about how immigrants' health outcomes compare with those of native populations and how public health systems in host societies can effectively address these changes.

A key concept in immigrant health research is the 'healthy immigrant effect,' which suggests that immigrants often exhibit lower mortality rates and better overall health compared to native populations. This phenomenon has been observed across various countries, with studies indicating that immigrants generally experience lower mortality rates despite sometimes facing socioeconomic disadvantages. However, while the healthy immigrant effect is well-documented concerning mortality, its implications for morbidity are less clear. Research has shown that immigrants may have lower rates of certain chronic conditions, such as cardiovascular disease and asthma, and may demonstrate better outcomes in areas like obesity. Conversely, other studies present contradictory findings, revealing that immigrants may suffer from poorer health outcomes in domains such as perinatal health, disability, and specific chronic conditions.

Given that current research often focuses on individual health dimensions or specific diseases, there is a need for a more comprehensive approach to understand immigrant-native health disparities. The World Health Organization defines health as a state of complete physical, mental, and social well-being, not merely the absence of disease. Therefore, a holistic perspective is essential for capturing the full scope of health disparities between immigrants and natives.

Several factors influence the healthy immigrant effect and contribute to disparities in health outcomes between immigrants and natives. These include demographic characteristics such as age and gender, socioeconomic status in the host society, and the duration of residence. Socioeconomic factors—such as employment status, income level, and neighbourhood socioeconomic status—play a crucial role, as immigrants' health outcomes often correlate with their socioeconomic position relative to natives. Additionally, the health trajectories of immigrants tend to converge with those of natives over time, which can erode the initial health advantages as immigrants adjust to their new environment. Other influencing factors include the characteristics of the country of origin, such as its level of socioeconomic development and cultural similarities with the host society, as well as the size and nature of the immigrant population. Despite substantial research on these factors, a comprehensive understanding of how they interact to affect health disparities remains limited. There is a critical need for deeper insights into how these variables contribute to health disparities between immigrants and natives.

This study aims to address these gaps by conducting a thorough examination of immigrant-native health disparities in Australia. By employing integrated health measures and advanced statistical techniques, this research seeks to provide valuable insights into the factors driving health disparities and to inform effective policy interventions aimed at improving health outcomes for immigrant populations.

2. Data

This study utilises data from the Household, Income and Labour Dynamics in Australia (HILDA) survey, which is Australia's first nationally representative household panel survey. Initiated in 2001, HILDA provides extensive individual- and household-level socioeconomic data through annual face-to-face and telephone interviews. For this study, the HILDA data spanning from 2001 to 2021 were employed. Participants under the age of 18 (n = 1,595, 0.6%) and those with incomplete data for the variables of interest (n = 11,642, 4.8%) were excluded, resulting in a sample of 246,687 observations for subsequent analysis.

3. Methods

This study employed the Short-Form Six Dimensions (SF-6D), a widely recognised health state classification measure, to comprehensively assess health outcomes. The SF-6D evaluates six dimensions of health: physical functioning, role participation (combining role-physical and role-emotional), social functioning, bodily pain, mental health, and vitality, utilising eleven items. SF-6D scores can be weighted to produce a total score ranging from 0.0 (indicating the poorest health state) to 1.0 (indicating the best health state). The SF-6D tool has demonstrated high validity, including within the Australian population.

The analysis employs a random-effects linear regression model to assess the impact of immigrant status on health outcomes, controlling for individuals' demographic characteristics, economy-related features, immigration-related features, and health behaviour. To explore the effect across different health distribution points, unconditional quantile regression is used. This method enables the estimation of changes in the distribution of independent variables across various quantiles (e.g., the 5^{th}, 25^{th}, 50^{th}, and 95^{th} percentiles, not just the mean) of an outcome variable. Additionally, the Blinder–Oaxaca decomposition method is applied to dissect the contribution of various controlled variables to health disparities between immigrants and natives.

4. Main Findings

4.1 Differences of SF-6D between the Australia-born and overseas-born populations

The analysis reveals that the overseas-born population consistently exhibits lower SF-6D scores compared to their Australia-born counterparts, with an average score of 0.6335 versus 0.6399 (Fig 1a). This discrepancy is evident across genders, with overseas-born males and females both scoring lower than their Australian-born peers (Fig 1b). Over the years, both groups experienced a decline in SF-6D scores, but the gap between them, which was notable from 2001 to 2011, diminished and became statistically insignificant from 2012 onwards (Fig 1c).

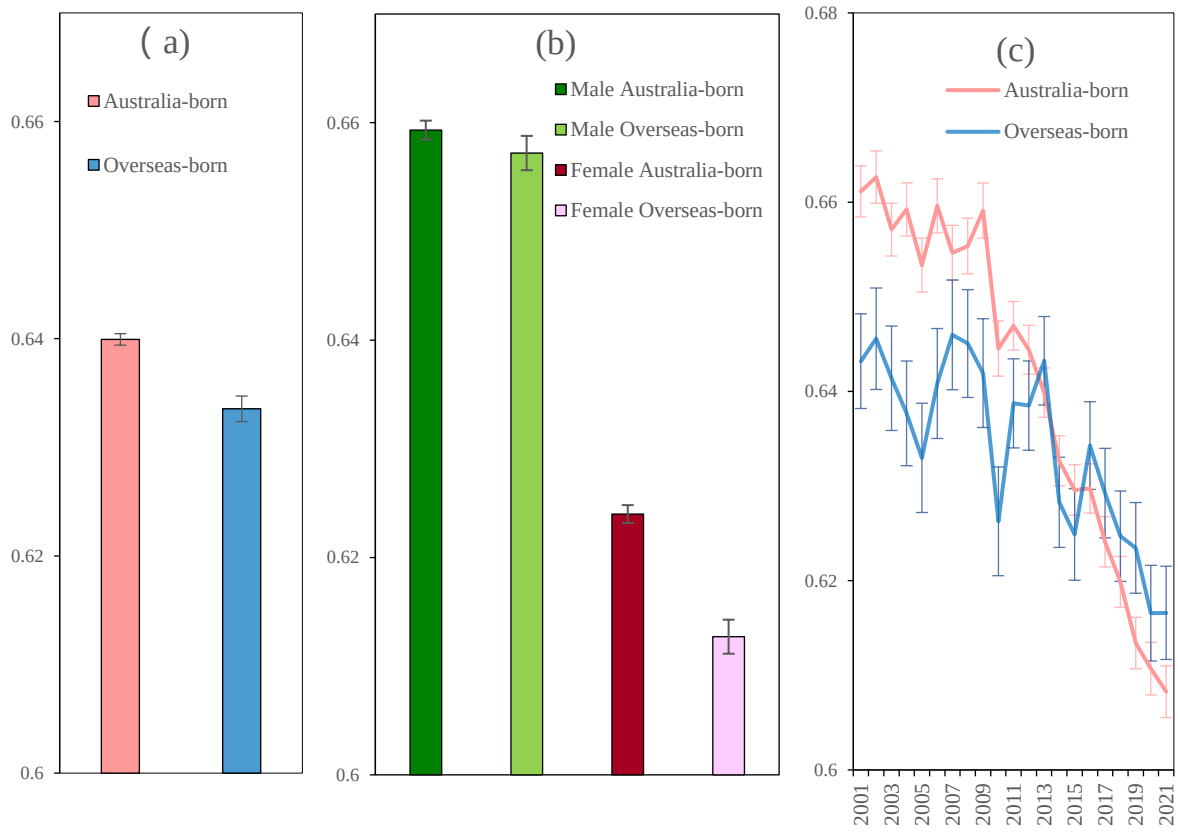

Figure 1 Nativity-specific Mean of SF-6D for (a) the whole sample and by (b) gender and (c) year
Note: 95% confidence interval is represented by vertical error bars

4.2 Effect of immigrant status on SF-6D outcomes

Random-effects linear regression and unconditional quantile regression show a generally negative impact of being overseas-born on SF-6D scores. Immigrants have a lower score by -0.008 on average (Table 1). This negative association is more pronounced at lower health quantiles (10th and 20th percentiles) but turns positive at higher quantiles (70th percentile and above), suggesting that while immigrants with poorer health experience worse outcomes, those in better health have a relative advantage compared to natives (Table 1).

Table 1 Results of a random-effects linear regression and the unconditional quantile regression regarding the effect of place of birth on health measured by the SF-6D score

	OLS regression	**Unconditional quantile regression**								
	Full sample	**Q(10)**	**Q(20)**	**Q(30)**	**Q(40)**	**Q(50)**	**Q(60)**	**Q(70)**	**Q(80)**	**Q(90)**
Overseas-born (ref.=Australia-born)	-0.008*	-0.0046*	-0.0024*	-0.0009	-0.0034	-0.0015	0.0038	0.0012**	0.0115**	0.0093**

*Note: Health is better the larger the dependent variable is. All regressions control for age, gender, marital status, educational attainment, remoteness, labour market status, household income, socioeconomic advantage of neighbourhood, proportion of living in Australia, citizenship, and smoking status. *=p<0.05, **=p<0.01, ***=p<0.001*

4.3 Decomposition results of immigrant-native differences of SF-6D

Blinder–Oaxaca decomposition indicates that 83.8% of the SF-6D score gap between immigrants and natives is due to individual-level differences, such as not being in the labour market, being older, or living in disadvantaged areas. The remaining 16.2% reflects unexplained group/system-level differences, pointing to disparities in healthcare treatment. Key factors influencing the individual-level gap include labour market status and residential socioeconomic conditions, while group/system-level factors include longer residence in Australia and educational attainment.

5. Discussions

5.1 Negative Correlation Between Immigrant Status and Health Outcomes

This study reveals a general negative correlation between immigrant status and health outcomes when using the SF-6D, a comprehensive health measure. This finding contrasts with the commonly reported 'healthy immigrant effect,' which suggests that immigrants typically enjoy better health compared to native populations. The discrepancy may be attributed to the SF-6D's broad scope, which evaluates not just physical health but also less commonly assessed dimensions such as social functioning, mental health, and role participation.

Immigrants frequently encounter unique challenges in these areas compared to native populations. Their lack of established social support networks, limited cultural capital, and unfamiliarity with the host society can significantly impact their health. For instance, the absence of robust social connections may lead to increased feelings of loneliness and social isolation. Additionally, immigrants may face higher levels of psychological stress, including anxiety and depression, which stem from the pressures of assimilating into a new environment and potential experiences of discrimination. These challenges can hinder their ability to access essential services, further exacerbating their health issues and contributing to the observed negative health outcomes.

5.2 Variation in Health Disparities Across Health Quantiles

The research finds that the negative impact of immigrant status on health is more pronounced among individuals with poorer health outcomes, while healthier immigrants show a positive correlation with better health outcomes. Poor health impedes immigrants' ability to integrate and adapt effectively, exacerbating their social isolation and psychological stress. In contrast, healthier immigrants are more capable of forming social connections and securing employment, which helps improve their overall well-being and mitigates the adverse effects of immigration.

5.3 Narrowing Immigrant-Native Health Disparities Over Time

The study observes a gradual reduction in health disparities between immigrants and natives over a 21-year period. This trend can be explained by the theory of age-as-a-leveler, which suggests that as people age, biological factors increasingly influence health outcomes, reducing the impact of sociocultural factors. Both Australia-born and overseas-born populations have aged over the study period, leading to a decrease in disparities as the relative influence of sociocultural factors diminishes.

5.4 Determinants of Immigrant-Native Health Disparities

The study reveals that individual-level factors, such as labour market status, socioeconomic advantage, and age, are key drivers of health disparities between immigrants and natives. Immigrants who are unemployed, reside in socioeconomically disadvantaged areas, or are older face poorer health outcomes due to reduced financial capacity, social connections, and access to healthcare. Additionally, systemic factors, including inadequate healthcare access and support, further exacerbate these disparities. For immigrants, particularly those in regional or disadvantaged areas, policy interventions are needed to address these systemic issues and improve overall health outcomes.

5.5 Policy Implications for Improving Immigrant Health Outcomes

To address the health disparities identified, targeted policy interventions are crucial. These should focus on enhancing support for immigrants' mental health, improving access to healthcare services, and addressing systemic barriers. Policies could include increasing resources for interpretation services, providing multilingual health materials, and improving healthcare access in regional and socioeconomically disadvantaged areas. Given the emphasis on regional migration within Australia, additional support for immigrants settling in these areas is essential to ensure they receive adequate healthcare and social support.