

**THE WIDENING GAP:  
PERCEPTIONS OF POVERTY AND INCOME INEQUALITIES AND  
IMPLICATIONS FOR HEALTH AND SOCIAL OUTCOMES**

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**Abstract**

This paper looks at New Zealand perceptions of poverty and inequality and the implications for health and social outcomes. Changes in economic and social policies have contributed to increased economic and social inequalities in Aotearoa New Zealand over the past 20 years. Research shows that such inequalities have strong implications for health and social outcomes. The New Zealand Values Survey data (collected by computer-assisted telephone interviewing from New Zealanders 18 years and over in two random samples [n = 1,226 and n = 1,272] from December 2004 to March 2005, and later fused into one data set) provide insights into how New Zealanders feel about inequalities and what they are prepared to do about them. The majority of respondents stated they were prepared to pay increased taxes to provide better health services and a better standard of living for the elderly and the disabled. However, less than half were in favour of increased taxes for subsidised mortgages or government-owned houses for those in housing need, or to reduce student debt. Around two-thirds believed people were poor because of personal deficits and they were generally not in favour of any increase in government assistance to the poor. These findings have implications for government policies aimed at reducing underlying inequalities to achieve more equitable health and social outcomes.

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## INTRODUCTION

How well and how long one lives one's life is powerfully shaped by one's place in the hierarchies built around occupation, education and income. (Graham 2000:3)

Socio-economic factors are widely acknowledged as important determinants of health and social outcomes (Public Health Association of New Zealand 1992, Macintyre 1997, Crampton 1998, Howden-Chapman 1999, Graham 2000, Howden-Chapman and Tobias 2000, Lynch et al. 2000, Ministry of Health 2000, Tobias et al. 2009).

This article is concerned with New Zealanders' perceptions of the socio-economic circumstances feeding into inequalities and government responsibilities in responding to disparities. In a democracy, government policies are to some extent reliant on public opinion. The previous Labour-led Government had a stated aim to reduce underlying inequalities to achieve a more equitable distribution of overall outcomes within society (Ministry of Social Development et al. 2007); the current National-led Government has not yet made it clear whether it is a policy priority for them or not. Do New Zealanders want a more level playing field? Is there a willingness to pay increased taxes to reduce socio-economic inequalities in order to improve health and social outcomes?

There has been plenty of evidence of socio-economic differences in health and social outcomes since the mid-nineteenth century (Dew and Kirkman 2002, Graham 2000, Regidor 2004). These historical insights about the importance of relative social and economic position to the health of individuals and the wellbeing of society have been rediscovered across the OECD (Dew and Kirkman 2002, Galobardes et al. 2006a, 2006b, Graham 2000, Howden-Chapman and Tobias 2000, Mackenbach et al. 1997, Regidor 2004).

Although life expectancy has been improving in New Zealand across all socio-economic groups, the socio-economic and ethnic gap in population health has remained, with systematic differences between sectors of the population (Blakely et al. 2007, 2008, Crampton 1998, Howden-Chapman and Tobias 2000). Those with higher socio-economic status (SES) continue to have lower morbidity and mortality rates than those with lower SES (Blakely et al. 2004). Inequalities in mortality between Māori and non-Māori persist within socio-economic strata (Ministry of Health 2006). Furthermore, geographical inequalities in health, along with inequalities in area-based social and economic deprivation, increased in the period up to 2001 (Salmond and Crampton 2002, Pearce and Dorling 2006). There is some indication that between 2001 and 2007 the ethnic inequalities may be slowing or reversing (Tobias et al. 2009).

"SES" is an umbrella term for a range of interacting socio-economic indicators of health status and social outcomes (Galobardes et al. 2006a). Indicators such as insufficient money for medical care or adequate food (Cheer et al. 2002, Waldegrave et al. 2004), or educational opportunities and neighbourhood characteristics (Crampton et al. 1997, Ellaway et al. 2001, Lochner et al. 2003, McCulloch 2001), may affect health and social outcomes directly (for instance, there are higher rates of hospitalisation among people living in more deprived areas [Crampton 1998]) or indirectly; while household conditions such as cold and damp (Howden-Chapman et al. 2007) or overcrowding (Baker et al. 2000, McNicholas et al. 2000) may affect health directly and social outcomes indirectly.

If SES is key to understanding inequalities in health and social outcomes (Galobardes et al. 2006b), income level is the key SES indicator. As Howden-Chapman et al. (2002) noted, the most pronounced indicator of social inequality in New Zealand over the preceding two decades was the growth in income inequality.

There is contested evidence that in addition to absolute levels of income, relative differences are also important determinants of inequalities in health and social outcomes and that these have cumulative effects throughout the life course (Kaplan et al. 1996, Kawachi and Kennedy 1997, Wilkinson 1997a, 1997b, Lynch et al. 2000, Osler et al. 2002). Adverse living conditions in childhood, and particularly the effects of inadequate income, are strong indicators of adult illness, irrespective of adult SES (Coggon et al. 1993, Dedman et al. 2001, Dewilde 2003, Galobardes et al. 2006b, Wadsworth 1997). Countries that minimise economic inequalities are societies where children are more likely to be able to develop to their full potential. These factors are essential prerequisites for greater prosperity for the country as a whole (Howden-Chapman et al. 2002).

Kawachi and Kennedy (1997) suggest that it is the lack of social cohesion / social capital (cooperative social interaction among individuals, groups and institutions (Spoonley et al. 2005) that is the mediating factor between income inequality and poorer health and social outcomes. Studies have shown that high levels of social cohesion are associated with lower mortality rates, and higher mortality rates with less social cohesion (Lindstrom et al. 2002, Reidpath 2003, Wilkinson 1999). Although there is evidently an interaction between material and psychosocial factors (Szreter and Woolcock 2004, Veenstra 2002, Wilkinson 1997a, 1997b), material factors such as adequate income and affordable, warm housing remain crucial for good health and social outcomes (Lynch et al. 2000, Smith 1996). Socially cohesive societies thrive because people are well housed, well fed and well educated, as well as not belittled, cowed or made to feel inadequate (Wilkinson 1999).

Whatever the mediating factors, it would appear that socio-economic inequalities have an adverse impact on population health and social outcomes. It is also clear that, by definition, these inequalities are at least in part socially produced. As such, they are potentially avoidable (Whitehead 2007). For instance, an increase in income inequality is not the inevitable consequence of social and economic change (Szreter and Woolcock 2004); in countries with redistributive fiscal and social policies (progressive taxation and social security benefits pegged to average incomes), poverty and inequality have not increased inexorably with the rise in unemployment (Graham 2000).

In New Zealand, income inequalities have increased since the neo-liberal reforms and benefit cuts of the late 1980s and 1990s, although the rate has slowed this decade (Blakely et al. 2007, Ministry of Social Development 2006, Ministry of Social Development 2007). The New Zealand Living Standards 2004 report showed a million New Zealanders living in some degree of hardship, with a quarter of these in severe hardship. Despite the buoyant economy and falls in unemployment levels, not only was there a slight increase in the overall percentage of those living in poverty between 2000 and 2004, but those with the most restricted living standards had slipped deeper into poverty (poverty defined as exclusion from the minimum acceptable way of life in one's own society because of inadequate resources) (Ministry of Social Development 2006, 2007).

Analysis of Census data presented in November 2006 at the Sociological Association of New Zealand Conference by a team of sociologists from the University of Auckland also showed

that over the past 20 years high income-earning families were better off while the real wages of low and median-income earners had either been static or had fallen (Collins 2006, Peter Davis, Director of Social Statistics Research Group, University of Auckland, personal communication, December 2006). While more people were in employment, it was often low-paid employment, and benefit levels have not recovered in real terms from the cuts of the late 1980s and 1991. Lower wage earners have also been disadvantaged by inflation when this has moved them into a higher tax bracket (Collins 2006, Peter Davis, personal communication 2006).

In 2004, the top 20% of New Zealand household incomes were five times higher than the bottom 20% while households at the 80th percentile had an income distribution 2.8 times greater than those at the 20th percentile (2007). In 2008 the ratio was 2.6, the first drop in 25 years, due to the Working For Families (WFF) package (Perry 2009). In 1988, 16% of households in the lowest quintile spent more than 30% of their income on housing. By 2004 this had risen to 35% (after peaking at 49% in 1994), despite the countering effects of income-related rents for some low-income families (Ministry of Social Development 2007). In 2008, 39% of households in the lowest quintile spent more than 30% of their income on housing (Perry 2009).

This greater income inequality has seen New Zealand move into 18th place out of 25 in the OECD in terms of income inequality from 1982 to 2004 (Ministry of Social Development 2007). Over the preceding two decades New Zealand experienced the largest growth in inequalities in the OECD (2000 figures), moving from 2 Gini coefficient points below the OECD average to 3 Gini points above (Ministry of Social Development 2007:45–46). One indication of the impact of these inequalities has been that relative poverty rates, including child poverty rates, have increased.

What might make a difference? Government policies can influence some of the variables affecting poverty and inequalities. The policy response has been to focus on reducing unemployment rather than maintaining or increasing welfare benefits. While there have been minimal increases in benefits or tax breaks for the lower paid in recent budgets, moves to lessen inequalities have included increasing both the minimum wage for employees aged 18 and the youth minimum wage and training rate; moves in the direction of wider access to affordable housing; and the WFF package. Progressively introduced from 2004, WFF is expected to put an additional \$1.6 billion into mainly low- and middle-income families, and mainly those in employment. This targeted assistance was expected to have a large impact on income poverty rates, especially for children (Ministry of Social Development 2007).

Such policies are always contested. There is debate over the best policies to reduce inequalities. Are targeted measures such as WFF or universal programmes encompassing all citizens the most efficient? A study of welfare systems in industrialised countries has shown that universal, as opposed to targeted, programmes were more efficient at reducing poverty and income inequalities (Whitehead 2007). In this paper we examine data from the New Zealand Values Survey 2005 (part of a wider World Values Survey on social, cultural and political values in over 80 countries) in order to find out how New Zealanders felt about poverty and reducing inequalities, through their responses to questions about social problems, government spending and social justice.

## THE NEW ZEALAND VALUES SURVEY

### Design

The New Zealand Values Survey data were collected by a computer-assisted telephone interviewing (CATI) system from New Zealanders aged 18 years and over, living in private residential dwellings with a connected landline telephone, including households with both listed and unlisted numbers. Respondents were asked a large number of questions, including their views on families, communities and society, the role of the government, taxation, the economy, the environment and social justice. Due to the large size of the questionnaire it was split into two versions. The two versions included some overlap in important questions but mostly contained unique question items. The two questionnaire survey sample sizes were  $n = 1226$  and  $n = 1272$ . Data collection took place from 9 December 2004 to 24 March 2005.

### Sampling

For each sample, telephone numbers were initially selected using random-digit dialling. Using randomly generated phone numbers has the advantage of including both listed and unlisted numbers so as to gain greater coverage than using non-randomly generated listed telephone numbers. Phone numbers in each sample were distributed in proportion to the usually resident population across 33 area strata which, when combined, cover the whole country. Each number was called at least 10 times at different times and days of the week, or until contact was made.

### Respondent Selection

The number of eligible people living in each household was established and listed so that the data collection software could select one respondent at random. Each eligible person within a household was thus given an equal chance of being selected. A proportion of households containing only one person were excluded, with a fixed probability of 0.5 to reduce the design effect.

### Response Rate

The response rate is the number of completed interviews as a proportion of the number of telephone numbers dialled that would or did produce an eligible participant. The response rate for both surveys was 51%.

The reliability of the findings from a survey depends on the response rate achieved, and decreasing survey response rates are a growing concern in research globally (Kypri et al. 2004). Decreased response rates may result in biased prevalence estimates due to systematic non-response. However, there is international evidence to suggest that the response rates currently achieved do not affect the representativeness or the validity of survey results that measure attitudes and values (Keeter et al. 2000).

### Data Fusion

As noted above, two versions of the questionnaire were used. These had a few selected questions in common, but most of the substantive questions only appeared in one version.

Data from the variables unique to each version were fused onto the other half-sample, creating a synthetic data set with complete data for all questions.

Data fusion (Gilula et al. 2004, Kamakura and Wedel 1997) was conducted using an unconstrained nearest neighbour matching algorithm, based on a weighted city-block distance, with penalties applied iteratively to minimise heavy donor usage. Weights for the matching variables were roughly proportional to their predictive power, based on classification trees for most of the unique variables. Specifically, the total size of all nodes split by each common variable was taken as the measure of their predictive power.

Calculating weighted means, proportions and other statistics from the fused data set is straightforward. However, standard software for analysing complex surveys will underestimate the variability of the results. This has been adjusted for here by increasing the estimated variances by a factor of 1.2848, which accounts for the increased effective weight applied to each respondent due to its use as a donor in the fusion process.

## Analysis

Various individual question items describing views on poverty, inequality and social justice were analysed for this article. These included questions about perceptions of levels of poverty, why people were poor and if it was possible for them to escape poverty, areas of government responsibility, areas where government should or should not increase spending on social services, what respondents were prepared to pay increased taxes for, and views on collective versus individual responsibility.

Important aspects of the sample design and weighting procedures were accounted for using the SUDAAN software package (Research Triangle Institute 2004). SUDAAN procedures, Descript and Rlogistic, were called from within SAS 8.2 to calculate the mean proportion of respondents who answered the question items analysed from the survey.

## RESULTS

### Proportion of People in Need

Fifty-five per cent of respondents thought there were more people living in need than 10 years ago; 24% thought it was the same and 21% thought there were fewer. The youngest group of respondents (18–24 years) were more likely to believe the proportion of people living in need was smaller, compared to older people aged 45–54 and those over 65.

### Causes of Poverty

When asked whether people were living in need because of “laziness”, “lack of will power” or because “society treats them unfairly”, 60% of respondents considered people were poor because of laziness and lack of will power. There was no overall significant difference between the age groups, although tertiary-educated respondents were more likely to state that people were poor because society treated them unfairly than those with no formal schooling or secondary education (but not those who only had primary school education). When interpreting these results, it is important to note that a relatively significant proportion of respondents were uncertain about how to respond to these two questions compared to other questions in the survey. Seven per cent stated they did not know how many people were

living in need, 8% stated they did not know why people lived in need and 6% refused to answer the latter question.

### Possibility of Change?

More than three-quarters of respondents (77%) thought most poor people have “a chance of escaping their poverty” while only 20% believed there was very little chance of escape. Only 2% of respondents gave a “don’t know” answer and 1% refused to answer the question.

### Government Responsibility

Forty-three per cent of respondents considered government assistance to people in need was “about right”, a third (34%) that it was “too little”, while almost a quarter (23%) thought the government was doing “too much”.

In a question about the responsibilities of central government, more than 80% of respondents thought it should be, or probably should be, the government’s role to guarantee a decent standard of living for the old (97%), provide housing (90%) and control prices (83%); 79% thought it was the government’s responsibility to provide jobs, and 62% thought it was the government’s responsibility to reduce income differences between rich and poor.

### Government Spending

The majority of respondents thought the government should increase to “some extent”, or “greatly increase”, spending on health services (87%), education (87%), pensions (66%), job training and assistance for the unemployed (65%) and assistance for people on lower incomes (53%). When it came to government spending on the Domestic Purposes Benefit, however, a majority of respondents thought benefit levels should remain the same (55%), with 24% stating they should be “increased” or “greatly increased” and 22% stating they should be “cut” or “greatly cut”. Similarly, in terms of assistance for new migrants, 53% felt the spending level should remain the same and 26% thought it should be “cut” or “greatly cut”.

### Willingness to Pay More Taxes

In a separate question, respondents were asked if they would be prepared to pay higher taxes for specific items. A majority said they would pay higher taxes for better health services (82%), a higher standard of living for the elderly (75%) and to assist disabled people to live better (also 75%). However, a majority were not in favour of paying increased taxes either for subsidised mortgages or government-owned housing for those who could not afford it (55%), or for reducing student debt (65%).

### Valuing the New Zealand lifestyle

In terms of why people chose to live in New Zealand, a good public health system (63% “very important” and 33% “important”) and good public education for children (66% “very important” and 27% “important”) topped the list, along with a high-quality natural environment, a good balance between work and home life and low crime rates. Of those committed to living in New Zealand, low poverty was also “important” or “very important” for 80% and high employment for 83%.

### Individual versus Collective Responsibility

In terms of where New Zealanders placed themselves on a 1–10-point continuum between “incomes should be more equal” and “we need larger income differentials as incentives for individual effort”, the overall average score across all ages was 5.5. This means New Zealanders on average were fairly equally divided between believing there should be greater income equality and believing there should be greater income inequality. When it came to a 1–10-point continuum between “the government should take responsibility to make sure everyone is provided for” and “people should take more responsibility to provide for themselves” the overall score across all ages was 6.5, showing slightly more leaning towards individual responsibility than collective responsibility.

### Redistributing Income?

In response to a question on whether government should redistribute income and wealth in favour of the less well off, 46% were either “strongly in favour” or “in favour”, with 24% either “against” or “strongly against”, while 30% were neutral.

## DISCUSSION

What are the implications of these findings? Is there a mandate for the kinds of policies that would reduce socio-economic inequalities in order to improve population health and wellbeing? How could this be achieved? As Whitehead states, “When decisions are taken that something must be done about a problem, the nature of the proposed action will depend on prevailing notions of what is causing the problem” (Whitehead 2007:473).

The results show there is a majority perception that poverty has increased in the past decade and that, as *New Zealand Herald* economics editor Brian Fallow has commented, “The Poor get poorer and poorer” (Fallow 2007:Business 2). However, a clear majority of those surveyed prefer to blame the poor for their position and believe they can get out of poverty if they try, rather than blaming underlying structural inequalities. Nonetheless, when asked about particular policy options, most respondents were clearly committed to increasing universal health and education spending, continuing to assist those in need such as the elderly and the disabled, and continuing to assist the unemployed into jobs. Although there was no clear mandate to actively decrease inequalities through redistributing income, only 24% of respondents were strongly opposed.

The reality of politics is that governments have a political agenda to stay in power. This means government policies must to some extent reflect electorate opinion, or the government must persuade the public that relatively unpopular policies are necessary, either by appealing to the public on the grounds of fairness and social justice or on the grounds of long-term self-interest. The arguments explored in this case are the cost effectiveness of spending money now on decreasing socio-economic inequalities in order to ensure better health and social outcomes, and thus in theory less drain on the economy in the future. Reducing inequalities is about fairness *and* self-interest (Woodward and Kawachi 2000).

There is a clear mandate for increasing spending on the universal provision of health services and education. These are important underpinnings to lessen social inequalities. Indeed, as Goodin and Le Grand (1987) and others have pointed out, policies that address the concerns of “not only the poor” are more likely to be effective, as well as politically sustainable. There

would also appear to be a clear mandate for adequate earnings-related benefits, at least for the “deserving” poor, such as the elderly and the disabled. Given that studies show universal programmes encompassing all citizens (with generous earnings-related benefits for those in need) appear to be more efficient at reducing poverty and tackling social inequalities than a minimal safety net and/or targeted programmes focusing exclusively on those at the bottom of the social scale (Whitehead 2007), this is positive in terms of support for government initiatives towards strategic investment in improving living conditions via more equitable distribution of public and private resources (Lynch et al. 2000).

A clear majority also believe that those who are unemployed should receive training and assistance to get jobs. Whether this is because of a belief that able-bodied people should not be allowed to languish on benefits (“[People] are poor because of laziness and lack of will power”), or because of an understanding of the advantages to the individual of being in employment, is unclear. Whatever the reasons, support and training for the unemployed to assist them into employment can be seen as an important measure, both in terms of access to better monetary resources and participation within the community. Given that these survey responses were given during an economic boom, it is possible that the expectations around the balance of responsibility for active labour market policies during an economic recession could have shifted.

Given the far-reaching effects on health and wellbeing of child poverty, and the fact that children living in sole-parent households are more likely than those in two-parent or other family households to be living in poverty (Ministry of Social Development 2007), it is significant that 55% of respondents thought Domestic Purposes Benefit levels should not be raised, while 22% felt they should be cut. The WFF package only partially covers children whose parents are not in paid employment, and while it is undoubtedly helping many struggling families, the package currently discriminates against these poorest children (St John 2007).

Overall the survey findings are consistent with the continuation of a strong safety net and government provision of social services to help those who are disadvantaged. However, the findings are ambiguous in terms of the government having a specific mandate for increased redistribution of resources to lessen the trend of the two decades to 2004 towards increasing inequalities. Less than half of respondents wanted a redistribution of wealth in favour of the less well off (although 30% were neutral, with only a quarter of respondents opposed). However, in a separate question, most people (62%) thought government *should* be responsible for reducing income differences. Living in a country with a low rate of poverty was also an important factor for 80% of those committed to living in New Zealand; and while there was a slight bias towards individual over collective responsibility, less than a quarter of respondents believed the Government was doing too much for people living in need.

In order to realise the aim of reducing inequalities to achieve more equitable outcomes the electorate will need to continue to support the idea that both individual agency *and* a focus on reducing structural socio-economic inequalities are important. On-going research monitoring the consequences of income inequalities for health, social outcomes and productivity is vital. Political decisions that are made about social investments will have significant intergenerational economic, social and health effects. The outcomes of this decade’s policies are important, not just for welfare recipients, but for New Zealand as a whole.

## REFERENCES

- Baker, M.A., N. McNicholas, N. Garrett, J. Jones, V. Stewart, N. Koberstein, et al. (2000) "Household crowding a major risk for meningococcal disease in Auckland children" *Pediatric Infectious Disease Journal*, 19:983–90.
- Blakely, T., J. Fawcett, J. Atkinson, M. Tobias and J. Cheung (2004) *Decades of Disparity II: Socioeconomic Mortality Trends in New Zealand 1981–1999*, Ministry of Health, Wellington.
- Blakely, T., M. Tobias, J. Atkinson, L.-C. Yeh and K. Huang (2007) *Tracking Disparity: Trends in Ethnic and Socioeconomic Inequalities in Mortality, 1981–2004*, Public Health Intelligence Occasional Bulletin 38, Ministry of Health, Wellington.
- Blakely T, M. Tobias and J. Atkinson (2008) "Inequalities in mortality during and after restructuring of the New Zealand economy: Repeated cohort studies" *British Medical Journal*, 336:371-375.
- Cheer, T., R. Kearns, L. Murphy (2002) "Housing policy, poverty and culture: Discounting decisions among Pacific peoples in Auckland, New Zealand" *Environment and Planning C: Government and Policy*, 20:497–516.
- Coggon, D., D.J.P. Barker, H. Inskip and G. Wield (1993) "Housing in early life and later mortality" *Journal of Epidemiology and Community Health*, 47:345–348.
- Collins, S. (2006) "Families no better off than 20 years on" *New Zealand Herald*, 25 November: News.
- Crampton, P., C. Salmond and F. Sutton (1997) "The NZDep91 Index of Deprivation" in *Socioeconomic Inequalities and Health*, Institute of Policy Studies, Wellington, pp.149-156.
- Crampton, P. (1998) "Measuring deprivation and socioeconomic status: Why and how?" *New Zealand Public Health Report*, 5(11/12):81–84.
- Dedman, D.J., D. Gunnell, G. Davey Smith and S. Frankel (2001) "Childhood housing conditions and later mortality in the Boyd-Orr Cohort" *Journal of Epidemiology and Community Health*, 55:10–15.
- Dew, K. A. and Kirkman (2002) *Sociology of Health in New Zealand*, Oxford University Press, Auckland.
- Dewilde, C. (2003) "A life-course perspective on social exclusion and poverty" *British Journal of Sociology*, 54:109–128.
- Ellaway, A., S. Macintyre and A. Kearns (2001) "Perceptions of place and health in socially contrasting neighbourhoods" *Urban Studies*, 38:2299–2316.
- Fallow, B. (2007) "Poor get poorer and poorer" *New Zealand Herald*, 26 July: Business 2.
- Galobardes, B., M. Shaw, D. Lawlor, J.W. Lynch and G. Davey Smith (2006a) "Indicators of socio-economic position (part 1)" *BMJ*, 60: 7–12.
- Galobardes, B., M. Shaw, D.A. Lawlor, J.W. Lynch and G. Davey Smith (2006b) "Indicators of socio-economic position (part 2)" *BMJ*, 60:95–101.
- Gilula, Z., R. McCulloch and P. Rossi (2004) "A direct approach to data fusion" *University of Chicago Graduate School of Business and Marketing Workshop for 4th October*, <http://gsbwww.uchicago.edu/kilts/research/workshop/WorkshopPapers/Rossi.pdf>
- Goodin, R.E. and J. Le Grand (1987) *Not Only the Poor: The Middle Classes and the Welfare State*, Allen and Unwin, London.
- Graham, H. (2000) *Understanding Health Inequalities*, Oxford University Press, Buckingham.
- Howden-Chapman, P. (1999) "Socioeconomic inequalities and health" in P. Davis and K. Dew (eds.) *Health and Society*, Oxford University Press, Melbourne.

- Howden-Chapman, P., T. Blakely, A.J. Blaiklock and C. Kiro (2002) "Closing the health gap" *New Zealand Medical Journal*, 113(1114):301–302.
- Howden-Chapman, P., A. Matheson, J. Crane, H. Viggers, M. Cunningham, T. Blakely, et al. (2007) "Effect of insulating existing houses on health equality: Cluster randomised study in the community" *BMJ* doi:10.1136/bmj.39070.573032.80.
- Howden-Chapman, P. and M. Tobias (2000) *Social Inequalities in Health: New Zealand 1999*, Ministry of Health, Wellington.
- Kamakura, W. and M. Wedel (1997) "Statistical data fusion for cross-tabulation" *Journal of Marketing Research*, 34:485–498.
- Kaplan, G.A., E.R. Pamuk, J.W. Lynch, R.D. Cohen and J.L. Balfour (1996) "Inequality and income mortality in the United States: Analysis of mortality and potential pathways" *BMJ*, 312:999–1003.
- Kawachi I. and B. Kennedy (1997) "Socioeconomic determinants of health: Health and social cohesion: why care about income inequality?" *BMJ*, 314:1037.
- Keeter, S., C. Miller, A. Kohut, R. Groves, S. Presser (2000) "Consequences of reducing nonresponse in a national telephone survey" *Public Opinion Quarterly*, 64:125–148.
- Kypri, K., S. Stephenson and J. Langley 2004 "Assessments of nonresponse bias in an internet survey of alcohol use" *Alcoholism: Clinical and Experimental Research*, 28:630–634.
- Lindstrom, M., J. Merlo and P.-O. Ostergren (2002) "Individual and neighbourhood determinants of social participation and social capital: A multilevel analysis of the city of Malmo, Sweden" *Social Science and Medicine*, 54:1779–1791.
- Lochner, K.A., I. Kawachi, R.T. Brennan and S.L. Buka (2003) "Social capital and neighbourhood mortality rates in Chicago" *Social Science and Medicine*, 56:1797–1805.
- Lynch, J.W., G. Davey Smith, G.A. Kaplan and J.S. House (2000) "Income inequality and mortality: Importance to health of individual income, psychosocial environment, or material conditions" *BMJ*, 320:1200–1204.
- McCulloch, A. (2001) "Social environments and health: Cross sectional national survey" *BMJ*, 323:208–209.
- Macintyre, S. (1997) "The Black Report and beyond: What are the issues?" *Social Science and Medicine*, 44: 723–745.
- Mackenbach, J.P., A.E. Kunst, A.E. Cavelaars, F. Groenhof and J.J. Geurts, (1997) "Socioeconomic inequalities in morbidity and mortality in western Europe: The EU Working Group on Socioeconomic Inequalities in Health" *Lancet*, 349:1655–1659.
- McNicholas, A., D. Lennon and P. Crampton (2000) "Overcrowding and infectious diseases: When will we learn the lessons of our past?" *New Zealand Medical Journal*, 113:453–454.
- Ministry of Health (2000) *Reducing Inequalities in Health*, Ministry of Health, Wellington.
- Ministry of Social Development (2006) *New Zealand Living Standards Report 2004*, Ministry of Social Development, Wellington.
- Ministry of Social Development (2007) *Household Incomes in New Zealand: Trends in Indicators of Inequality and Hardship 1982–2004*, Ministry of Social Development, Wellington.
- Ministry of Social Development, D. Bromell and M. Hyland (2007) *Social Inclusion and Participation: A Guide for Policy and Planning*, Ministry of Social Development, Wellington.
- Osler, M., E. Prescott, M. Gronbaek, U. Christensen, P. Due and G. Engholm (2002) "Income inequality, individual income, and mortality in Danish adults: Analysis of pooled data from two cohort studies" *BMJ*, 324:13.

- Pearce, J. and D. Dorling (2006) "Increasing geographical inequalities in health in New Zealand, 1980–2001" *International Journal of Epidemiology*, 35:597–603.
- Perry, Bryan (2009) *Household Incomes in New Zealand: Trends in Indicators of Inequality and Hardship 1982 to 2008*, Ministry of Social Development, Wellington.
- Public Health Association of New Zealand (1992) *The Impact of Economic and Social Factors on Health*, Report prepared by the Public Health Association of New Zealand for the Department of Health, Public Health Association of New Zealand, Wellington.
- Regidor, E. (2004) "Measures of health inequalities: part 1" *Journal of Epidemiology and Community Health*, 58:858–861.
- Reidpath, D.D. (2003) "Love they neighbour it's good for your health: A study of racial homogeneity, mortality and social cohesion in the United States" *Social Science and Medicine*, 57: 253–261.
- Research Triangle Institute (2004) *SUDAAN Instalation Guide Release 9.00. SAS 8-Callable Individual User Version*, Research Triangle International, North Carolina.
- Smith, G.D. (1996) "Income inequality and mortality: Why are they related?" *BMJ*, 312:987–988.
- St John, S. (2007) "Plight of most vulnerable unchanged by tax credits" *New Zealand Herald*, 13 April: News 13.
- Salmond, C. and P. Crampton (2002) *NZDep2001 Index of Deprivation*, Department of Public Health, Wellington School of Medicine, Wellington.
- Spoonley, P., R. Peace, A. Butcher, D. O'Neill (2005) "Social cohesion: A policy and indicator framework for assessing immigrant and host outcomes" *Social Policy Journal of New Zealand*, 24:85–110.
- Szreter, S. and M. Woolcock (2004) "Health by association?: Social capital, social theory, and the political economy of public health" *International Journal of Epidemiology*, 33:650–667.
- Tobias, M., T. Blakely, D. Matheson, K. Rasanathan and J. Atkinson (2009) "Changing trends in indigenous inequalities in mortality: Lessons from New Zealand" *International Journal of Epidemiology*, (advance access).
- Veenstra, G. (2002) "Social capital and health (plus wealth, income inequality and regional health governance" *Social Science and Medicine*, 34:849–868.
- Wadsworth, M. (1997) "Health inequalities in the life course perspective" *Social Science and Medicine*, 44:859–869.
- Waldegrave, C., P. King and R. Stephens (2004) "Changing housing policies, poverty and health" in P. Howden-Chapman and P. Carroll (eds.) *Housing and Health: Research, Policy and Innovation*, Steele Roberts, Wellington.
- Whitehead, M. (2007) "A typology of actions to tackle social inequalities in health" *Journal of Epidemiology and Community Health*, 61:473–478.
- Wilkinson, R.G. (1997a) "Commentary: Income inequality summarizes the health burden of individual relative deprivation" *BMJ*, 314:1727.
- Wilkinson, R.G. (1997b) "Socioeconomic determinants of health: Health inequalities: relative or absolute material standards?" *BMJ*, 314:591–594.
- Wilkinson, R.G. (1999) "Income inequality, social cohesion and health: Clarifying the theory: a reply to Mutaner and Lynch" *International Journal of Health Services*, 29:525–543.
- Woodward, A. and I. Kawachi (2000) "Why reduce health inequalities" *Journal of Epidemiology and Community Health*, 54:923–929.