Asian Health Chart Book 2006

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Foreword

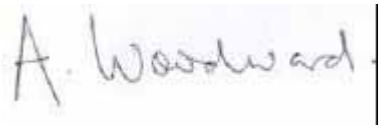
Asian peoples currently make up more than 6% of the New Zealand population, and this proportion is expected to increase to approximately 12% by 2021. It is therefore vitally important that the health of Asian New Zealanders is carefully monitored and the changing health needs of this population accurately assessed.

This *Asian Health Chart Book 2006* is the first comprehensive review of Asian health, and the first to systematically examine inequalities between Asian ethnic groups and between migrant and established Asian communities.

The report adopts an indicator approach in order to focus attention on specific health issues of particular importance to Asian peoples. Information is presented on more than 80 indicators covering four domains: health status, health risk profile, social determinants of health, and patterns of health service utilisation.

Although trend information is not presented in this report (due to lack of reliable historical data), it will provide a baseline for periodic updating. Over time it will become possible to examine trends, assess progress in Asian health, and take corrective action as required.

Reducing inequalities in health – whether between ethnic groups, social classes, genders or generations – is a key goal of the New Zealand Health Strategy, released by the Minister of Health in December 2000. The information provided by this report and its future updates will contribute to the achievement of this goal.



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Contents

Appendices

References and Further Reading

List of Tables

List of Figures

Executive Summary

Background

One of the goals of the New Zealand Health Strategy (Minister of Health 2000) is to monitor the health of all New Zealanders and monitor inequalities in health between ethnic groups. Much progress has been made over the past decade towards monitoring the health of Māori, Pākehā and Pacific ethnic groups, but little has been conducted for Asian peoples. This report is intended to address this gap by collating existing health-related data for Asian peoples in New Zealand, thereby providing a barometer of the current health status of Asian New Zealanders as a baseline from which to monitor future trends.

The definition of 'Asian' used in this report is that developed by Statistics New Zealand in 1996. This definition includes people with origins in the Asian continent, from Afghanistan in the west to Japan in the east, and from China in the north to Indonesia in the south.

Asian New Zealanders differ widely in areas such as language, culture and settlement history, which could affect their health needs. Chinese and Indians are the two largest Asian communities and also have long histories of settlement in New Zealand. As a result, this report presents data for three ethnic groups separately – Chinese, Indian and 'Other Asian', stratified by duration of residence. By doing so, we aim to recognise the diversity that exits within the 'Asian' population, and so avoid the pitfall of averaging.

Data sources and statistical methods

Data in this report were derived from multiple sources, including the New Zealand Health Information Service, New Zealand Cancer Registry, Statistics New Zealand, National Screening Unit and New Zealand Health Survey. The data relate mostly to 2001–2003; no historical data sufficiently robust for a time series were available.

Most of the indicators in this report are presented as crude rates and/or age-specific rates in tabular format. Direct age-standardised rates are used to enable summary comparisons between ethnic groups and the total New Zealand population (for this reason, the standardised rates themselves are generally not shown – only the rate ratios). For most rates and rate ratios, 95% confidence intervals are provided. Logistic regression models have been constructed to examine the association between various health outcomes and Asian ethnicity, adjusting for multiple covariates including age, sex, deprivation and duration of residence in New Zealand.

Key results

The indictors selected in this report were based on the conventional criteria:

- signal wider health concerns
- focus on the most important health issues in each life stage
- can be reliably and validly monitored
- are modifiable through intervention.

Health outcomes

Whole of life

Four indicators were selected to capture health across whole of life: life expectancy, avoidable mortality, ambulatory-sensitive hospitalisations and mental health.

Table I: Summary indicators, whole of life

Indicators		Chinese		Indian		Other Asian		Total population	
		Male	Female	Male	Female	Male	Female	Male	Female
Life expectancy at birth, 1999–2003		84.7 (83.9–85.5)	88.0 (87.3–88.8)	78.4 (77.2–79.6)	82.2 (81.1–83.4)	N/a	N/a	75.9 (75.8–76.0)	80.9 (80.8–81.0)
Avoidable mortality, 1998–2002	CR, per 100,000	123.6 (109.5–138.9)	65.1 (55.4–75.9)	174.0 (153.1–196.8)	93.3 (78.2–-110.5)	137.1 (119.6–156.5)	73.7 (62.2–86.7)	N/a	N/a
	SRR	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.9 (0.8–1.0)	0.8 (0.7–1.0)	0.9 (0.8–1.0)	0.7 (0.6–0.9)	1.0	1.0
Ambulatory-sensitive hospitalisations 1999–2003	CR, per 100,000	1207.1 (1162.4–1253.1)	1119.1 (1077.9–1161.6)	3734.5 (3635.6–3835.3)	2754.5 (2669.3–2841.7)	1734.8 (1670.8–1800.7)	1515.5 (1461.6–1570.9)	N/a	N/a
	SRR	0.4 (0.4–0.4)	0.4 (0.4–0.4)	1.3 (1.3–1.3)	1.1 (1.1–1.1)	0.7 (0.7–0.7)	0.7 (0.7–0.7)	1.0	1.0
All age suicide mortality, 1998–2002	CR, per 100,000	7.4 (4.3–11.8)	4.4 (2.2–7.8)	21.9 (15.0–30.9)	6.2 (2.8–11.8)	9.3 (5.2–15.4)	6.6 (3.5–11.2)	N/a	N/a
	SRR	0.3 (0.2–0.6)	0.6 (0.3–1.3)	1.0 (0.6–1.6)	0.8 (0.4–1.9)	0.4 (0.2–0.8)	1.1 (0.5–2.5)	1.0	1.0

* SRR: Standardised rate ratio. The reference group (rate ratio = 1) is the total New Zealand population. CR: Crude rate.

- Chinese have a much longer life expectancy at birth than the total New Zealand population.
- Avoidable mortality is significantly lower for Chinese, Indian and Other Asian ethnic groups than for the total population.
- The avoidable mortality rate worsens for Chinese New Zealanders who were born in New Zealand or have lived in New Zealand for longer periods.
- Chinese and Other Asians have significantly lower ambulatory-sensitive hospitalisation rates than the total population, while Indians have a significantly higher rate.
- Chinese and Other Asian males have significantly lower suicide mortality rates than that of the total population.

Infants and children (0–14 years)

The indicators used in this section include infant mortality, low birthweight, injury and asthma.

Table II: Summary indicators, infant and children

Indicators	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Infant mortality, per 1000, 1998–2002	2.5 (1.6–3.7)		4.7 (3.2–6.7)		3.2 (2.0–4.8)		5.7 (5.4–5.9)	
Neonatal mortality, per 1000, 1998–2002	1.8 (1.1–2.9)		3.4 (2.1–5.2)		1.7 (0.9–3)		3.3 (3.1–3.5)	
Post-neonatal mortality, per 1000, 1998–2002	0.7 (0.3–1.5)		1.2 (0.5–2.5)		1.5 (0.7–2.6)		2.4 (2.2–2.5)	
Low birthweight, per 100, 1999–2003	5.5 (5.0–6.0)		10.9 (10.2–11.7)		6.9 (6.3–7.5)		6.6 (6.5–6.7)	
Unintentional injuries hospitalisation (0–4 years), per 100,000, 1999–2003	1290.3 (1119.3–1480.1)	1123.0 (961.9–1303.4)	2216.7 (1959.7–2498.1)	1673.1 (1446.0–1925.9)	1867.9 (1638.6–2120.4)	1394.6 (1199.4–1612.6)	2762.7 (2723.7–2802.1)	2151.4 (2116.2–2187.1)
Unintentional injuries hospitalisation (5–14 years), per 100,000, 1999–2003	896.0 (796.6–1004.3)	663.8 (576.2–760.9)	1477.9 (1330.3–1637.3)	906.4 (789.8–1035.4)	1529.7 (1396.7–1672.0)	827.5 (727.5–937.4)	2357.0 (2332.4–2381.9)	1492.4 (1472.3–1512.8)
Asthma hospitalisation (5–14 years), per 100,000, 1999–2003	164.0 (123.2–214.0)	125.7 (89.4–171.8)	561.3 (471.8–662.7)	233.9 (176.7–303.8)	182.6 (138.6–236.0)	70.4 (43.5–107.5)	297.2 (288.5–306.1)	235.0 (227.1–243.2)

- Infant mortality is significantly lower in Chinese and Other Asian ethnic groups than in the total population.
- Chinese and Other Asian infants have a significantly lower neonatal mortality rate than the total population.
- Chinese infants also have a significantly lower post-neonatal mortality rate than the New Zealand average.
- Low birthweight is significantly less prevalent among Chinese newborns than the total population, while Indian newborns are at significantly higher risk of low birthweight than the total population (using the conventional cut-point of 2500 grams).
- Chinese, Indian and Other Asian children are less likely to be hospitalised for an unintentional injury than the total population.
- Indian boys are 1.5 times more likely to be hospitalised for asthma than the total population, while Chinese and Other Asian children are significantly less likely to be hospitalised for this condition.

Young people (15–24 years)

The health indicators selected for young people include intentional self-harm and suicide, road traffic injury and fertility – the major health problems faced by young people.

Table III: Summary indicators, young people

Indicators	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Intentional injuries hospitalisation (15–24 years), per 100,000, 1998–2002	15.0 (6.9–28.5)	87.1 (64.4-115.1)	112.6 (74.2–163.8)	334.3 (267.0–413.4)	55.2 (34.2–84.4)	167.8 (130.3–212.8)	109.9 (104.2–115.9)	267.5 (258.6–276.7)
Suicide mortality (15–24 years), per 100,000, 1998–2002	13.3 (5.8–26.3)	5.3 (1.1–15.6)	50.0 (25.9–87.4)	19.7 (6.4–45.9)	13.1 (4.3–30.7)	14.8 (5.4–32.2)	34.9 (31.7–38.3)	12.3 (10.4–14.4)
Road traffic hospitalisation (15–24 years), per 100,000, 1998–2002	193.5 (159.9–232.1)	142.1 (112.7–176.9)	216.8 (161.9–284.3)	114.1 (76.4–163.8)	323.3 (268.7–385.8)	264.1 (216.4–319.1)	639.1 (625.2–653.1)	324.7 (314.8–334.8)
Road traffic mortality (15–24 years), per 100,000, 1998–2002	20.0 (10.3–35.0)	16.0 (7.3–30.4)	25.0 (9.2–54.4)	–	39.4 (22.1–65.0)	14.8 (5.4–32.2)	38.1 (34.8–41.7)	14.8 (12.8–17.1)
Birth rate per 1000 female population (15–19 years), 2002–2004	N/a	5.4 (4.4–6.6)	N/a	16.1 (13.3–19.2)	N/a	11.5 (9.8–13.5)	N/a	38.0 (37.4–38.6)

- Chinese and Other Asian youth have significantly lower intentional injury hospitalisation rates than the total population, while Indian female youth have a higher rate than the total population.
- Chinese and Other Asian male youth have significantly lower suicide mortality rates than the total population.
- Youth road traffic injury hospitalisation rates for all Asian ethnic groups are significantly lower than the all New Zealand average.
- In the 15 to 19 years age group, Asian females have significantly lower birth rates than the total population.

Adults (25+ years)

The indicators selected for this section focus on the key health issues facing adults, including: cardiovascular diseases, diabetes, cancer and injuries from falls.

Table IV: Summary indicators, adult

Indicators		Chinese		Indian		Other Asian		Total population	
		Male	Female	Male	Female	Male	Female	Male	Female
IHD hospitalisation (45–64 years), per 100,000, 1999–2003		433.8 (374–500.5)	180.0 (145.1–220.8)	4217.5 (3976.2–4469.7)	1256.0 (1120.5–1403.4)	895.7 (776.2–1028.5)	307.1 (246.6–377.9)	1643.2 (1625.6–1660.9)	693.3 (682.1–704.7)
IHD hospitalisation (65+ years), per 100,000, 1999–2003		1735.7 (1522.6–1970.2)	1239.8 (1066.7–1433.1)	8264.3 (7491.8–9094.8)	5031.4 (4459.3–5656.6)	3719.0 (3118.1–4401.9)	1798.6 (1450–2205.9)	4547.3 (4505.2–4589.7)	2859.4 (2830–2889.1)
IHD mortality (45–64 years), per 100,000, 1998–2002		69.2 (46.7–98.8)	–	185.0 (137.3–243.9)	48.3 (25.0–84.4)	89.1 (54.4–137.6)	17.3 (5.6–40.3)	158.6 (153.1–164.1)	45.1 (42.2–48)
IHD mortality (65+ years), per 100,000, 1998–2002		406.7 (307.2–528.1)	365.9 (274.8–477.4)	1380.7 (1076.3–1744.4)	916.4 (682.4–1205.0)	826.4 (557.6–1179.8)	567.0 (379.7–814.2)	1401.5 (1378.2–1425.2)	1061.2 (1043.3–1079.3)
Stroke hospitalisation (65+ years), per 100,000, 1999–2003		1002.2 (842.0–1184.0)	948.5 (797.9–1119.3)	1814.6 (1462.8–2225.4)	1725.1 (1397.3–2106.6)	1432.5 (1069.9–1878.5)	1407.6 (1101.4–1772.7)	1587.5 (1562.6–1612.6)	1337.9 (1317.8–1358.2)
Stroke mortality (65+ years), per 100,000, 1998–2002		377.6 (282.0–495.2)	426.8 (328.0–546.1)	473.4 (303.3–704.3)	413.3 (262.0–620.1)	220.4 (95.1–434.2)	469.2 (300.6–698.1)	480.5 (466.9–494.4)	622.6 (608.9–636.5)
Diabetes (self-reported) 15+ years, 2002/03	CR, per 100	3.4 (0.6–6.3)		9.4 (3.9–15)		5.7 (1.8–9.6)		N/a	
	SRR	1.4 (0.3–2.5)		3.3 (1.6–4.9)		1.8 (0.3–3.2)		1.0	
All cancer registrations (45–64 years), per 100,000, 1997–2001		270.0 (223.3–323.6)	266.1 (223.3–314.8)	185.0 (137.3–243.9)	310.0 (244.6–387.4)	343.1 (270.8–428.9)	414.1 (343.3–495.1)	652.4 (641.3–663.6)	701.8 (690.5–713.3)
All cancer registrations (65+ years) per 100,000, 1997–2001		1060.3 (895.3–1246.9)	806.2 (667.9–964.8)	1104.5 (834.4–1434.3)	700.8 (498.3–958)	2011.0 (1576.3–2528.6)	1446.7 (1136–1816.2)	3047.6 (3013.1–3082.3)	1685.6 (1663–1708.4)
All cancer mortality (45–64 years), per 100,000, 1998–2002		106.1 (77.7-141.6)	82.2 (59.2–111.1)	81.4 (51.0–123.2)	100.6 (65.1–148.6)	129.2 (86.5–185.6)	120.8 (84.1–168)	239.3 (232.6–246.1)	228.7 (222.3–235.3)
All cancer mortality (65+ years), per 100,000, 1998–2002		631.8 (506.1–779.3)	460.7 (357.8–584.1)	631.2 (431.7–891.0)	521.1 (349.0–748.4)	1239.7 (904.2–1658.8)	782.0 (558.7–1064.9)	1524.2 (1499.9–1548.9)	987.2 (969.9–1004.7)
Breast cancer registrations (45+ years), per 100,000, 1997–2001		N/a	100.2 (77.5–127.5)	N/a	161.2 (119.2–213.1)	N/a	173.0 (131.7–223.2)	N/a	292.7 (286.9–298.5)
Breast cancer mortality (45+ years), per 100,000, 1997–2001		N/a	21.3 (11.6–35.7)	N/a	29.6 (13.5–56.2)	N/a	41.1 (22.4–68.9)	N/a	84.5 (81.4–87.7)

Notes: CVD: cardiovascular disease; IHD: ischaemic heart disease; CR: crude rate; SRR: standardised rate ratio.
The reference group (rate ratio = 1) is the total New Zealand population.

- Indian males and females have significantly higher cardiovascular disease hospitalisation and mortality rates than the total population.
- There is a dose-response relationship between duration of residence in New Zealand and cardiovascular disease mortality for the Asian ethnicity groups.
- Ischaemic heart disease hospitalisation is significantly higher for Indian males and females across all age groups than the total population.
- Ischaemic heart disease mortality is significantly higher in Indian females than in their Chinese and Other Asian counterparts.
- Overall, stroke hospitalisation and mortality are lower for Chinese than for the total population, while Indian and Other Asian have higher stroke hospitalisation than the total population.
- The prevalence of self-reported diabetes is over three times higher for Indian people than for the total population.
- Overall, cancer registrations and mortality rates are lower for all Asian ethnic groups than for the total population. This applies both to lung cancer (a proxy for tobacco-attributable cancers) and non-lung cancer.
- Female breast cancer registrations and mortality are lower for all Asian ethnic groups than for the total population.
- Stomach cancer registrations are higher for Chinese females and Other Asian males than for the total population.

Health services utilisation

The indicators in this section focus on utilisation of primary health care and clinical preventive services.

Table V: Summary indicators, health service utilisation

Indicators	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Usual care, 15+ years, per 100, 2002/03	57.0 (45.3–68.7)	80.6 (73.9–87.3)	84.9 (77.8–92.1)	84.0 (75.2–92.8)	84.4 (75.1–93.8)	85.2 (75.8–94.5)	N/a	N/a
Been to the doctor, 15+ years, per 100, 2002/03	48.8 (39.1–58.4)	70.3 (62.7–77.8)	73.6 (63.1–84.1)	74.5 (64.1–84.9)	66.0 (54.9–77.1)	70.6 (60.2–81.1)	N/a	N/a
Been to the dentist, 15+ years, per 100, 2002/03	17.0 (10.5–23.5)	21.9 (15.5–28.2)	23.5 (10.7–36.4)	32.5 (20.4–44.5)	32.9 (21.9–43.9)	25.6 (16.4–34.9)	N/a	N/a
Complementary/alternative provider use, 15+ years, per 100, 2002/03	8.2 (3.5–13)	19.9 (13.4–26.5)	8.3 (2.7–13.9)	9.6 (3.2–16.1)	6.9 (1.3–12.6)	12.0 (5.4–18.5)	N/a	N/a
Mammography, 50–64 years, per 100, 2001/02	N/a	57.0 (55.2–58.9)	N/a	57.5 (54.9–60.3)	N/a	56.4 (53.8–59.1)	N/a	66.8 (66.4–67.1)
Cervical screening, 20–69 years, per 100, 2001–2003	N/a	52.5 (51.7–53.2)	N/a	64.6 (63.4–65.7)	N/a	44.6 (43.8–45.4)	N/a	73.0 (72.6–73.1)
Blood pressure test, 15+ years, per 100, 2002/03	33.6 (22.5–44.7)	38.8 (30.7–46.9)	45.1 (32.3–57.9)	49.3 (37.5–61.2)	30.4 (19.2–41.7)	37.1 (25.9–48.2)	N/a	N/a
Cholesterol test, 15+ years, per 100, 2002/03	18.7 (9.3–28.1)	19.3 (12.9–25.7)	36.5 (23.8–49.1)	25.7 (14.5–37)	26.7 (16.1–37.3)	18.3 (8.7–28)	N/a	N/a
Diabetes test, 15+ years, per 100, 2002/03	17.0 (8.9–25.2)	19.5 (13.1–25.8)	39.4 (25.9–52.9)	28.8 (18.0–39.7)	14.6 (7.1–22.2)	17.6 (8.3–26.9)	N/a	N/a

- Among the Asian ethnic groups, Chinese are less likely than New Zealand Europeans to have a usual carer (after controlling for age, sex, deprivation and duration of residence in New Zealand).
- All Asian ethnic groups are significantly less likely to have been to a doctor or a dentist in the last 12 months than New Zealand Europeans (after controlling for age, sex and deprivation).
- All Asian ethnic groups are less likely to have seen a complementary/alternative provider than the New Zealand Europeans (after controlling for age and deprivation).
- Women of all Asian ethnic groups have lower mammography screening uptake than New Zealand European women, but the differences are not statistically significant (perhaps reflecting relatively small numbers).
- All of the Asian ethnic groups have a lower rate of cervical screening than New Zealand European women.
- Indians are more likely to have had a cholesterol test than New Zealand Europeans.
- Indians are also more likely to report having been tested for diabetes than the total population.

Risk and protective factors

The indicators selected in this section focus on key biological risk factors and key lifestyle behaviours, including: high blood cholesterol, high blood pressure, body weight, physical activity, dietary pattern and tobacco use.

Table VI: Summary indicators, risk and protective factors

Indicators		Chinese		Indian		Other Asian	
		Male	Female	Male	Female	Male	Female
High blood cholesterol, 15+ years, 2002/03	CR per 100	7.7 (2.2–13.1)	9.4 (3.8–15.1)	19.2 (9–29.4)	10.2 (3.1–17.2)	8.9 (2.9–15)	7.1 (0.6–13.7)
	MOR	1.06 (0.6, 1.88)		1.74 (0.95, 3.2)		0.98 (0.48, 2)	
High blood pressure, 15+ years, 2002/03	CR per 100	8.5 (2.8–14.1)	7.0 (2.3–11.7)	19.3 (9.4–29.2)	9.4 (2.2–16.6)	6.4 (1.5–11.3)	10.5 (3.1–18)
	MOR	0.62 (0.32, 1.22)		1.03 (0.57, 1.88)		0.72 (0.38, 1.35)	
Obese (BMI ≥ 25*) 15+ years, 2002/03	CR per 100	20.1 (12.1–28.1)	10.5 (6.0–15.1)	34.2 (22.2–46.2)	52.9 (41.4 – 64.3)	32.7 (20.3 – 45.1)	19.3 (10.7 – 27.9)
	MOR	1.08 (0.69, 1.68)		4.12 (2.65, 6.41)		2.04 (1.25, 3.33)	
Hazardous drinking (audit score > 8), 15+ years, 2002/03	CR per 100	2.3 (0.1–4.5)		6.8 (2.0–11.5)		5.4 (1.4–9.4)	
	SRR	0.1 (0, 0.2)		0.3 (0.1, 0.5)		0.3 (0.1, 0.5)	
Current smoker (daily), 15+ years, 2002/03	CR per 100	20.4 (12.5–28.2)	7.0 (2.4–11.6)	18.4 (9.7–27)	–	20.7 (11.6–29.8)	3.9 (1.2–6.6)
	MOR	0.98 (0.53, 1.8)	0.3 (0.13, 0.66)	0.7 (0.36, 1.35)	0.1 (0.03, 0.38)	0.98 (0.52, 1.86)	0.2 (0.06, 0.4)
Physical activity (150 minutes/week), 15+ years, 2002/03	Per 100	66.7 (58.3–75.0)	50.5 (40.9–60.2)	68.8 (59.4–78.3)	58.0 (47.1–69.0)	72.9 (62.0–83.7)	46.4 (35.8–57.0)
	SRR	0.9 (0.8, 1)	0.7 (0.6, 0.9)	0.8 (0.7, 0.9)	0.9 (0.7, 1.1)	0.9 (0.8, 1.1)	0.7 (0.5, 0.8)
5+ a day fruits + vegetables 15+ years, 2002/03	CR per 100	25.9 (16.4–35.4)	39.8 (29.2–50.5)	21.2 (12.1–30.2)	23.0 (13.1–32.9)	22.5 (11.8–33.1)	36.7 (24.7–48.6)
	MOR	0.77 (0.5, 1.1)		0.43 (0.3, 0.7)		0.68 (0.4, 1.1)	

* Ethnic-specific cut-point. CR: Crude rate. SRR: Standardised rate ratio. The reference group (rate ratio = 1) is the total New Zealand population. MOR: Multivariate odd ratios, model 2, controls for age, sex, deprivation and duration of residence. The reference group (odds ratios=1) is the New Zealand European population.

- After controlling for age, sex, deprivation and Asian ethnicity, longer duration of residence of Asian New Zealanders is significantly related to the likelihood of self-reporting high blood cholesterol and high blood pressure.
- Indians appear to have a higher prevalence of obesity than New Zealand Europeans after controlling for age, sex and deprivation.
- Chinese, followed by Other Asian and Indian ethnic groups, have a significantly lower prevalence of hazardous alcohol consumption than the total population.
- All Asian females are significantly less likely to be current smokers than European females (controlling for age, deprivation and duration of residence in New Zealand).
- Chinese and Other Asian females are significantly less likely to participate in at least 150 minutes of physical activity per week than their total population counterparts.
- Indians and Other Asians appear less likely to consume the recommended intake of fruit and vegetables than Europeans (controlling for age, sex and deprivation).

Socioeconomic determinants

Table VII: Summary indicators, socioeconomic determinants

Indicators	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
English language, percent, 2001	79.3	76.8	91.2	88.0	79.9	79.2	93.5	93.6
Income $20,000 or less, 15+ years, percent, 2001	59.8	65.8	42.8	56.6	52.9	61.1	37.9	55.2
Unemployment, 15+ years, percent, 2001	7.4	6.2	7.9	7.9	8.6	7.2	5.0	4.7
6th form certificate or higher, 15+ years, percent, 2001	73.6	73.0	70.1	65.3	69.9	70.4	49.3	48.1
Home ownership, 15+ years, percent, 2001	36.8	39.4	37.9	37.7	25.7	32.0	49.9	52.2

- Asian New Zealanders are more likely to have higher educational qualifications than the all New Zealand average.
- Incomes of Asian New Zealanders are lower than those of the total population.
- Overall, the unemployment rate of Asian New Zealanders is higher than the all New Zealand average.
- Asian New Zealanders are less likely than average to own their own homes.
- English-language competence is an issue for some Chinese and Other Asians, but generally not for Indians.
- The deprivation distribution of Asian New Zealanders does not differ substantively from that of the population as a whole.

Conclusion

This report reveals major differences in health outcomes and exposure to health hazards between the Chinese and Indian ethnic groups, with 'Other Asians' generally intermediate. Positive health outcomes are shown in a range of health indicators for the Asian ethnic groups, especially the Chinese ethnic group, compared to the total New Zealand population. On the other hand, the relatively high rate of obesity, type 2 diabetes and cardiovascular disease among the Indian ethnic group is concerning.

The report also reveals major differences in health and health service use between recent migrants and established communities, similar for all three Asian ethnic groups. For almost all health indicators, recent or first-generation migrants do better than long-standing migrants or the New Zealand born. This is believed to largely reflect a healthy migrant effect (ie, health selection). Over time, this health advantage is likely to dissipate, as the selection effect wears off and acculturation progresses. The relatively low utilisation of health services by Asian peoples, particularly recent migrants, will need to be carefully monitored.

The information contained in this report will be used by the health sector to help identify the health needs of Asian peoples in New Zealand. It may also help to inform Asian communities themselves, so that they can actively engage in debating their health needs and health service requirements. This report is a starting point. It provides a baseline for Asian health in New Zealand and will require regular updating.

Section 1: Introduction

Under the Health Act 1956, the Ministry of Health is charged with a statutory obligation to monitor the health of all New Zealanders. The New Zealand Health Strategy (Minister of Health 2000) adds to this obligation the goal of monitoring (and reducing) inequalities in health between ethnic groups. Much progress has been made over the past decade towards monitoring the health of Māori, Pākehā and Pacific ethnic groups (Ministry of Health 2004a; Ministry of Health 2004b). However, until now, little monitoring of the health status of Asian New Zealanders has been possible.

This report, the *Asian Health Chart Book 2006*, is intended to address this gap by collating existing health-related data for Asian peoples in New Zealand, drawn largely from Statistics New Zealand, the New Zealand Health Information Service and the 2002/03 New Zealand Health Survey. The report is intended for use by both providers and consumers of health services, and in particular to inform Asian communities themselves. It provides a barometer of the current status of the health of Asian New Zealanders as a baseline from which to monitor future trends.

Who is 'Asian' in New Zealand?

The definition of 'Asian' used in this report is that developed by Statistics New Zealand (SNZ) in 1996 (Statistics New Zealand 1996). Because this definition is employed for the analysis of census data, most state sector and health sector data users have fallen into line with it.

The SNZ definition includes people with origins in the Asian continent from Afghanistan in the west to Japan in the east, and from China in the north to Indonesia in the south. A full listing of the classification can be found in Appendix 1 (Table A-1.1). It excludes people originating from the Middle East (including Iran and Iraq), Central Asia (except Afghanistan) and Asian Russia; accordingly, these ethnic groups are excluded from this report.

The SNZ definition of 'Asian' is unique to New Zealand (Rasanathan et al 2004) and does not correspond to definitions used in other Western countries such as the United Kingdom or Australia. Moreover, it is important to note that this definition of 'Asian' includes peoples with very diverse cultures, languages, and religions – indeed, it covers more than half of the world's population.

Colloquial usage of the term 'Asian' in New Zealand also does not always correspond to the SNZ definition. Indian and other South Asian peoples may not be labelled 'Asian' (McKinnon 1996), with the term being reserved instead for East and Southeast Asian peoples. In fact, prior to the change in immigration policy in 1987 that led to a rapid increase in immigration from East and South Asia, the descriptor 'Asian' was not widely used colloquially in New Zealand.

However, ‘Asian’ is widely used as an ethnic descriptor in New Zealand today, and is generally used as a counterpoint to European (or Pākehā), Māori and Pacific as a broad ethnic grouping. Reflecting this, services have emerged over the last decade to meet the health needs of Asian New Zealanders, as seen in the story boxes included in this report.

One reason for the emergence of these services is the rapid growth of the population considered to be Asian under the SNZ definition – approximately 6.4% of the New Zealand total in the 2001 Census, and projected to increase to about 12% in 2021 (Statistics New Zealand 2005a).

The construct of an Asian ethnic grouping has provided a banner or label under which to consider the needs of these communities – a recognition or visibility that did not exist when they were classified as ‘Other’ (as Chinese and Indian peoples were for almost 140 years). There are parallels between the use of ‘Asian’ in this regard and the progress of the ‘Pacific’ category in New Zealand over the last 20 years (Bedford and Didham 2001; Macpherson 2001).

Is ‘Asian’ a meaningful ethnic grouping?

‘Asian New Zealanders’ do in fact share some experiences that extend beyond simply being not European, Māori or Pacific. Most Asian ethnic groups include both long-established communities and migrants who arrived after 1987. Many of these communities not only share common values, with a strong emphasis on family, education and community ties (Inoguchi and Newman 1997) – but also share the experience of a younger generation engaged in negotiating between these traditional values and those of the dominant culture. Migrants, in particular, share the experience of settling in a new country and acculturating to a very different way of life.

However, in using the term ‘Asian’ to describe an ethnic grouping with specific health needs, the diversity within this grouping must be borne in mind. Asian New Zealanders differ widely not only in language and culture, but also in socioeconomic status, English-language ability and settlement history in New Zealand. Because all of these factors can impact on health, there are limitations in using ‘Asian’ as a catch-all ethnic descriptor. In particular, smaller ethnic minorities may be lost by averaging within the grouping, and their specific health needs rendered invisible as a result.

This report attempts to avoid this pitfall (to the extent possible) by stratifying within the ‘Asian’ grouping along two axes: ethnicity and settlement history. We analyse three ethnic groups separately – Chinese, Indian and ‘Other Asian’ – and also analyse the data (where possible) by duration of residence in New Zealand (as a proxy for the migration effects of health selection and acculturation). By so doing we aim to avoid the pitfall of ‘averaging’ and instead identify some of the causes differentiating health status among Asian peoples.

Asian ethnic groups

The choice of ethnic groups listed above reflects the fact that the Chinese and Indian communities are the two largest. Chinese and Indian peoples have long histories of settlement in New Zealand (Leckie 1995; Ip 1996), but historically there have been few connections between the two communities. 'Chinese' and 'Indian' are not necessarily singular ethnic identities – both contain many different ethnicities. However, there are many similarities among the people they describe, and many people in New Zealand would describe themselves in such a fashion. Moreover, overseas research on these communities in other Western countries has shown similar factors that affect health within these communities; for example, increased risk of diabetes and cardiovascular disease in most Indian peoples (Kuppuswamy 2005).

The Other Asian category is a pragmatic device to enable monitoring of the health of numerically smaller Asian communities in New Zealand (included in the Statistics New Zealand definition). This approach is no less prone to the problems of averaging than the overall Asian category, yet still provides a means to report health statistics for this group instead of simply excluding them. In future editions we hope to be able to report separately on the health of at least some of the specific ethnic groups included within this very heterogeneous Other Asian category.

Migration, health selection and acculturation

The analysis by duration of residence included in this report recognises the important impacts of migration on health status. There is a very large literature on the health impacts of migration, and recent studies of Asian peoples in New Zealand confirm the potential for the migration experience to negatively affect health in the short term (Abbott et al 2000; North et al 2004).

Conversely, there is also increasing international evidence for health selection, such that migrants are typically healthier than the native-born (once acute stresses related to the migration process have passed). This selection effect dissipates as migrants reside longer in their new country (McDonald and Kennedy 2004) and of course is absent for the second (and subsequent) generations who show 'regression to the mean'. At the same time, acculturation processes are occurring, which may enhance or worsen the health of the ethnic minority group, depending on a wide range of political, social, cultural and economic circumstances involving both the group itself and the host population.

As such, settlement history may be a significant source of variation in health status among Asian New Zealanders, especially as the grouping includes people who have family histories of several generations' settlement in New Zealand along with others who have arrived very recently.

Demography of Asian New Zealanders

The demography of Asian peoples in New Zealand shows marked differences from that of the total population. There are also differences between the Chinese, Indian and 'Other Asian' ethnic groups.

As shown in Table 1, the Chinese community is approximately 100,000 strong and comprises over 40% of the Asian ethnic grouping, while the Indian community numbers approximately 60,000 (25% of the grouping), with the Other Asian group (including Koreans, Japanese, Vietnamese, Filipinos, Bangladeshis, Pakistanis and Afghanis among others) making up the remaining approximately 70,000 (30%).

Table 1: Asian ethnic group distribution, 2001 Census usually resident population

	Chinese	Indian	Other Asian	Total Asian	New Zealand total
Total number	104,580	61,803	71,076	237,459	3,737,277
Percent of total Asian	44.0%	26.0%	29.9%		
Percent of New Zealand total	2.8%	1.7%	1.9%	6.4%	

Source: Statistics New Zealand

Chinese, Indian and Other Asian peoples in New Zealand all have markedly different age distributions to that of the general population (Table 2). These ethnic groups are characterised by youthful population structures, with only 5.9% of Chinese, 3.7% of Indians and 2.5% of Other Asians being aged 65 years or over, compared to 12.1% of the New Zealand population as a whole.

Table 2: Age and sex distribution of Asian groups, 2001, percent

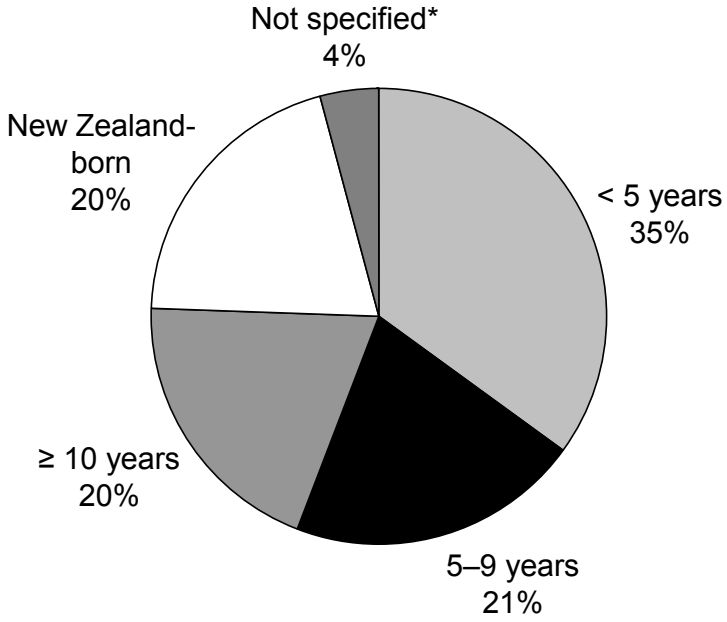
Age group (years)	Chinese		Indian		Other Asian		New Zealand total	
	Male	Female	Male	Female	Male	Female	Male	Female
0–4	6.9	6.1	8.3	8.0	7.9	6.6	7.6	6.9
5–14	14.3	12.3	16.9	16.5	19.7	15.1	16.2	14.7
15–24	26.0	22.3	16.4	17.5	23.7	20.4	13.9	13.1
25–44	28.1	33.2	36.4	37.0	32.4	40.7	29.2	30.2
45–64	18.8	20.2	18.5	17.1	14.0	14.6	22.3	21.8
65+	6.0	5.8	3.5	3.8	2.3	2.6	10.8	13.3

Source: Statistics New Zealand

The Chinese and Other Asian, but not the Indian, populations show a bulge in the 15–24 years age group, possibly reflecting relatively large student numbers.

One-fifth of Chinese New Zealanders are New Zealand-born, as shown in Figure 1. This proportion has decreased in the past decade with increasing immigration, but may now be expected to increase with changing immigration policy and increased New Zealand births. Slightly more than a third of Chinese New Zealanders have been in New Zealand less than five years.

Figure 1: Chinese in New Zealand – distribution by duration of residence, 2001

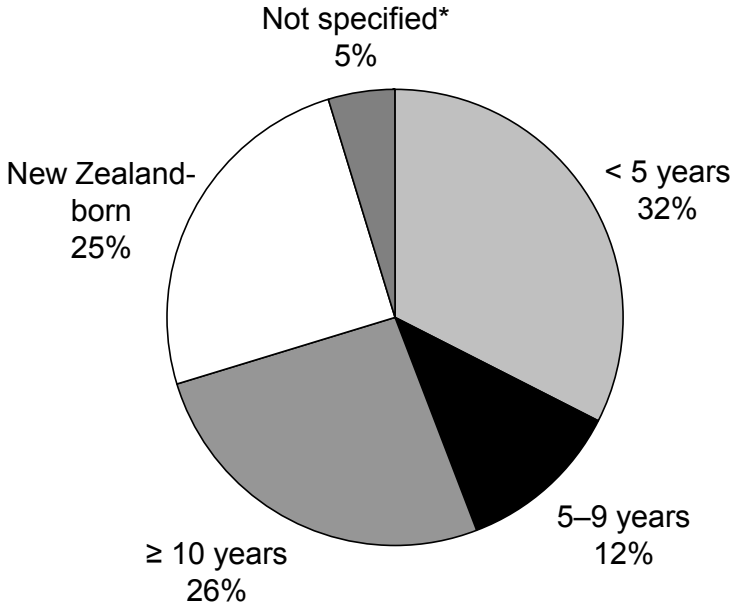


Source: Statistics New Zealand

* Note: Not specified includes birth place not stated, not elsewhere classifiable (NEC) and other from Statistics New Zealand categories.

A quarter of the Indian population is New Zealand-born, with another quarter resident in New Zealand for over 10 years, as seen in Figure 2. Similar to the Chinese population, one-third are recent migrants, having arrived in New Zealand in the last five years.

Figure 2: Indians in New Zealand – distribution by duration of residence, 2001

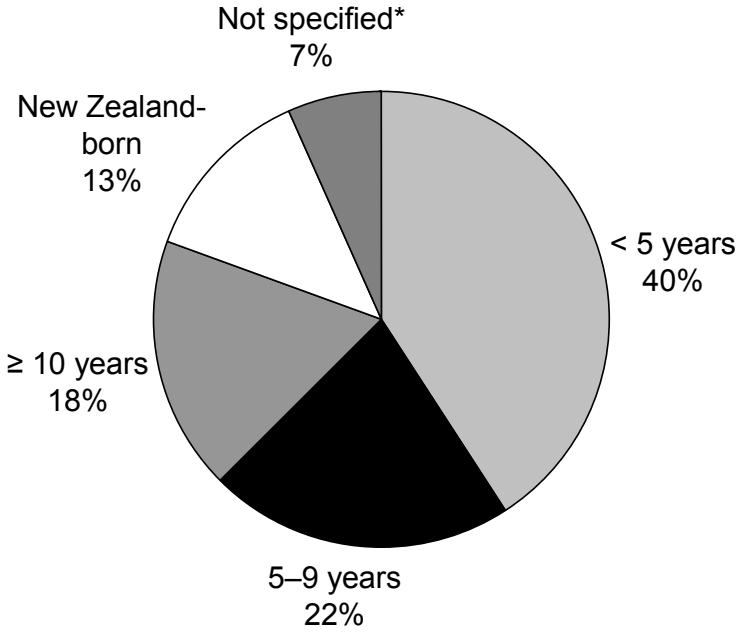


Source: Statistics New Zealand

* Note: Not specified includes birth place not stated, not elsewhere classifiable (NEC) and other from Statistics New Zealand categories.

The Other Asian population has a higher proportion of recent migrants (40% resident less than five years) and a lower New Zealand-born proportion (13%) than the Chinese and Indian groups, as seen in Figure 3.

Figure 3: Other Asians in New Zealand – distribution by duration of residence, 2001



Source: Statistics New Zealand

* Note: Not specified includes birth place not stated, not elsewhere classifiable (NEC) and other from Statistics New Zealand categories.

Structure of the report

The *Asian Health Chart Book 2006* aims to provide baseline information for planning and resourcing health services and research aimed at improving the health of Asian New Zealanders. Despite the issues of ethnic classification identified above, and the imperfections of the available data (as with any data), we hope that this report will be a useful resource for health service funders and providers, and for the communities themselves.

Reflecting this goal, interspersed among the statistical indicators presented (see Methodology chapter) are stories about innovative services that have already been developed to meet the specific needs of Asian peoples in New Zealand. These stories illustrate that the diversity of Asian communities is mirrored by the diversity of health services provided. We hope that these narratives will encourage others to further extend the range of innovative and culturally safe services available for Asian New Zealanders.

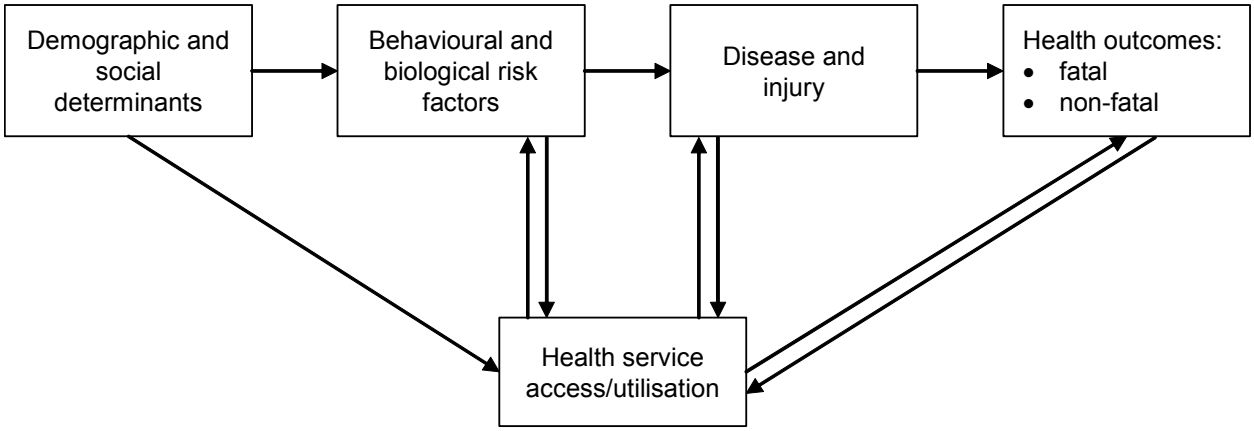
We intend to update this profile approximately every five years. As the time series extends, trend analysis will become possible and the usefulness of the statistical indicators and qualitative narratives for policy and planning should be further enhanced.

Section 2: Methodology

Selection of indicators

The selection of indicators to describe the health profile of any population needs to be based on a conceptual model of health. The framework used in this report to identify health information domains and define the relationship between them is shown below (Figure 4).

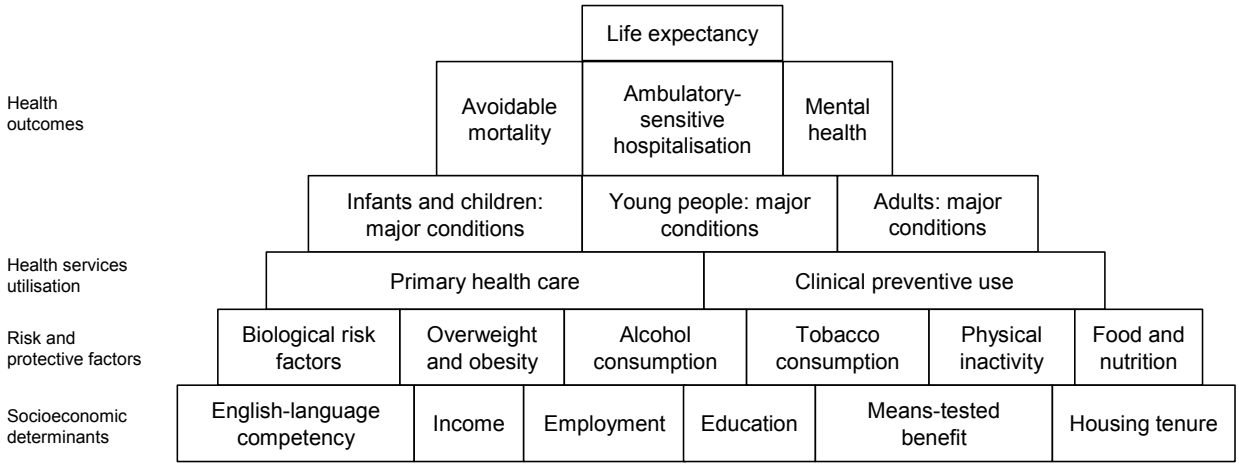
Figure 4: Conceptual model of health information domains and their relationships



Health outcomes (fatal and non-fatal) are considered to be the result of exposure to proximal risk and protective factors, which may be behavioural (lifestyle) or biological, acting through disease and injury pathways. These risk exposures are in turn shaped by distal historical, socioeconomic, cultural and political determinants, influenced by demographic forces and environmental conditions. Health services are conceptualised as a bridge between risk exposure and outcome.

For each information domain included in Figure 4, indicators were selected using conventional criteria relating to their ability to signal wider health concerns, to focus on salient health issues, to be reliably and validly monitored, and for their responsiveness to change. To the extent possible, indicators were aligned with those already selected for use at the national level in the annual monitoring report, *An Indication of New Zealanders' Health* (Ministry of Health 2004a). Indicators are ordered as shown below (Figure 5).

Figure 5: Order of presentation of indicators



Data sources

Data for the indicators were derived from multiple sources, including the population census and vital statistics, administrative databases and national health surveys.

For administrative data, five years of data centred around the year 2001 (the most recent Census year) were aggregated to provide an adequate number of counts for stable rate estimates. The most recent survey data from the 2002/03 New Zealand Health Survey were analysed. Data sources for the indicators are listed below.

Source	Data	Period
New Zealand Health Information Service (NZHIS)	Mortality collection data set – mortality National Minimum Data Set (NMDS) – hospitalisations	1998–2002 1999–2003
New Zealand Cancer Registry	Cancer registrations	1997–2001
Statistics New Zealand	Infant mortality Low birthweight	1998–2002 1999–2003
National Screening Unit (NSU)	Mammography (female breast cancer screening) Cervical screening coverage	2001–2002 2001–2003
New Zealand Health Survey (NZHS)	Risk and protective factors Health services utilisation Chronic diseases	2002/03

Details of ICD-9 codes used for administrative data are given in Appendix 1.

Population information was sourced from 2001 Census data (Statistics New Zealand). The total census count (multiplied by 5) was used as denominator for most rates.

Statistical methods

Variable definitions

Ethnicity

Total response output was used to categorise ethnicity in this report. A person is counted more than once if he/she self-reports more than one ethnic identity. The ethnic groups included are Chinese, Indian and Other Asian (combining Southeast Asians and all other Asians). The Statistics New Zealand ethnic composition codes are provided in Appendix 1.

Age groups

Indicators are stratified (where possible) into the following life-cycle stages:

children (0–14 years) (sometimes disaggregated to 0–4 and 5–14 years)

young people (15–24 years)

young adults (25–44 years)

middle-aged adults (45–64 years)

older adults (65+ years).

Estimation of rates

Most of the indicators are presented as crude rates and/or age-specific rates in tabular format. The crude and age-specific rates provide a measure of disease burden or risk, or health service utilisation, for each Asian ethnic group

Age-specific rates can be compared across ethnic groups, but crude rates cannot because the groups differ in their age distributions. Instead, direct age-standardised rate ratios are used to enable summary comparisons between ethnic groups, as well as between each Asian ethnic group and the total New Zealand population. Note that standardised rates are not meaningful in themselves (and so are not shown) – their sole purpose is for comparison, so only the *ratio* of standardised rates is meaningful (and usually only this statistic is shown). The reference population used for age standardisation is the WHO World Population (see Appendix 1, Table A1.1).

Rates were not calculated for counts that were less than 5 (New Zealand Health Information Service data) or less than 10 (2002/03 New Zealand Health Survey data).

Where possible, rates are provided by duration of residence in New Zealand, to reflect processes of acculturation and selection. Three 'duration of residence' categories are used for each Asian ethnic group: less than five years, five to nine years, and ten years or more plus New Zealand-born.

For most rates and rate ratios, 95% confidence intervals are provided. These have been calculated using standard parametric techniques.

Regression analysis

Logistic regression models were constructed to examine the association between various health outcomes and Asian ethnicity, adjusting for multiple covariates including age, sex, deprivation (NZDep2001 quintiles) and duration of residence in New Zealand (less than five years, five to nine years, ten or more years or New Zealand-born).

All explanatory variables were kept in the model, even if not statistically significant, to ensure that the model was controlling for these variables. For each outcome variable two models were built: with and without 'duration of residence' in New Zealand.

Both step-up (running a main effects model with no interaction terms first and adding interaction terms) and step-down (starting with a full model with all interaction terms) models were run. In both cases interaction terms were removed if they were non-significant (that is, their overall Wald p-value was > 0.05).

For each final model, standard diagnostic tests (including Hosmer-Lemeshow goodness of fit test and Wald tests) were run to ensure that model assumptions were met and that the fit was satisfactory.

A note on interpreting rates

Crude rates indicate the actual level of the indicator in each Asian ethnic group, and so are meaningful in themselves. However, comparison of crude rates across ethnic groups or with the all New Zealand rate is subject to confounding by age, because the groups being compared have differing age structures.

Instead, standardised rate ratios are provided to enable such comparisons to be made free of age confounding.

Note that it is only the *ratio* of the age-standardised rates that is meaningful, not the standardised rates themselves (which, therefore, are generally not shown).

Section 3: Health Outcomes

Health outcome or health status indicators make up the top three tiers of the 'indicator pyramid' (Figure 5, page 8). Summary measures of population health, capturing health over the whole of the life course, are presented first. Key indicators tapping major health outcomes for each life-cycle stage are then presented in turn from childhood to old age.

Whole of life

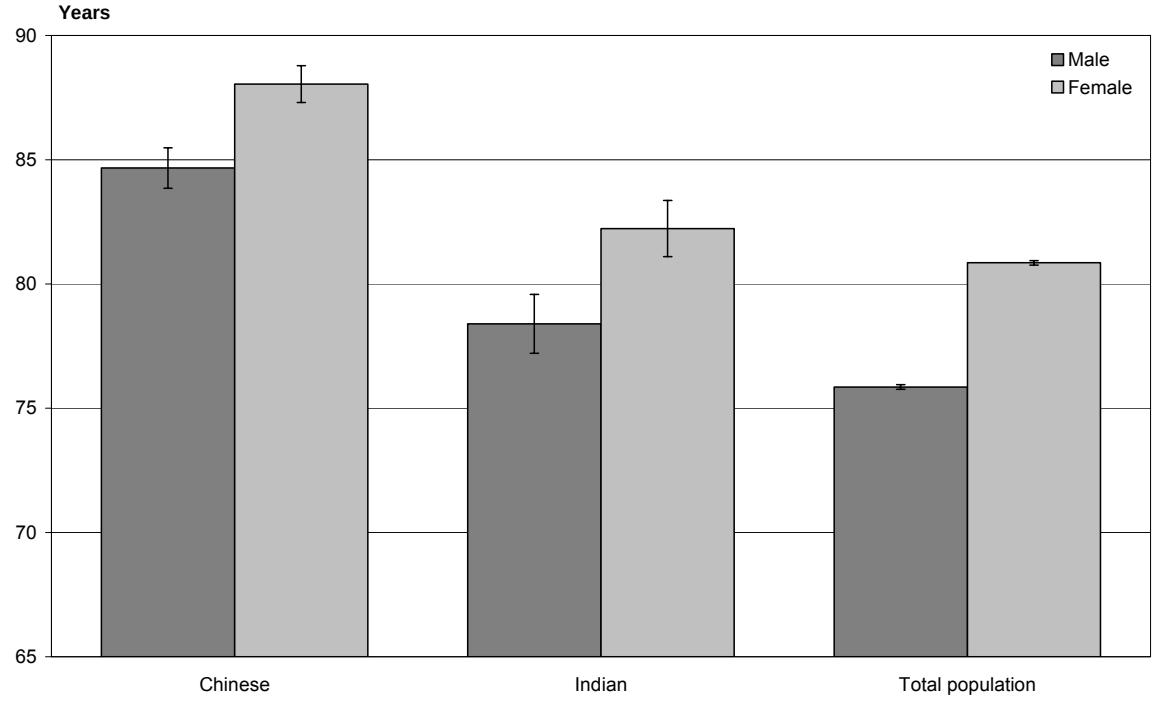
Four indicators have been selected to capture health across the life course as a whole: life expectancy, avoidable mortality, ambulatory-sensitive hospitalisations and mental health. The highest-level summary measure of population health – health expectancy – could not be included because of data limitations.

Life expectancy

Life expectancy at birth is the average number of years a child born now could expect to live if current mortality rates persisted for the whole of its life. Life tables for Asian ethnic groups were constructed by Public Health Intelligence because Statistics New Zealand does not produce 'official' life tables for these ethnic groups.

Note that life expectancies can be validly compared between populations because this statistic is not affected by differences in population age structure.

Figure 6: Life expectancy at birth, by ethnic group and sex, 1999–2003*



Source of base data : Statistics New Zealand

* Mortality rates for the Other Asian group did not display a pattern suitable for construction of a life table, so no estimate of life expectancy is available for this group.

- Chinese males and females have a much longer life expectancy than the total population: 8.8 years and 7.1 years higher, respectively.
- Indian males and females have a moderately longer life expectancy than the total population: 2.5 years and 1.3 years higher, respectively.
- The gender difference in life expectancy at birth is 5.0 years for the total population, but only 3.4 years for the Chinese ethnic group and 3.8 years for the Indian ethnic group.
- The long life expectancies of the Chinese and Indian ethnic groups (especially the former) may reflect (at least in part) selection processes – the so-called 'healthy immigrant' and 'unhealthy emigrant' effects.

Avoidable mortality

The concept of avoidable mortality includes deaths that are preventable though population-based interventions as well as those responsive to preventive and curative interventions at an individual level. An age threshold of 75 years is applied because of the high prevalence of co-morbidity at older ages.

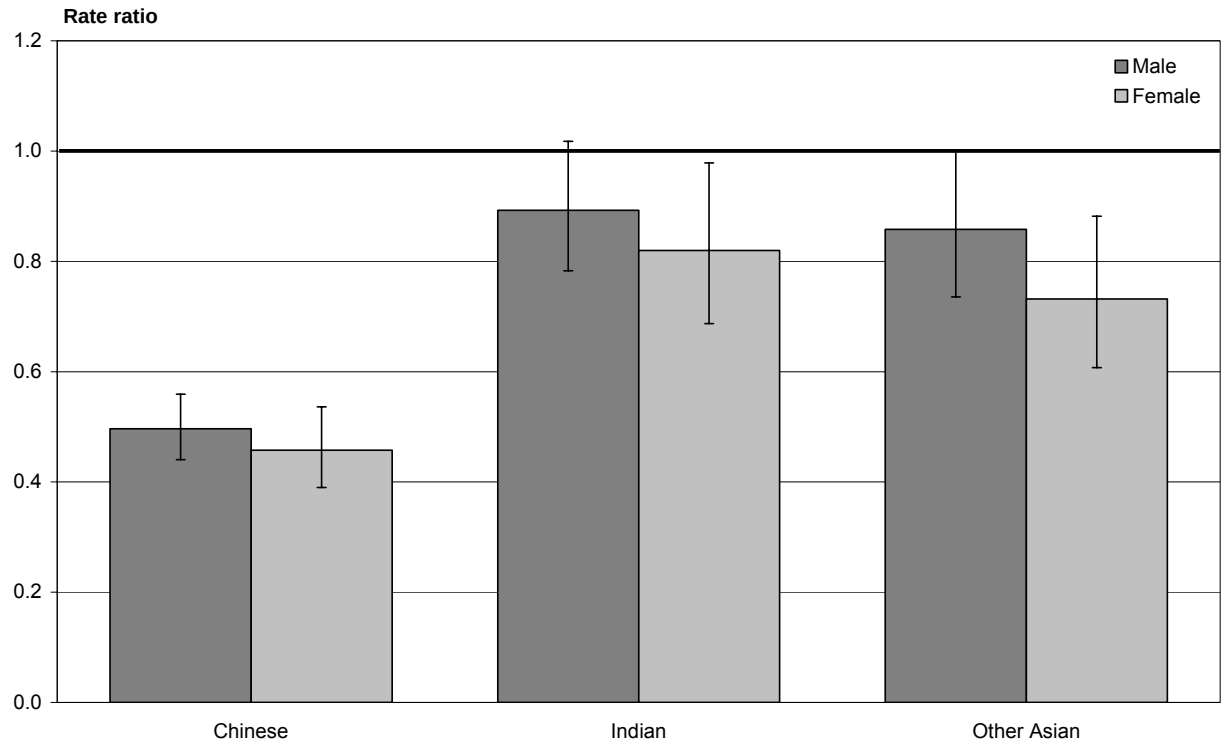
Table 3: Crude rate (per 100,000) of avoidable mortality, by Asian ethnic group and sex, 1998–2002

	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Avoidable mortality	123.6 (109.5–138.9)	65.1 (55.4–75.9)	174.0 (153.1–196.8)	93.3 (78.2–110.5)	137.1 (119.6–156.5)	73.7 (62.2–86.7)

Source of base data: New Zealand Health Information Service, Ministry of Health

Note: The crude rate for the total population has not been presented so as to avoid invalid comparisons.

Figure 7: Standardised rate ratios* for avoidable mortality, by Asian ethnic group and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population.

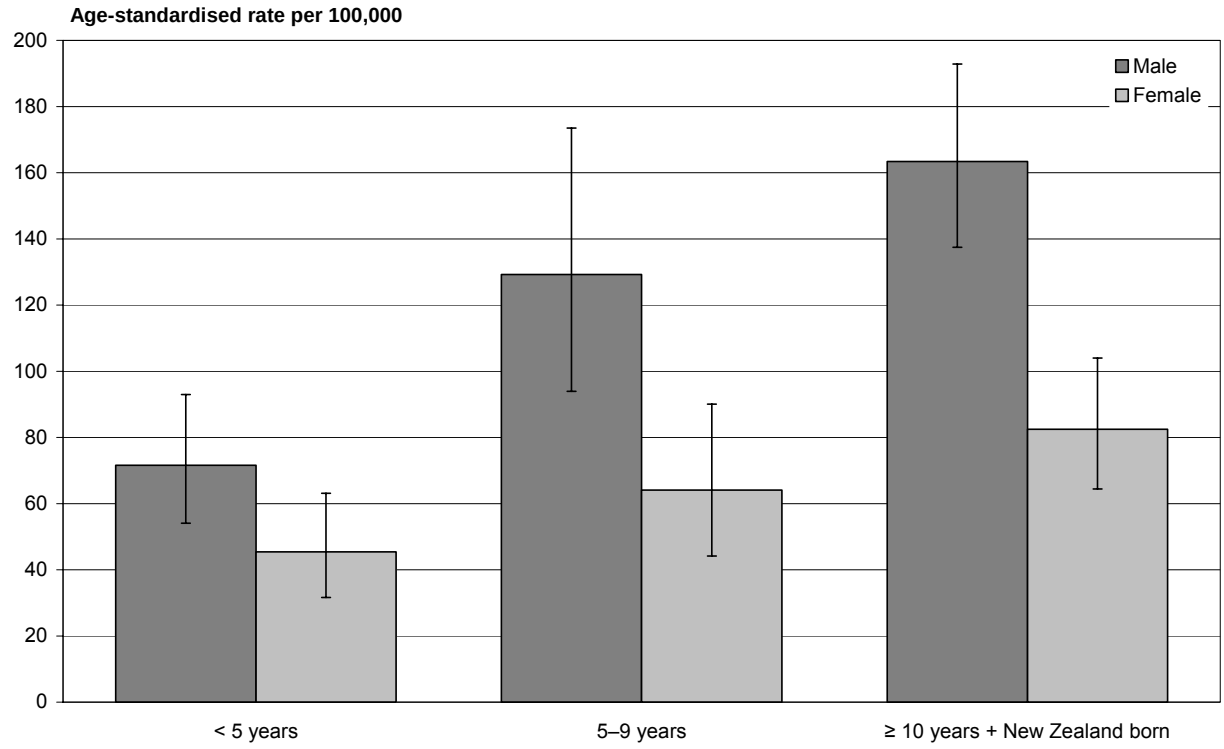
* The reference group (rate ratio = 1) is the total New Zealand population.

- The avoidable mortality rate is significantly lower for Chinese, Indian and Other Asian females than the total population, and almost so for males.
- Among the Asian ethnic groups, avoidable mortality is significantly lower for Chinese than for Indian or Other Asian ethnic groups (both sexes).

Note: Crude rates cannot be compared between ethnic groups (or with the all New Zealand rate) because the groups differ in their age distributions. Standardised rate ratios enable comparisons between Asian ethnic groups and the all New Zealand rate (reference group), as well as between one ethnic group and another.

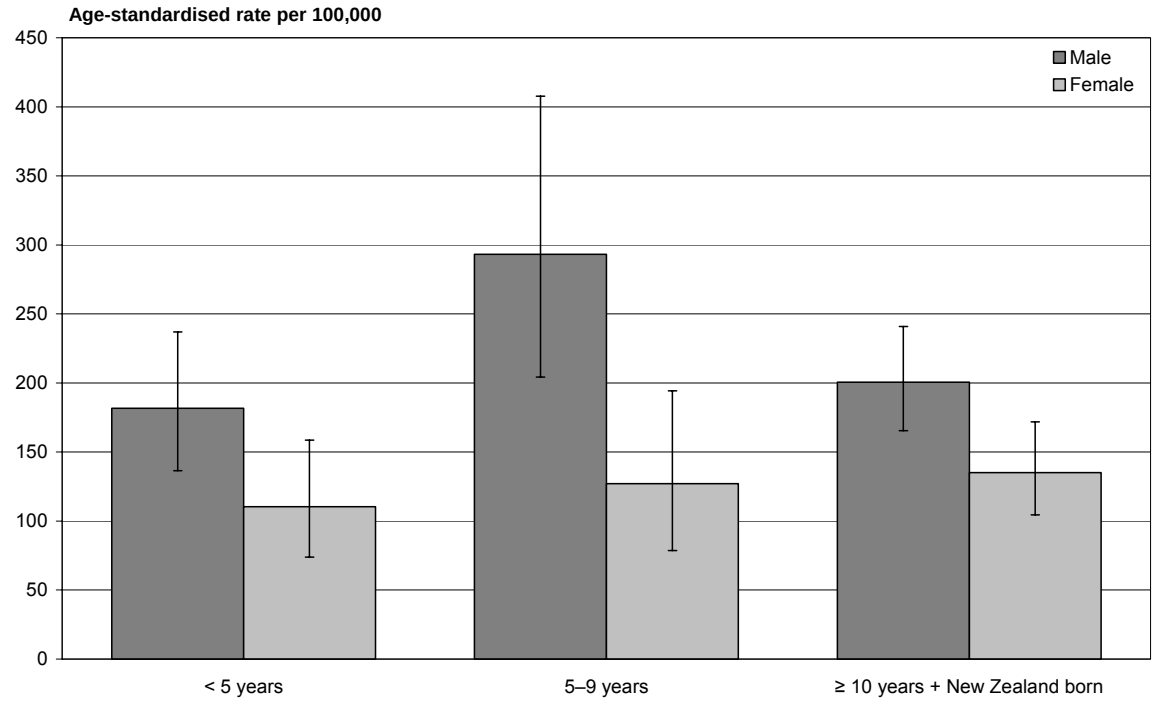
Duration of residence

Figure 8: Age-standardised avoidable mortality rates (per 100,000) for Chinese, by duration of residence and sex, 1998–2002



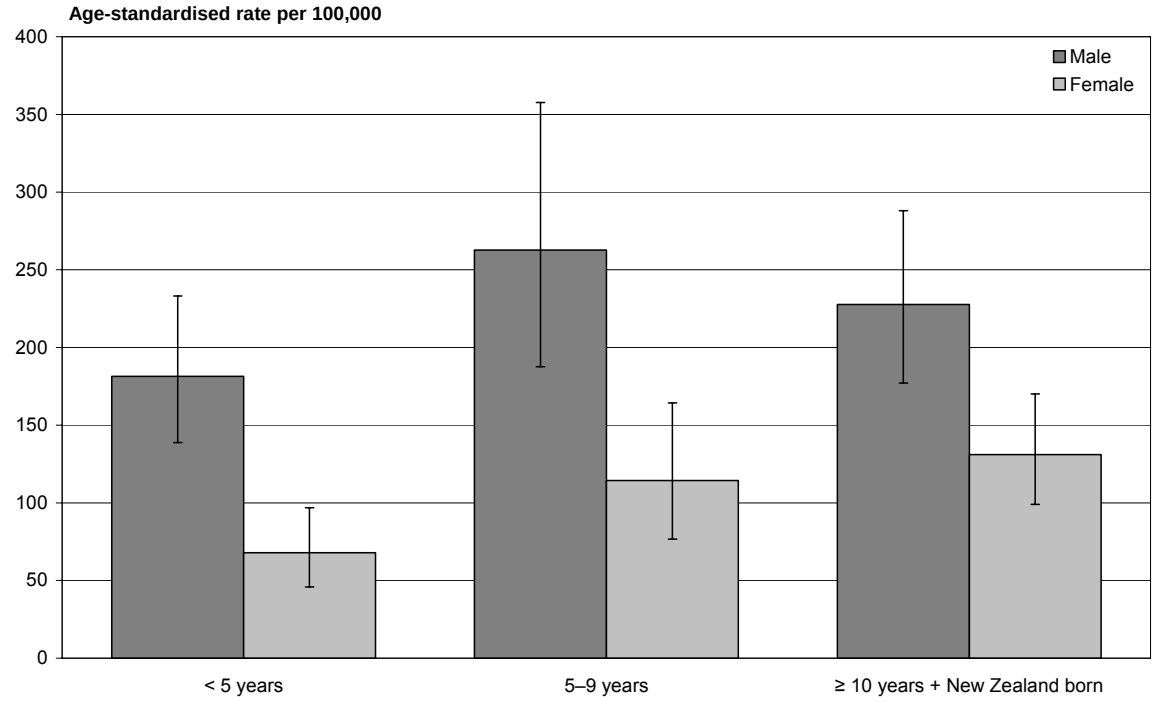
Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population.

Figure 9: Age-standardised avoidable mortality rates (per 100,000) for Indians, by duration of residence and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population.

Figure 10: Age-standardised avoidable mortality rates (per 100,000) for Other Asian by duration of residence and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population.

- There seems to be a dose-response relationship between duration of residence (a proxy for selection and/or acculturation effects) and avoidable mortality among the Chinese ethnic group, and perhaps among Other Asian females.
- This finding of worsening health (increasing avoidable mortality) with duration of residence and generation suggests that the life expectancy advantage of Chinese New Zealanders over other ethnic groups may erode over time.

Ambulatory-sensitive hospitalisations

Ambulatory-sensitive hospitalisations are hospitalisations that result from diseases and conditions sensitive to interventions delivered through primary health care, and that could therefore potentially be avoided by improving primary health care access and/or quality. An age threshold of 75 years is applied because of the high prevalence of co-morbidity at older ages.

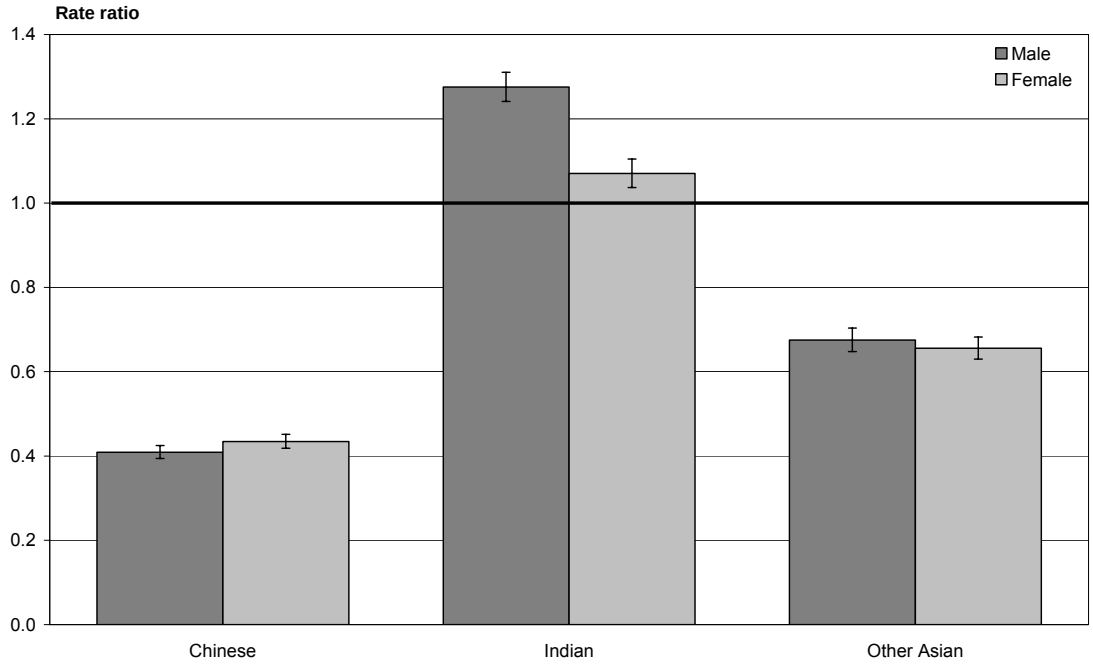
Table 4: Crude rate (per 100,000) of ambulatory-sensitive hospitalisations, by Asian ethnic group and sex, 1999–2003

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
Ambulatory-sensitive hospitalisations	1207.1 (1162.4–1253.1)	1119.1 (1077.9–1161.6)	3734.5 (3635.6–3835.3)	2754.5 (2669.3–2841.7)	1734.8 (1670.8–1800.7)	1515.5 (1461.6–1570.9)

Source: New Zealand Health Information Service

Note: Crude rate for the total population has not been presented so as to avoid invalid comparisons.

Figure 11: Standardised rate ratios* for ambulatory sensitive hospitalisations, by Asian ethnic group and sex, 1999–2003



Source: New Zealand Health Information Service

Note: Age-standardised to WHO world population.

* The reference group is the total New Zealand population.

- Chinese, followed by Other Asians, have significantly lower ambulatory-sensitive hospitalisation rates than the total population, while Indians have a significantly higher ambulatory-sensitive hospitalisation rate (both sexes).
- The latter finding suggests a difference in primary health care access or utilisation by Indians compared to other New Zealanders.
- Among the Indian ethnic group (but not the remaining groups), males have a significantly higher rate of ambulatory-sensitive hospitalisation than females.

Mental health

Reliable estimates of the prevalence of psychiatric morbidity (eg, anxiety and depressive disorders) in the Asian population are not currently available for New Zealand.[1] In the absence of such information, we use three scales from the eight-scale SF-36 (a standardised health status instrument included in the 2002/03 New Zealand Health Survey): mental health, vitality and social functioning.

Scores for each of the three scales are expressed on a 0–100 scale, with higher scores representing better self-perceived health. Note that concepts of mental health are strongly culture-specific, so estimates based on self-report should be interpreted with care.

All-age suicide mortality is also used as an indicator of mental health, given the strong association between suicide and depression.

SF-36

Table 5: Mean SF-36 scores by Asian ethnic group and sex (age-standardised), 2002/03

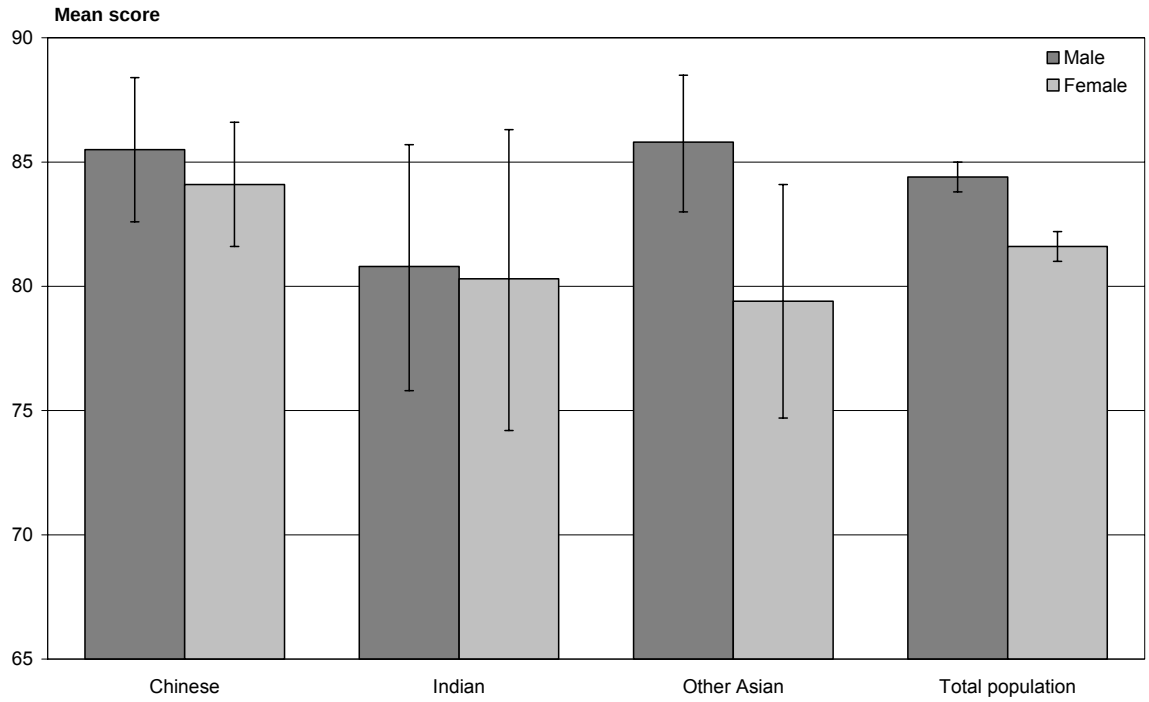
	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
SF-36 mental health	84.8 (82.2–87.5)	83.6 (81.2–85.9)	81.5 (77.1–86)	81.9 (77.8–85.9)	85.1 (82.2–87.9)	80.5 (77.1–83.9)
SF-36 vitality scale	75.1 (71.7–78.5)	70.7 (67.6–73.8)	72.9 (67–78.7)	69.7 (65.6–73.8)	77.3 (73.4–81.2)	67.9 (63.2–72.5)
SF-36 social functioning	95.3 (92.5–98.2)	94.2 (91.3–97.2)	94.4 (90.8–98.1)	94.7 (92.1–97.3)	91.0 (85.8–96.1)	90.2 (84.5–95.8)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: Age-standardised to WHO world population.

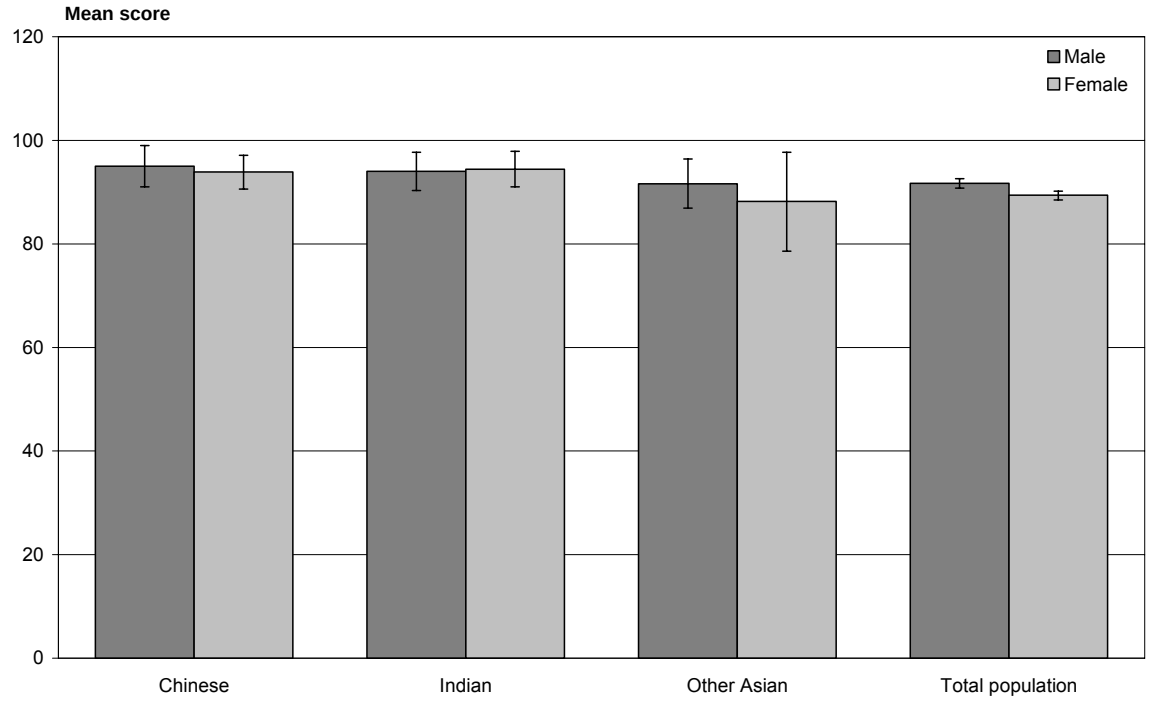
[1] The National Mental Health and Well-being Survey, Te Rau Hinengaro, fielded in 2004, will provide such data for other population groups in New Zealand. It will not produce useful estimates for Asian ethnic groups, however, due to sample size limitations.

Figure 12: Mean SF-36 mental health scores, by ethnic group and sex (age-standardised), 2002/03



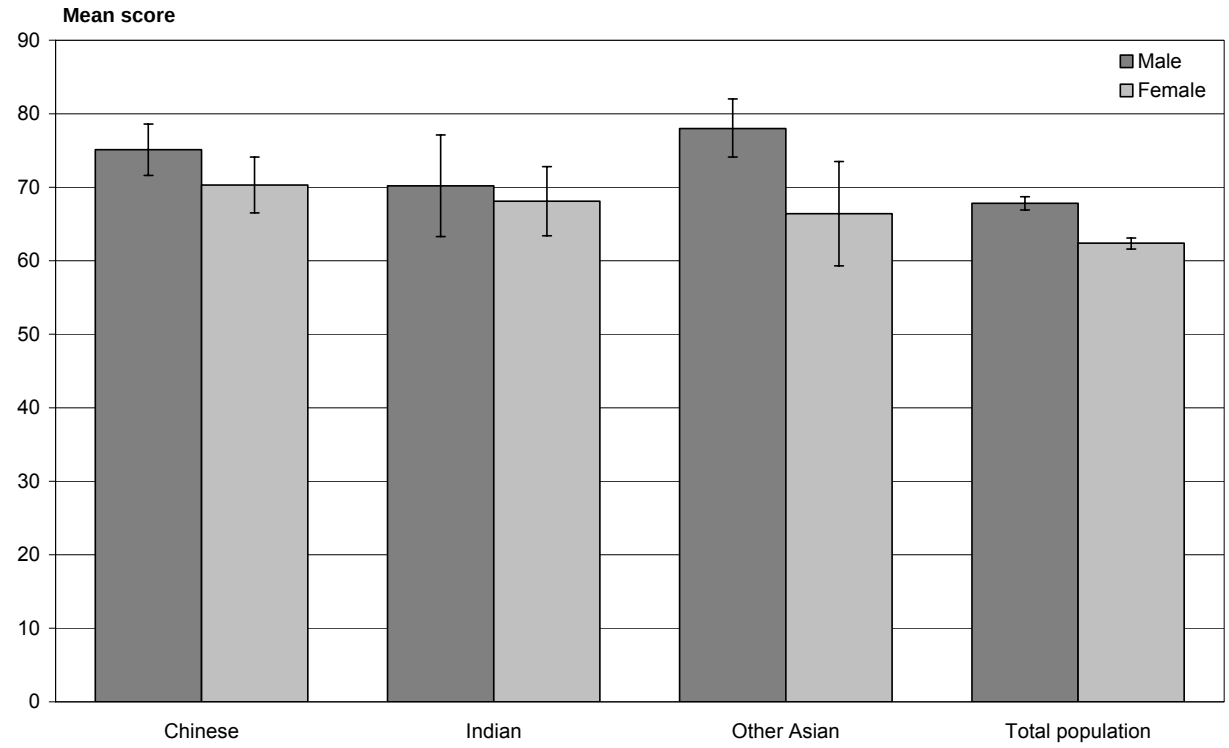
Source: 2002/03 New Zealand Health Survey, Ministry of Health
Note: Age-standardised to WHO world population.

Figure 13: Mean SF-36 social functioning scores, by ethnic group and sex (age-standardised), 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health
Note: Age-standardised to WHO world population.

Figure 14: Mean SF-36 vitality scores, by ethnic group and sex (age-standardised), 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health
Note: Age-standardised to WHO world population.

- Self-reported level of good mental health (more precisely, absence of psychological distress), as defined by a mean score on the SF-36 mental health scale, appears lower for Indian (both sexes) and Other Asian females, and slightly higher for Chinese (both sexes) and Other Asian males than for the total population, but these differences are not statistically significant.
- Self-reported social functioning, as defined by a mean score on the relevant SF-36 scale, is similar for all three Asian ethnic groups.
- Males have better self-reported mental health and social functioning than females among all groups except the Indian ethnic group (where there are no significant gender differences in mean scores on these scales).
- Vitality scores (a measure of positive mental and to a lesser extent physical wellbeing) are higher among all the Asian ethnic groups than the total population, with males having higher mean vitality scores than females in all ethnic groups.

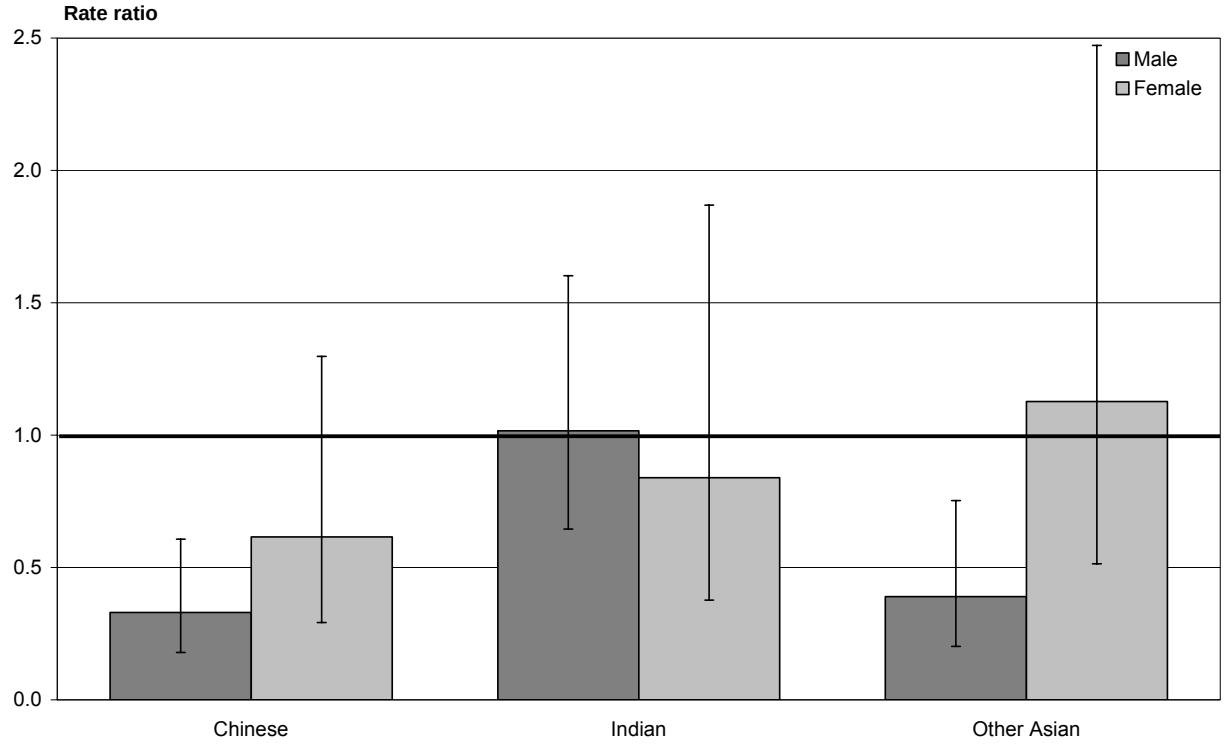
Suicide

Table 6: Crude rate (per 100,000) of all-age suicide mortality, by Asian ethnic group and sex, 1998–2002

	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
All-age suicide mortality	7.4 (4.3–11.8)	4.4 (2.2–7.8)	21.9 (15.0–30.9)	6.2 (2.8–11.8)	9.3 (5.2–15.4)	6.6 (3.5–11.2)

Source: New Zealand Health Information Service, Ministry of Health

Figure 15: Standardised rate ratios* for all-age suicide mortality, by Asian ethnic group and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese and Other Asian males have all-age suicide mortality rates approximately half those of the total population.
- Chinese females may also have lower suicide rates than the all New Zealand average, but the confidence interval is very wide (reflecting small numbers).
- Indian males and females, and Other Asian females, have similar rates to the total New Zealand population, but note that the confidence intervals are wide, especially for Indian and Other Asian females.

Summary

- Life expectancy is much higher for the Chinese ethnic group, and slightly higher for the Indian ethnic group, than the all New Zealand average.
- Avoidable mortality is significantly lower for Chinese, Indian and Other Asian ethnic groups than for the total population.
- The avoidable mortality rate worsens for Chinese New Zealanders who were born in New Zealand or have lived in New Zealand for longer periods.
- Chinese and Other Asians have significantly lower ambulatory-sensitive hospitalisation rates than the total population, while Indians have a significantly higher ambulatory-sensitive hospitalisation rate.
- Vitality scores (an SF-36 scale tapping positive mental wellbeing) are higher among all the Asian ethnic groups than the total population.
- SF-36 mental health (a measure of psychological distress) and social functioning mean scale scores are similar to the total population for all Asian ethnic groups.
- Chinese and Other Asian males have age-standardised suicide mortality rates approximately half that of the total population.

Asian mental health promotion

The Mental Health Foundation has been involved in key initiatives over the last two years aimed at helping to address the mental health promotion needs of Asian youth, adults and older people, in the Auckland region. Initiatives include:

- development of a You're Not Alone Chinese youth mental health promotion brochure series
- development of a Chinese Youth Mental Wellbeing train the trainer workshop
- scoping of a Chinese Parenting Programme
- needs analysis around the advocacy needs of Korean older people.

The target population for the You're Not Alone resource series is young Chinese people aged 14–25, including international students. The dynamic four-brochure series covers feeling lonely, feeling stressed, feeling sad and depressed, and feeling angry. The initiative was an innovative collaboration between health professionals, the community and business, with some of the funding being provided by a Chinese business with a largely Chinese youth clientele. The brochures were written and designed by Chinese young people. The resource series has been extremely well received, with requests already being made for the series to be adapted for other Asian cultures and made available in other Asian languages.

Following the piloting of the Chinese Youth Mental Wellbeing workshop, there was significant interest expressed by agencies in the Auckland region wanting to both receive the training and deliver it.

The outcome of the Korean Older Peoples Advocacy Project has been the proposed development of a Korean Buddy Programme in collaboration with the Senior College and a Korean Church in Auckland. The development of this programme is currently under way.

The Chinese Parenting Programme Scoping Report provides some valuable information on the needs of Chinese parents, which will be useful for agencies working in this area.

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Infants and children (0–14 years)

Major issues in infant and child health for Asian peoples (and other ethnic groups) include infant mortality, low birthweight, injury and asthma.

Infant mortality

The infant mortality rate (IMR) is the number of deaths in the first year of life per 1000 live births. The IMR can be broken down into neonatal (deaths in the first 28 days of life) and post-neonatal (deaths from the 29th to 365th day of life) components.

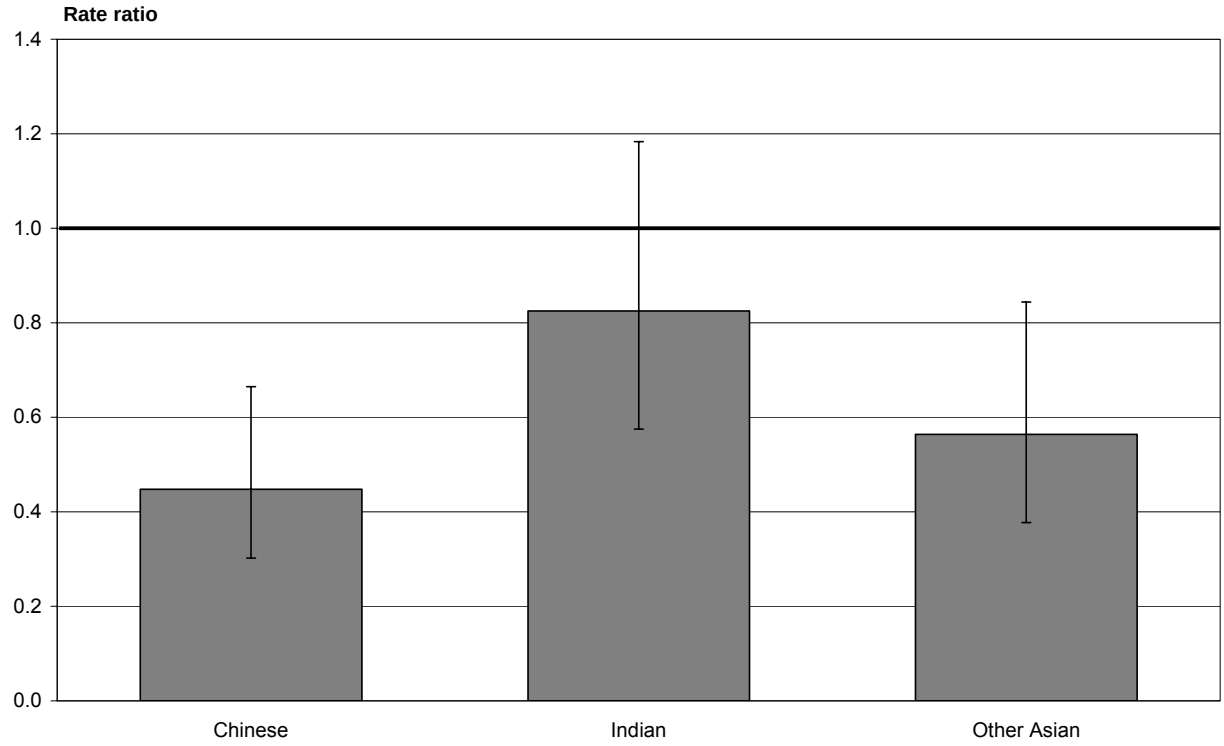
Infant mortality rate

Table 7: Infant mortality rate (per 1000), by ethnic group, 1998–2002

	Chinese	Indian	Other Asian	Total population
Infant mortality	2.5 (1.6–3.7)	4.7 (3.2–6.7)	3.2 (2.0–4.8)	5.7 (5.4–5.9)

Source: New Zealand Health Information Service, Ministry of Health

Figure 16: Rate ratios* for infant mortality, by Asian ethnic group, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

* The reference group (rate ratio = 1) is the total New Zealand population.

- The infant mortality rate is significantly lower for Chinese and Other Asian ethnic groups than the total population – about half the latter.
- The Indian IMR is not significantly lower than the all New Zealand average.

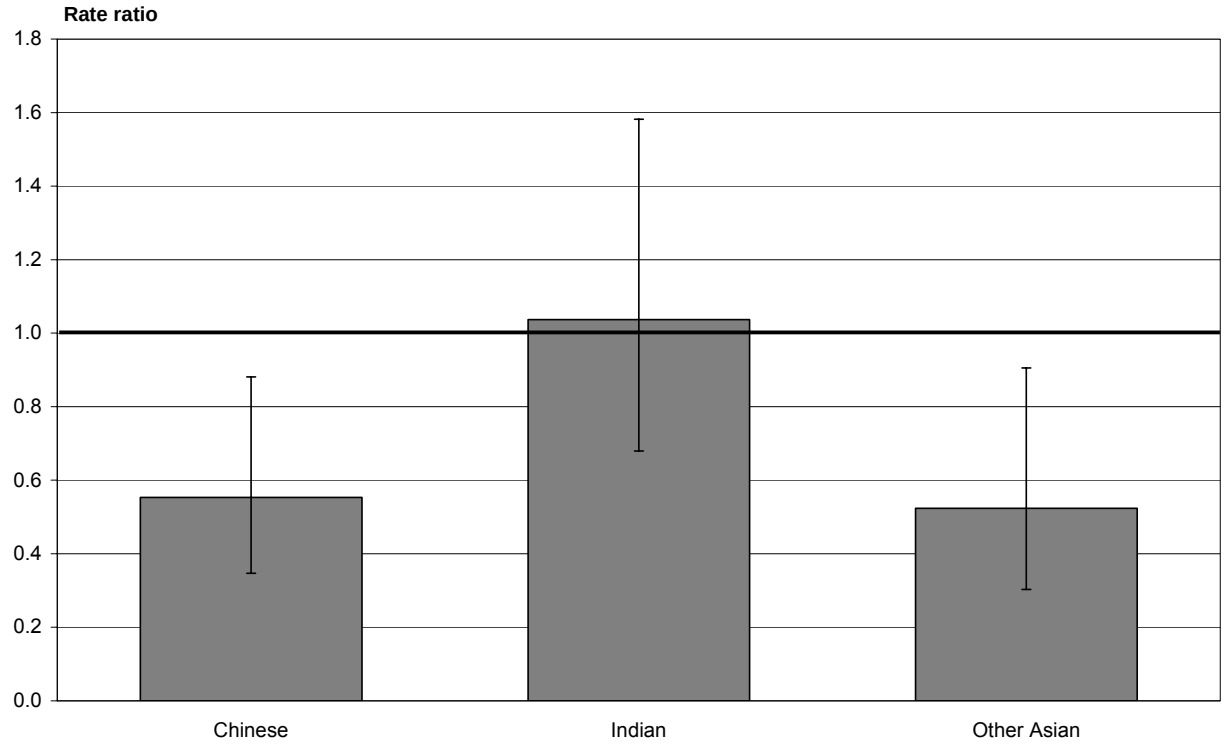
Neonatal and post-neonatal mortality rates

Table 8: Neonatal and post-neonatal mortality rate (per 1000), by ethnic group, 1998–2002

	Chinese	Indian	Other Asian	Total population
Neonatal mortality	1.8 (1.1–2.9)	3.4 (2.1–5.2)	1.7 (0.9–3.0)	3.3 (3.1–3.5)
Post-neonatal mortality	0.7 (0.3–1.5)	1.2 (0.5–2.5)	1.5 (0.7–2.6)	2.4 (2.2–2.5)

Source: New Zealand Health Information Service, Ministry of Health

Figure 17: Rate ratios* for neonatal mortality, by Asian ethnic group, 1998–2002

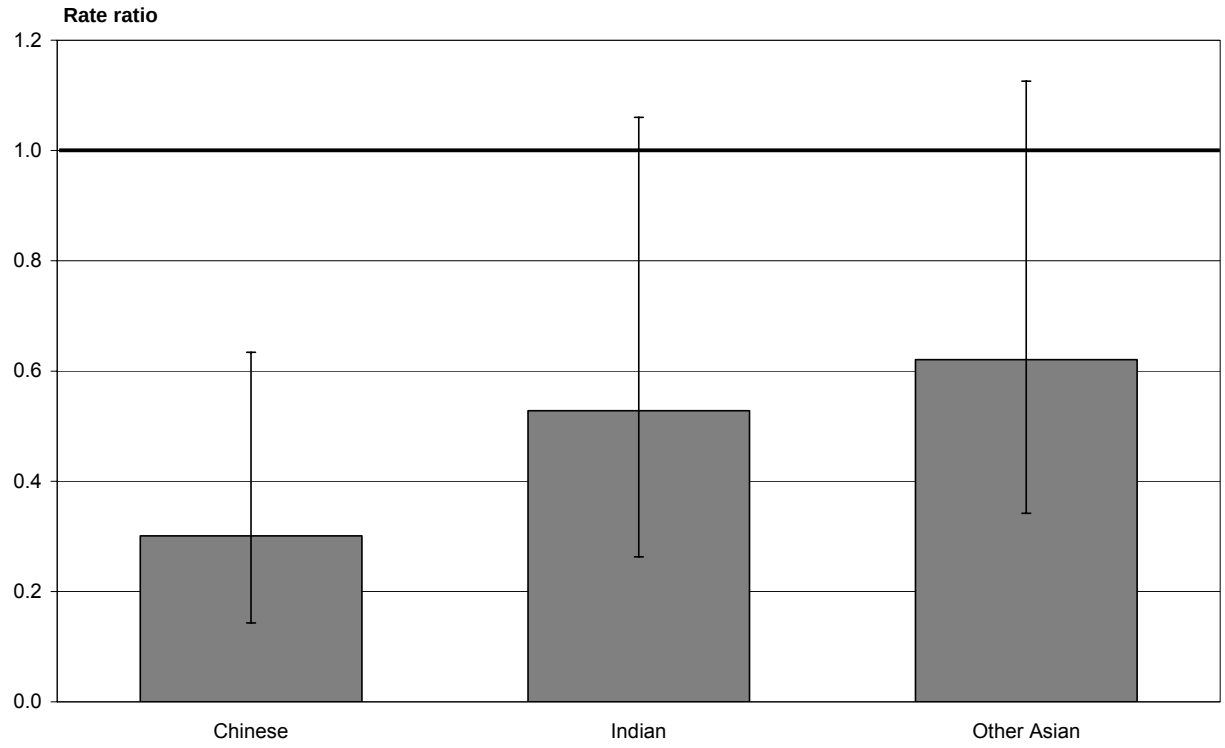


Source: New Zealand Health Information Service, Ministry of Health

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese and Other Asian infants have a significantly lower neonatal mortality rate than the total population.
- There was no difference in the neonatal mortality rate between Indian infants and the total population.

Figure 18: Rate ratios* for post-neonatal mortality, by Asian ethnic group, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

* The reference group (rate ratio = 1) is the total New Zealand population.

- The post-neonatal mortality rate is lower for Chinese (and possibly Indian and Other Asian) infants than for the total population.
- The very low post-neonatal mortality of Chinese infants is particularly noteworthy (less than one-third the all New Zealand rate).

Low birthweight

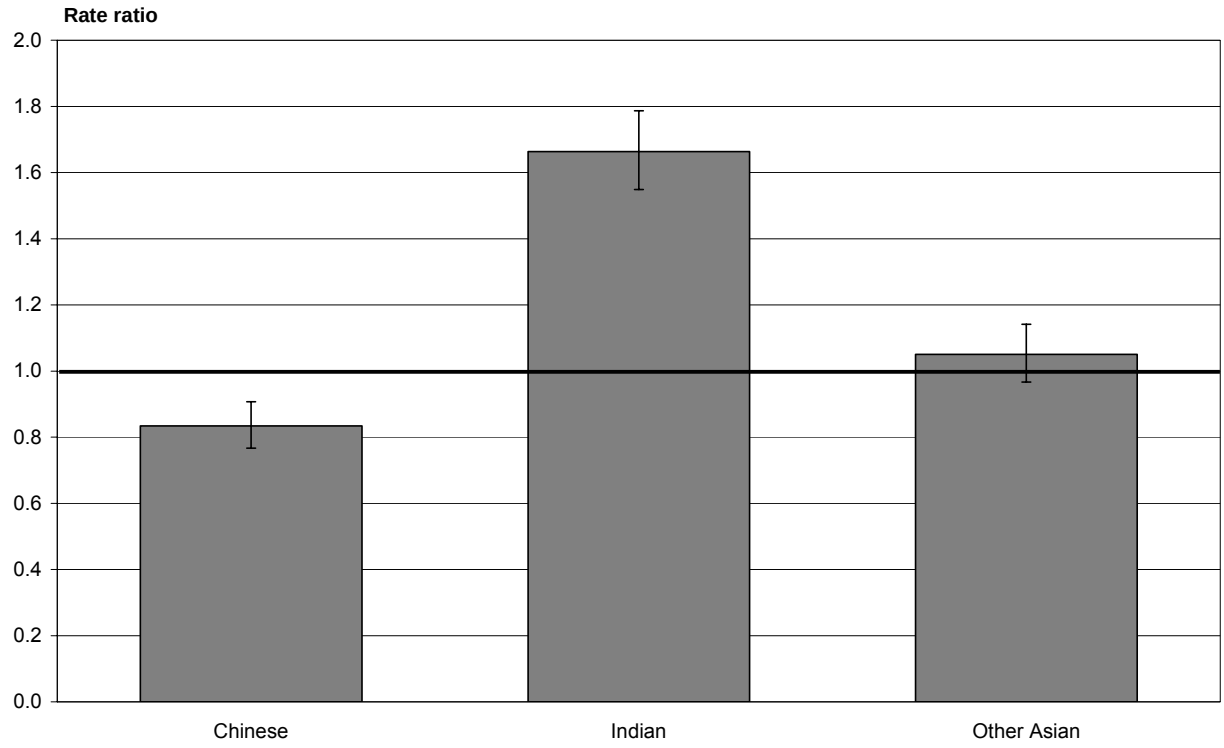
Low birthweight is defined as a birthweight less than 2500 grams, and is correlated with infant mortality and other poor health outcomes. Low birthweight may be due to premature birth or to intrauterine growth retardation.

Table 9: Rate (per 100 live births) of low birthweight, by ethnic group, 1999–2003

	Chinese	Indian	Other Asian	Total population
Low birthweight	5.5 (5.0–6.0)	10.9 (10.2–11.7)	6.9 (6.3–7.5)	6.6 (6.5–6.7)

Source: New Zealand Health Information Service, Ministry of Health

Figure 19: Rate ratios* for low birthweight, by Asian ethnic group, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

* The reference group (rate ratio = 1) is the total New Zealand population.

- Low birthweight is significantly less prevalent among Chinese newborns than among the total population.
- Indian newborns are about 70% more at risk of low birthweight than the total population. The explanation for the finding (whether it reflects higher rates of premature birth or intrauterine growth retardation, or at least in part an inappropriate birthweight norm) is unclear.
- Other Asian newborns have similar low birthweight rates to the total population.

Unintentional injuries

Unintentional injuries (accidental injuries) include injuries due to causes such as motor vehicle collisions, falls, drowning, burns and poisoning, but not medical misadventures or complications. Because of different causal compositions, we present rates separately for pre-schoolers and school-age children. Hospitalisation rates are preferred to mortality rates as a more sensitive and comprehensive measure of serious injury.

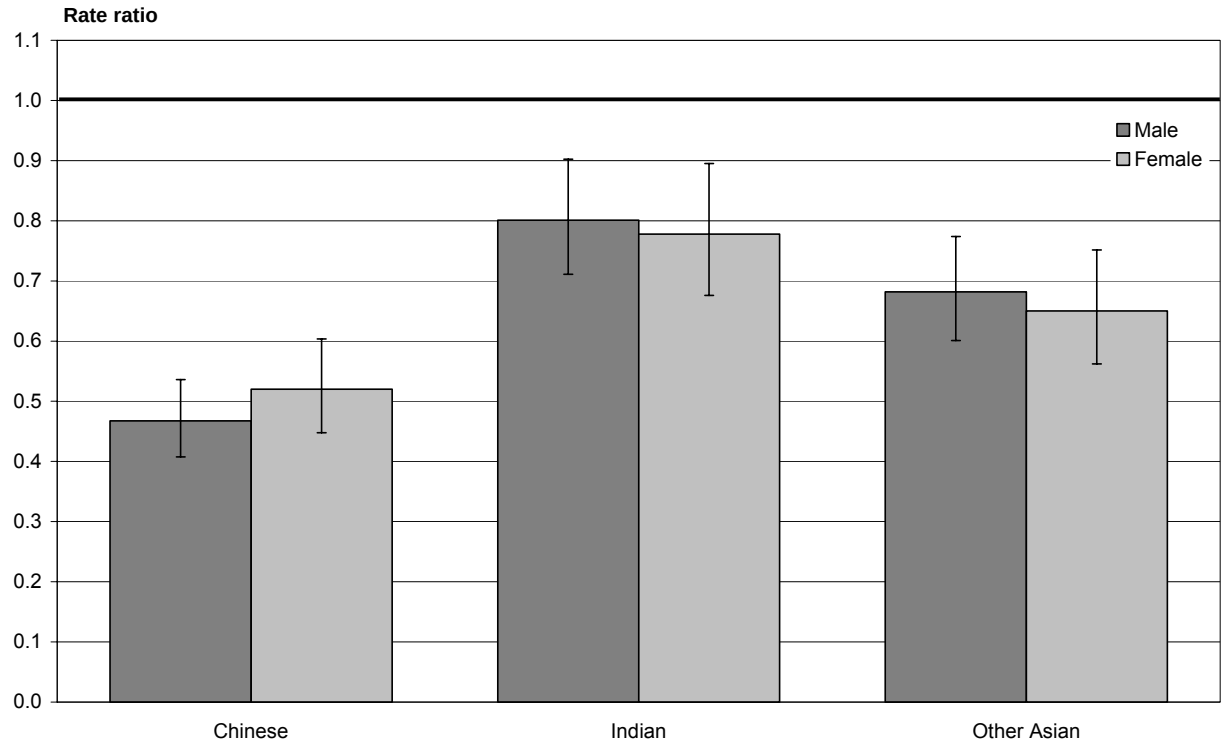
Pre-schoolers (0 to 4 years)

Table 10: Rate (per 100,000) of unintentional injury hospitalisations (0–4 years), by ethnic groups and sex, 1999–2003

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Unintentional injuries hospitalisation (0–4 years)	1290.3 (1119.3–1480.1)	1123.0 (961.9–1303.4)	2216.7 (1959.7–2498.1)	1673.1 (1446.0–1925.9)	1867.9 (1638.6–2120.4)	1394.6 (1199.4–1612.6)	2762.7 (2723.7–2802.1)	2151.4 (2116.2–2187.1)

Source: New Zealand Health Information Service, Ministry of Health

Figure 20: Rate ratios* for unintentional injury hospitalisations (0–4 years) by Asian ethnic group and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese, Indian and Other Asian children aged 0 to 4 years, have significantly lower rates of hospitalisation for unintentional injuries than the total population. For Chinese, the rate is one-half that of the total New Zealand population.
- Chinese pre-schoolers have significantly lower rates of hospitalisation for unintentional injuries than Indian pre-schoolers (both sexes). Chinese boys also have a significantly lower rate than Other Asian boys.

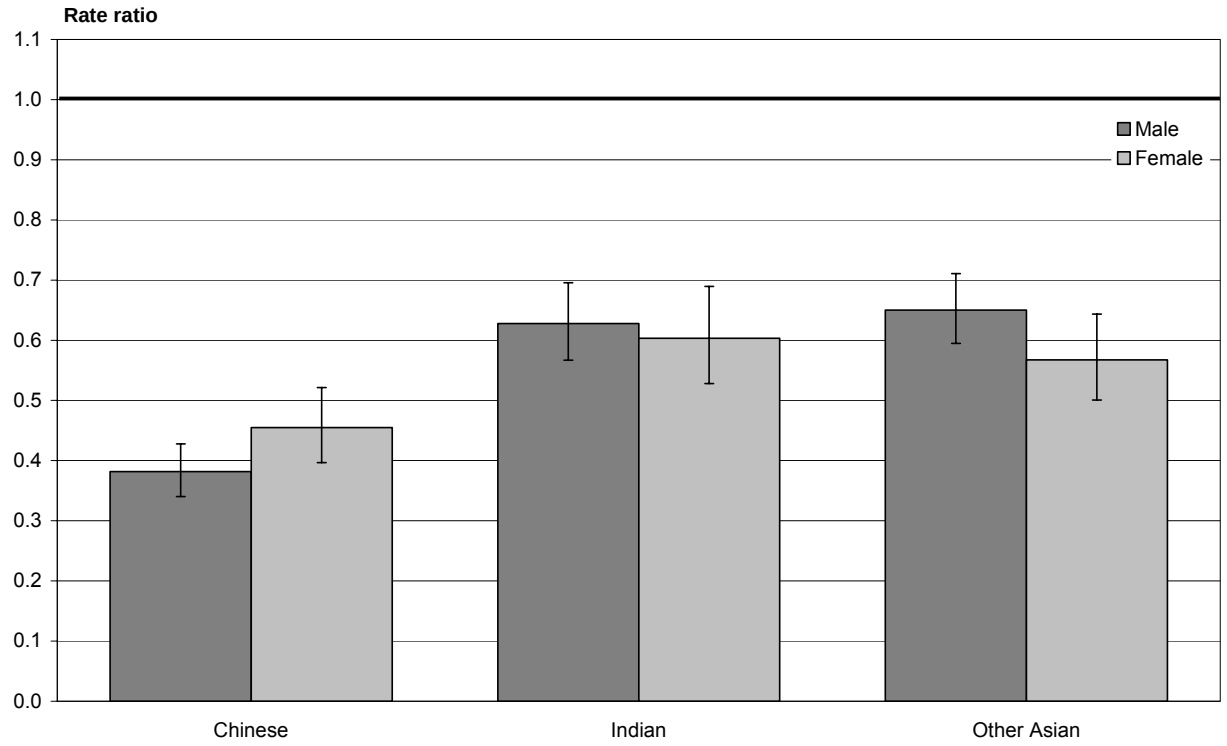
School-aged children – 5 to 14 years

Table 11: Rate (per 100,000) of unintentional injury hospitalisations (5–14 years), by ethnic group and sex, 1999–2003

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Unintentional injuries hospitalisation (5–14 years)	896.0 (796.6–1004.3)	663.8 (576.2–760.9)	1477.9 (1330.3–1637.3)	906.4 (789.8–1035.4)	1529.7 (1396.7–1672.0)	827.5 (727.5–937.4)	2357.0 (2332.4–2381.9)	1492.4 (1472.3–1512.8)

Source: New Zealand Health Information Service, Ministry of Health

Figure 21: Standardised rate ratios* for unintentional injury hospitalisations (5–14 years), by Asian ethnic group and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population (5-14 years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese, Indian and Other Asian children aged between 5 and 14 years have significantly lower unintentional injury hospitalisation rates than the total population.
- Once again, Chinese children have the lowest rates of all groups – less than half that of the total New Zealand population.
- For both boys and girls, the Chinese rates are significantly lower than the Indian or Other Asian rates.

Asthma

Asthma is characterised by episodic, reversible airflow obstruction (experienced as wheeze, breathlessness and cough). It is a common chronic disease in affluent societies, with the prevalence of the disease having increased over recent decades.

The findings of the New Zealand arm of the International Study of Asthma and Allergies in Childhood (ISAAC) suggests that 25–30% of New Zealand children and adolescents have symptoms of asthma (Asher et al 2001).

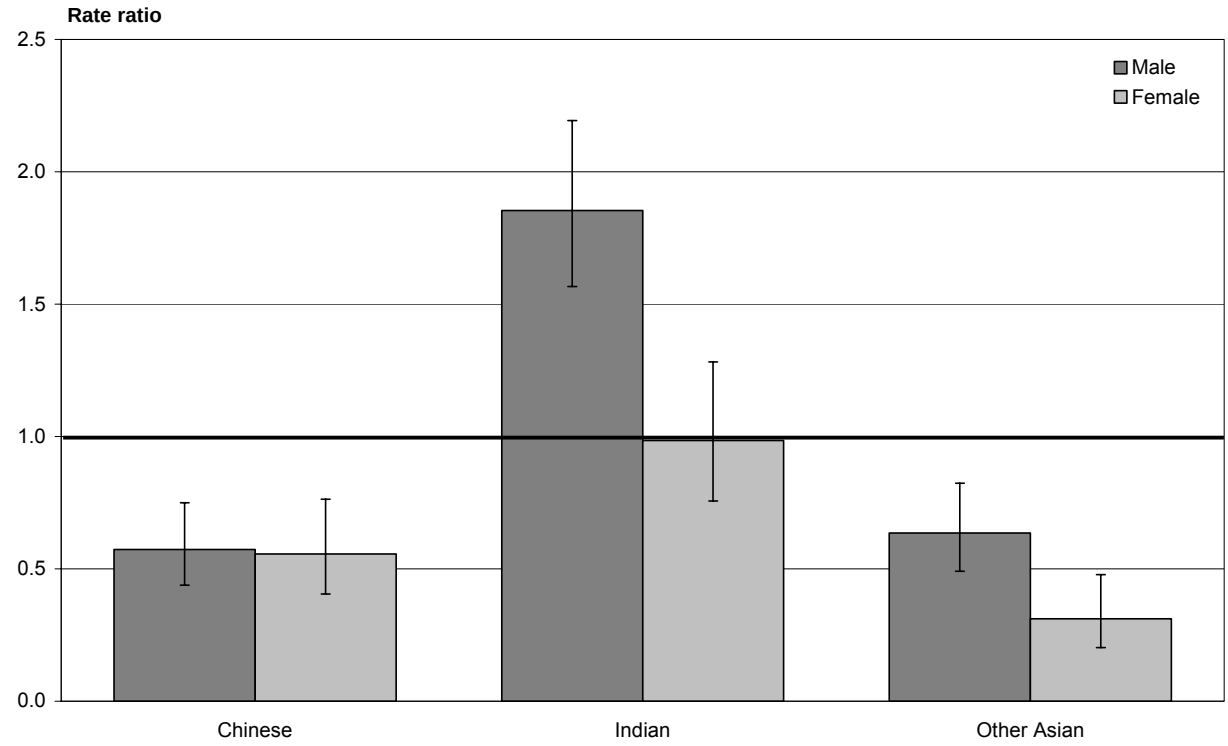
Here we use hospitalisation as an indicator of the impact of asthma on New Zealand children. High hospitalisation rates can reflect high prevalence of asthma, lack of access to primary health care and asthma education, or both.

Table 12: Rate (per 100,000) of asthma hospitalisations (5–14 years), by ethnic group and sex, 1999–2003

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Asthma hospitalisation (5–14 years)	164.0 (123.2–214.0)	125.7 (89.4–171.8)	561.3 (471.8–662.7)	233.9 (176.7–303.8)	182.6 (138.6–236.0)	70.4 (43.5–107.5)	297.2 (288.5–306.1)	235.0 (227.1–243.2)

Source: New Zealand Health Information Service, Ministry of Health

Figure 22: Standardised rate ratios* for asthma hospitalisations (5–14 years), by Asian ethnic group and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population (5-14 years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese and Other Asian children have a significantly lower rate of asthma hospitalisation than the total population.
- Indian boys are 1.5 times more likely to be hospitalised for asthma than their total population counterparts, a significant result.
- Rates for Indian girls are similar to the all New Zealand average.

Summary

- Among the Asian ethnic groups, infant mortality is significantly lower in Chinese and Other Asian ethnic groups than in the total population.
- Chinese and Other Asian infants have a significantly lower neonatal mortality rate than the total population.
- Chinese infants also have a significantly lower post-neonatal mortality rate.
- Low birthweight is significantly less prevalent among Chinese newborns than in the total population.
- Indian newborns are about 70% more at risk of low birthweight than the total population.
- Chinese, Indian and Other Asian children are less likely to be hospitalised for an unintentional injury than the total population.
- Indian boys (5–14 years) are 1.5 times more likely to be hospitalised for asthma than the total population, while Chinese and Other Asian children are significantly less likely to be hospitalised for this condition.

Young people (15–24 years)

Youth is usually a time of good physical health. The main health challenges faced by young people of all ethnic groups include risk-taking behaviour which may result in injuries such as motor vehicle crashes, and issues relating to mental health and wellbeing, and sexual and reproductive health. The indicators used in this section are intentional self-harm and suicide, road traffic injuries, and fertility.

Intentional self-harm hospitalisation and suicide

Hospitalisation for intentional self-harm is an internationally recognised indicator for attempted suicide (MoH 2006). To avoid errors in coding, we use hospitalisation for all intentional injuries, the vast majority of which are self-inflicted.

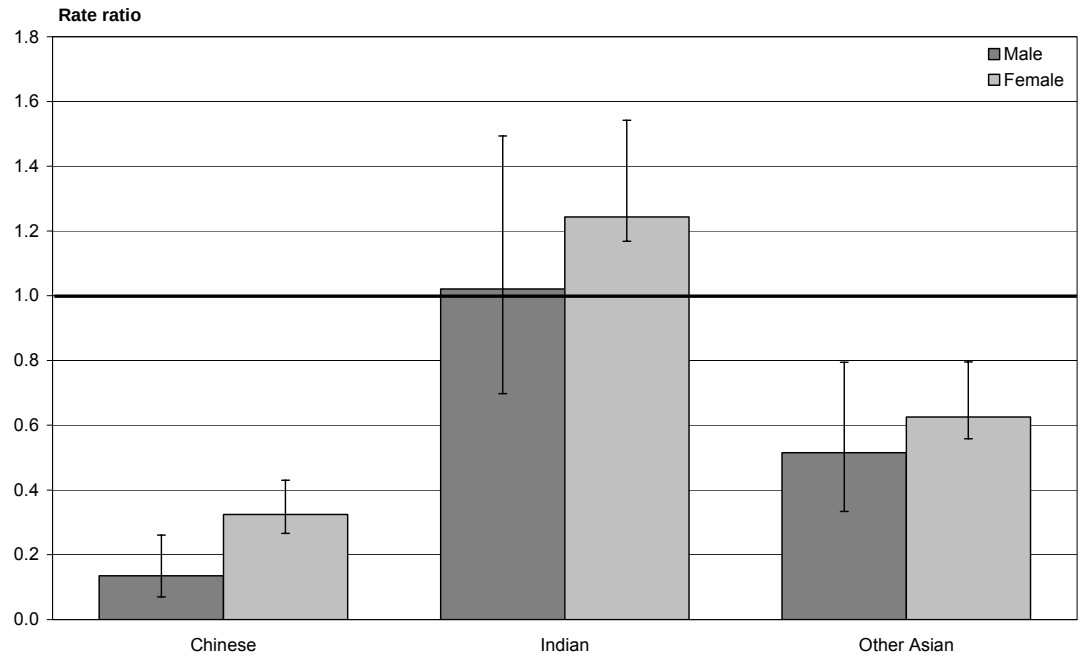
Table 13: Rate (per 100,000) of intentional injuries hospitalisation (1999–2003) and suicide mortality (1998–2002), by ethnic group and sex, 15–24 years

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Intentional injuries hospitalisation	15.0 (6.9–28.5)	87.1 (64.4–115.1)	112.6 (74.2–163.8)	334.3 (267.0–413.4)	55.2 (34.2–84.4)	167.8 (130.3–212.8)	109.9 (104.2–115.9)	267.5 (258.6–276.7)
Suicide mortality	13.3 (5.8–26.3)	5.3 (1.1–15.6)	50.0 (25.9–87.4)	19.7 (6.4–45.9)	13.1 (4.3–30.7)	14.8 (5.4–32.2)	34.9 (31.7–38.3)	12.3 (10.4–14.4)

Source: New Zealand Health Information Service, Ministry of Health

Intentional injury hospitalisations

Figure 23: Standardised rate ratios* for intentional injuries hospitalisation (15–24 years), by Asian ethnic group and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

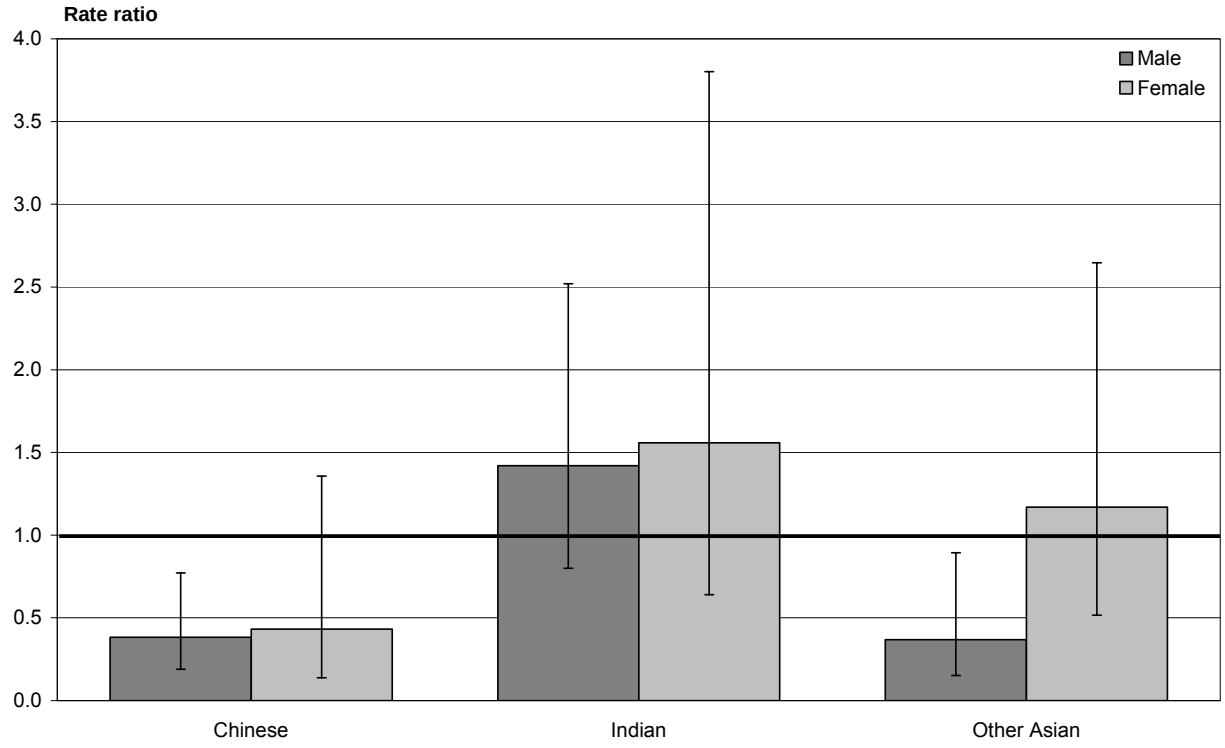
Note: Age-standardised to WHO world population (15-24 years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese and Other Asian youth have significantly lower intentional injury hospitalisation rates than the total population (both sexes).
- By contrast, Indian youth have a similar (males) or higher (females) rate than the total population.
- Among all the young Asian ethnic groups, females have a higher intentional injury hospitalisation rate than their male counterparts. This pattern is consistent with other population groups in New Zealand and elsewhere.

Suicide mortality

Figure 24: Standardised rate ratios* for suicide mortality (15–24 years), by Asian ethnic group and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (15-24 years).
* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese and Other Asian male youth have significantly lower suicide mortality rates than the total population.
- Chinese female youth may also have a lower rate than the total New Zealand population, although the difference does not reach statistical significance, perhaps because of small numbers.
- Indian youth (both sexes) and Other Asian female youth have similar rates to the total population.

Road traffic injuries

Among young people, road traffic injuries are a leading cause of hospitalisation and death. Both indicators are presented here.

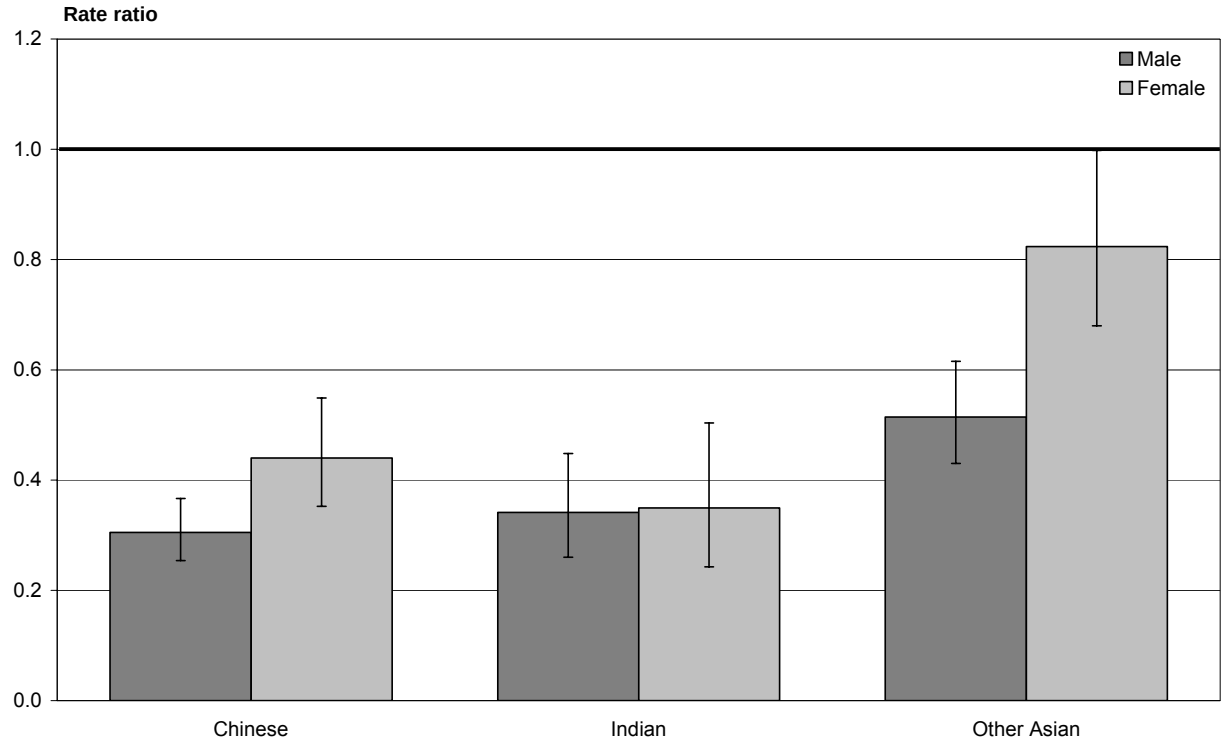
Table 14: Rate (per 100,000) of road traffic injury hospitalisations (1999–2003) and mortality (1998–2002), by ethnic group and sex, 15–24 years

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Road traffic hospitalisation	193.5 (159.9–232.1)	142.1 (112.7–176.9)	216.8 (161.9–284.3)	114.1 (76.4–163.8)	323.3 (268.7–385.8)	264.1 (216.4–319.1)	639.1 (625.2–653.1)	324.7 (314.8–334.8)
Road traffic mortality	20.0 (10.3–35.0)	16.0 (7.3–30.4)	25.0 (9.2–54.4)	–	39.4 (22.1–65.0)	14.8 (5.4–32.2)	38.1 (34.8–41.7)	14.8 (12.8–17.1)

Source: New Zealand Health Information Service, Ministry of Health

Road traffic hospitalisations

Figure 25: Standardised rate ratios* for road traffic injury hospitalisations (15–24 years), by Asian ethnic group and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population (15-24 years).

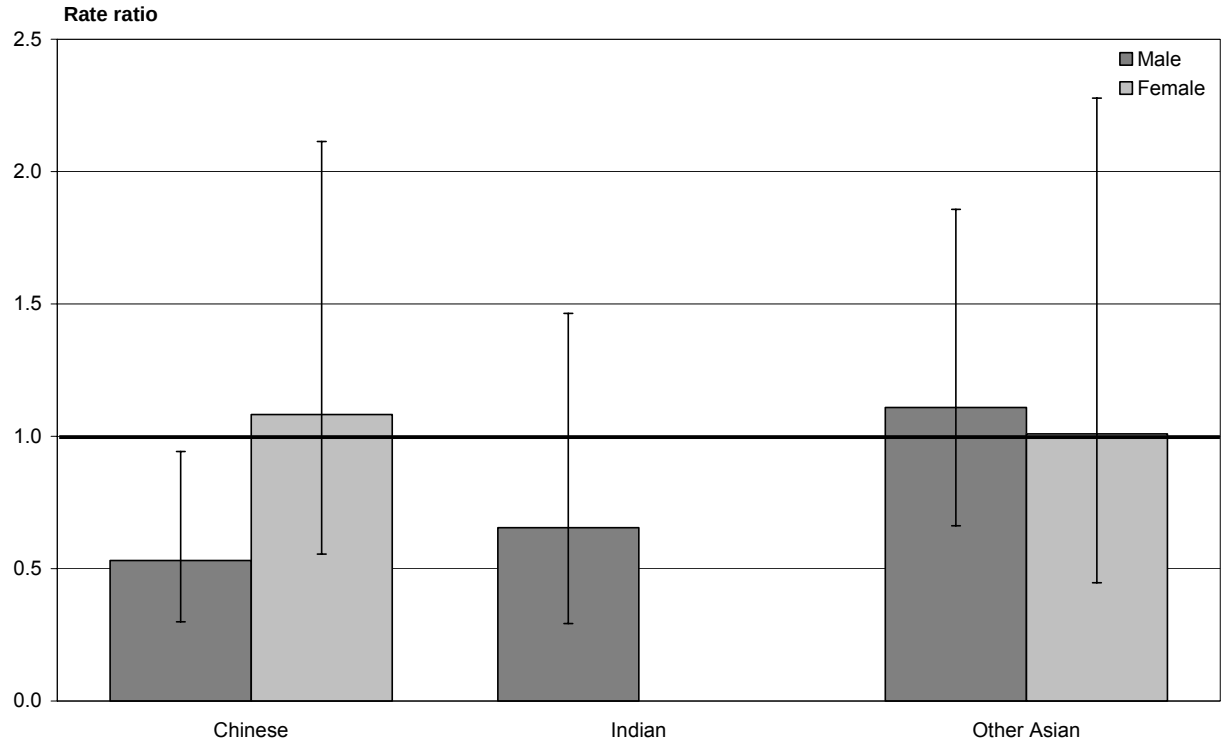
* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese, Indian and Other Asian youth all have significantly lower road traffic hospitalisation rates than the total population (both sexes).
- Other Asian female youth have significantly higher road traffic injury hospitalisation rates than their male counterparts.

- Hospitalisation rates for young Chinese and Indians are similar (about 70% lower than the all New Zealand rates) and lower than that of Other Asian youth.
- This finding of very low hospitalisation rates for road traffic injury for Asian ethnic groups is not fully mirrored in road traffic mortality rates in young people (see below). The reason for this discrepancy is unclear.

Road traffic mortality

Figure 26: Standardised rate ratios* for road traffic mortality (15–24 years), by Asian ethnic group and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population (15-24 years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese and Indian male youth have a lower road traffic mortality rate than the total population (although this is not statistically significant for Indians), in keeping with their low road traffic hospitalisation rates.
- This is not the case for Other Asian young people (both sexes) or Chinese female youth. However, note that the confidence intervals are wide, which suggests small numbers, and may account for the apparent inconsistency between fatal and non-fatal outcomes.

Fertility

Birth rates in young people, especially the 15 to 19 years age group, provide an indirect measure of sexual health. Teenagers with adolescent conduct problems, poor school achievement and family adversity may be more likely to become (generally unpartnered) teenage mothers (Woodward and Fergusson 2001).

Table 15: Birth rate (per 1000), 15–19 years, by ethnic group, 2002–2004

	Chinese	Indian	Other Asian	Total population
Birth rate per 1000 female population (15–19 years)	5.4 (4.4–6.6)	16.1 (13.3–19.2)	11.5 (9.8–13.5)	38.0 (37.4–38.6)

Source: Statistics New Zealand

- In the 15 to 19 years age group, Chinese, followed by Other Asian and Indian girls have a significantly lower birth rate than the total population.
- The very low birth rate among teenage Chinese girls, relative to other Asian ethnic groups and the total population, is particularly noteworthy.

Summary

- Chinese and Other Asian youth have significantly lower intentional injury hospitalisation rates than the total population, while Indian female youth have a higher rate than the total population.
- Chinese and Other Asian male youth have significantly lower suicide mortality rates than the total population.
- Chinese, Indian and Other Asian ethnic groups have significantly lower youth road traffic injury hospitalisation rates – but not mortality rates (except for Chinese males) – than the total population.
- In the 15 to 19 years age group, Chinese followed by Other Asian and Indian females, have a significantly lower birth rate than the total population.

Family Planning Association – Services for Asian Communities

The Family Planning Association (FPA) is seeing an increasing number of Asian clients in both its clinics and education sessions. The organisation is working on extending services to better meet the needs of this community.

Clinical services

The Family Planning clinics in the major cities of New Zealand are able to provide Chinese interpreters who will translate between clinician and client, either at a regular time or when requested. Clinics provide confidential information and advice on a wide range of sexual and reproductive health matters: contraception, sexually transmitted infection (STI) checks, cervical smear tests, menopause, condoms, emergency contraception, pregnancy, premenstrual syndrome (PMS) and vasectomy.

Resources

FPA has produced two sexual health pamphlets in Chinese, Korean and Japanese:

- *Contraception Your Choice*
- *Sexually Transmitted Infections – STIs*.

These pamphlets are available from Family Planning clinics or may be ordered from the Family Planning Resource Unit (phone 04 384 4349). *Contraception Your Choice* outlines the range of contraceptives available and how they work in preventing pregnancy. The STI pamphlet outlines the list of STIs, their symptoms and where to go to for help if someone thinks he/she may have been exposed to an STI through unprotected sex. It also outlines how people can protect themselves from contracting an STI.

Education and training

FPA provides education sessions in sexual and reproductive health at some international language schools around New Zealand. Topics covered are: keeping safe from unplanned pregnancy and STIs, relationships and communication, the sexual environment in New Zealand (which may be very different from that in students' home countries), and help and support agencies available to students. Classes can be taught in single-sex groups, with female and male educators available.

FPA also provides training for organisations working with Asian people, so that they are able to educate and support clients themselves.

For more information about education or training sessions, please phone the Family Planning education service on 09 524 3354. (The telephone numbers of all Family Planning clinics are on the website www.fpanz.org.nz or they can be found listed in the White Pages under F.)

Website www.fpanz.org.nz

Adults (25+ years)

The key health issue facing adults of all ethnic groups in New Zealand is the risk of chronic disease – including cancer, cardiovascular disease, diabetes and others. Although mortality and disability from these conditions occur most often in old age, chronic disease usually reflects cumulative exposure to behavioural and biological risk factors over the life course, with onset of subclinical or clinical disease often occurring in middle age.

In this section we focus on selected major chronic diseases – cardiovascular diseases (hospitalisation and mortality rates), diabetes (prevalence rates), cancer (registration and mortality rates), and injuries from falls in older people (age-specific hospitalisation rates).

Cardiovascular diseases

Cardiovascular diseases (CVDs) are major causes of death for all ethnic groups in New Zealand. Ischaemic heart disease, ischaemic and haemohorrhagic stroke, hypertensive heart disease, rheumatic and other valvular heart disease and dysrhythmias are major diseases within this category.

Six sub-indicators are used in this report to capture the burden of cardiovascular disease on Asian New Zealanders: mortality and hospitalisation rates of cardiovascular disease as a whole, corresponding rates of ischaemic heart disease, and corresponding rates of stroke.

Table 16: Age-specific rate (per 100,000) of cardiovascular disease hospitalisation (1999–2003) and mortality* (1998–2002), by ethnic group and sex

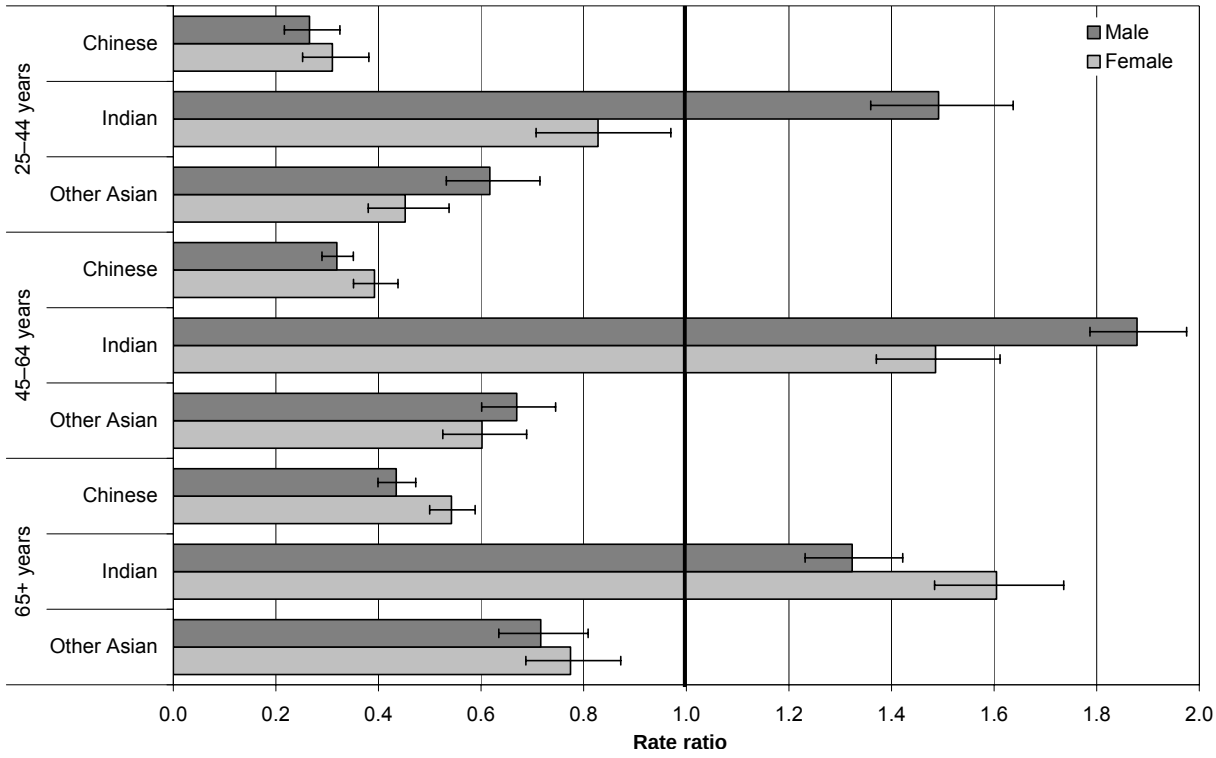
	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Hospitalisation 25–44 years	151.3 (122.8–184.3)	111.0 (89.6–136.0)	859.2 (782.2–941.7)	290.4 (246.6–339.7)	343.9 (295.4–398.1)	162.2 (135.6–192.5)	559.5 (550.6–568.6)	358.7 (351.8–365.7)
Hospitalisation 45–64 years	978.4 (887.5–1076.1)	628.1 (561.3–700.7)	5508.7 (5232.4–5795.8)	2343.0 (2156.5–2541.3)	1689.0 (1523.2–1867.8)	824.7 (723.5–936.2)	3161.3 (3136.9–3185.9)	1724.7 (1706.9–1742.6)
Hospitalisation 65+ years	4255.6 (3918.0–4614.6)	3760.2 (3453.8–4086.4)	13846.2 (12840.7–14909.4)	10727.8 (9884.4–11623.9)	7272.7 (6421.8–8205.0)	5239.5 (4630.9–5905.8)	10997.4 (10931.8–11063.2)	8012.3 (7963–8061.8)
Mortality 45–64 years	99.2 (71.8–133.7)	15.7 (6.8–30.8)	210.9 (159.7–273.2)	84.5 (52.3–129.2)	138.1 (93.9–196.1)	51.8 (29.0–85.4)	226.0 (219.5–232.6)	91.9 (87.8–96.1)
Mortality 65+ years	915.0 (762.2–1089.5)	975.6 (822.8–1148.6)	1992.1 (1622.6–2420.6)	1455.5 (1155.9–1809.1)	1239.7 (904.2–1658.8)	1231.7 (946.5–1575.8)	2299.8 (2269.8–2330.0)	2129.6 (2104.3–2155.2)

Source: New Zealand Health Information Service, Ministry of Health

* CVD mortality rates for the 25–44 years age group were not calculated because of small numbers.

CVD hospitalisations

Figure 27: Standardised rate ratios* for cardiovascular disease hospitalisation, by Asian ethnic group, age and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

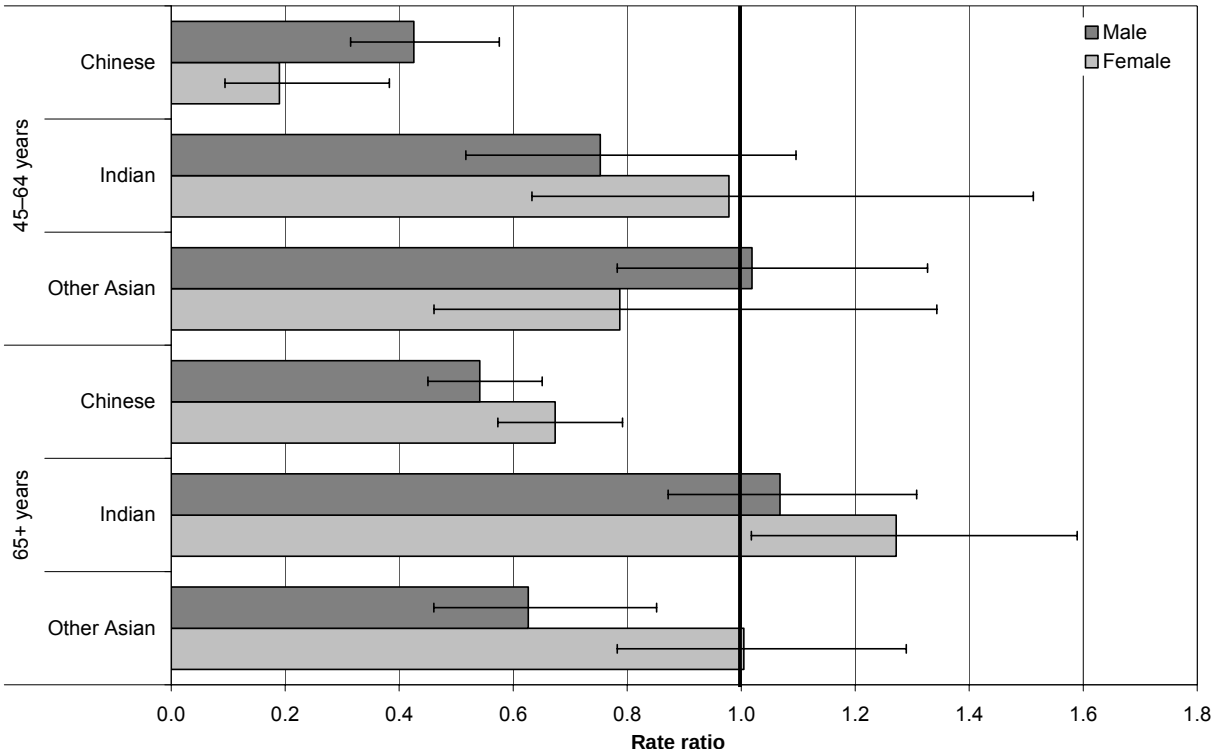
Note: Age-standardised within age categories to WHO world population.

* Reference group (rate ratio = 1) is the total New Zealand population.

- In all age groups, Chinese and Other Asian ethnic groups have significantly lower CVD hospitalisation rates than the total population (both sexes).
- The CVD hospitalisation rate is significantly higher for Indians (for all age groups) than for Chinese and Other Asians (both sexes) and the total population (apart from 25–44-year-old females).
- The CVD hospitalisation rate is significantly higher for Indian males than for Indian females in the 25–44 and 45–64 years age groups. For the 65+ age group this contrast is reversed.
- Among older people (65+ years), females have a higher cardiovascular disease hospitalisation rate than males for all Asian ethnic groups (although this is not statistically significant for Other Asians).

CVD mortality

Figure 28: Standardised rate ratios* for cardiovascular disease mortality, by Asian ethnic group, age and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

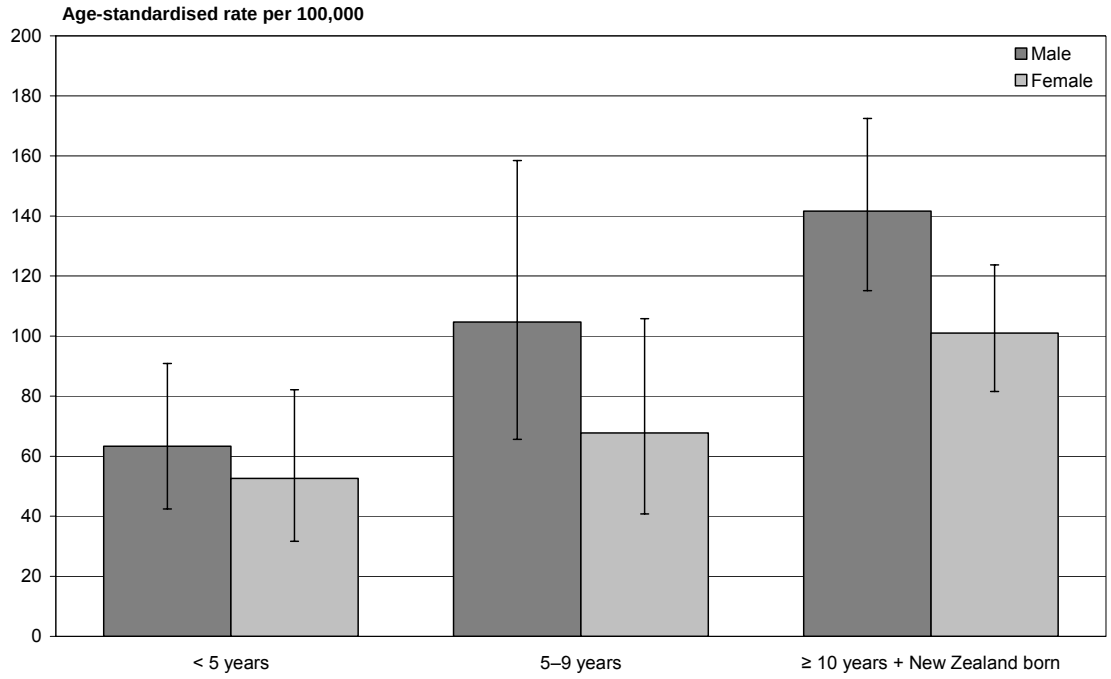
Note: Age-standardised within age categories to WHO world population.

* Reference group (rate ratio = 1) is the total New Zealand population.

- In the 45 to 64 years and 65+ age groups, CVD mortality is significantly lower for Chinese than the total population.
- Among the Asian ethnic groups aged 45 to 64 years and 65+, CVD mortality is significantly higher for Indian than Chinese ethnic groups (both sexes).
- CVD mortality is higher in Indian females aged 65+ years than in the total population. For males the difference is not significant.
- This pattern of low cardiovascular disease mortality among Chinese, intermediate among Other Asian and relatively high among Indian ethnic groups probably accounts for much of the life expectancy differences between these groups shown on page 11.
- The relatively high cardiovascular disease mortality among the Indian ethnic groups may be explained (in part) by the high prevalence of type 2 diabetes in this ethnic group (see page 47).

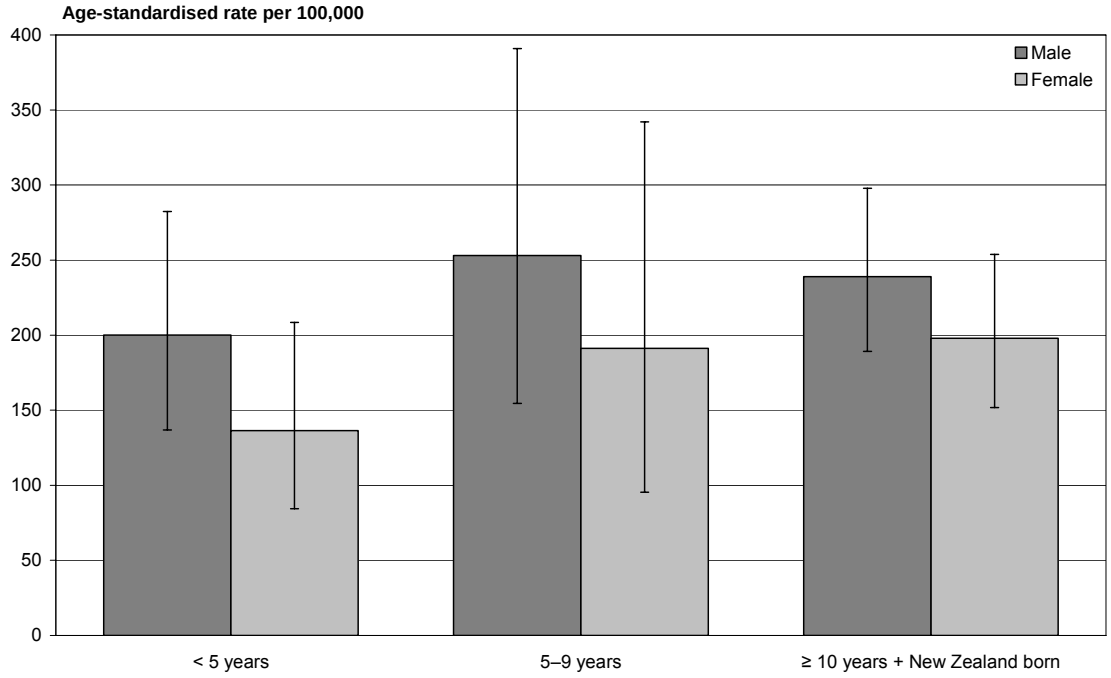
CVD mortality, by duration of residence

Figure 29: Age-standardised rate (per 100,000) of cardiovascular disease mortality for Chinese, by duration of residence and sex, 25+ years, 1998–2002



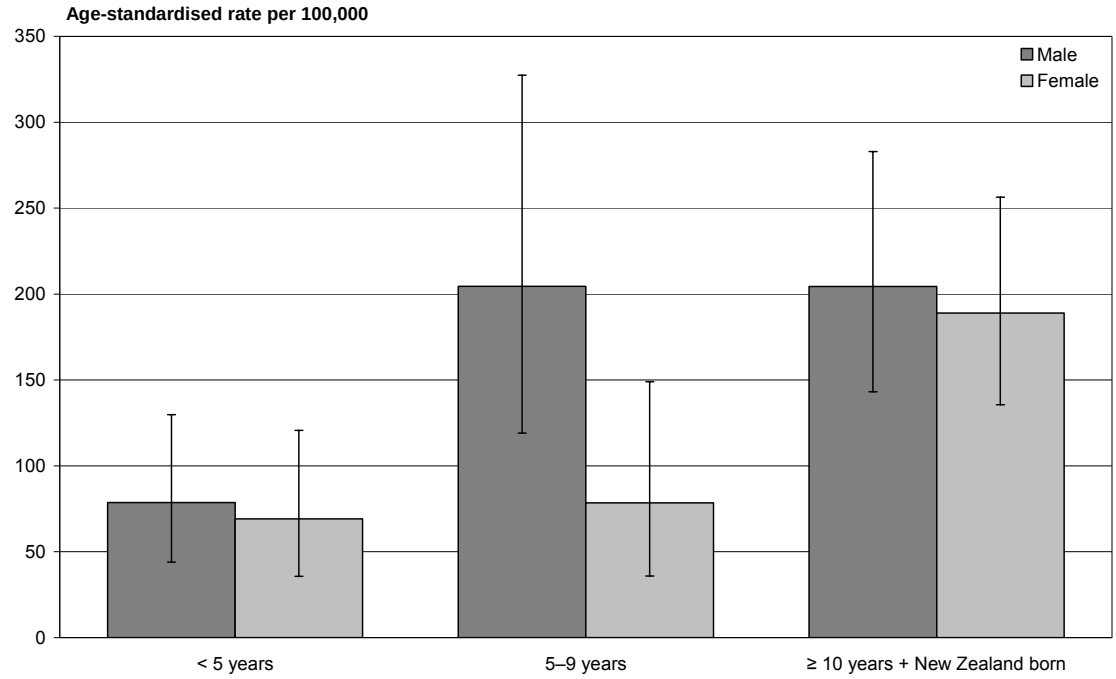
Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

Figure 30: Age-standardised rate (per 100,000) of cardiovascular disease mortality for Indians, by duration of residence and sex, 25+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

Figure 31: Age-standardised rate (per 100,000) of cardiovascular disease mortality for Other Asians, by duration of residence and sex, 25+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

- There is a clear dose-response relationship between duration of residence in New Zealand (or being New Zealand-born) and cardiovascular disease mortality among Chinese and Other Asians (both sexes) and among Indian females.
- Once again, this finding of worsening health (increasing cardiovascular disease mortality) with duration of residence – whether the result of selection or acculturation effects, or both – suggests that the life expectancy of Asian ethnic groups (most clearly demonstrated for Chinese) may be expected to decline (unless high immigration rates return).

Ischaemic heart disease

Ischaemic heart disease (IHD) is the leading specific cause of mortality in New Zealand, for all ethnic groups. IHD is related to atherosclerosis of the coronary arteries. Established risk factors for IHD include high blood cholesterol, high blood pressure, tobacco use, overweight and obesity, physical inactivity, diabetes, and inadequate vegetable and fruit intake.

Table 17: Age-specific rate (per 100,000) for ischaemic heart disease hospitalisation (1999-2003) and mortality* (1998–2002), by ethnic group and sex

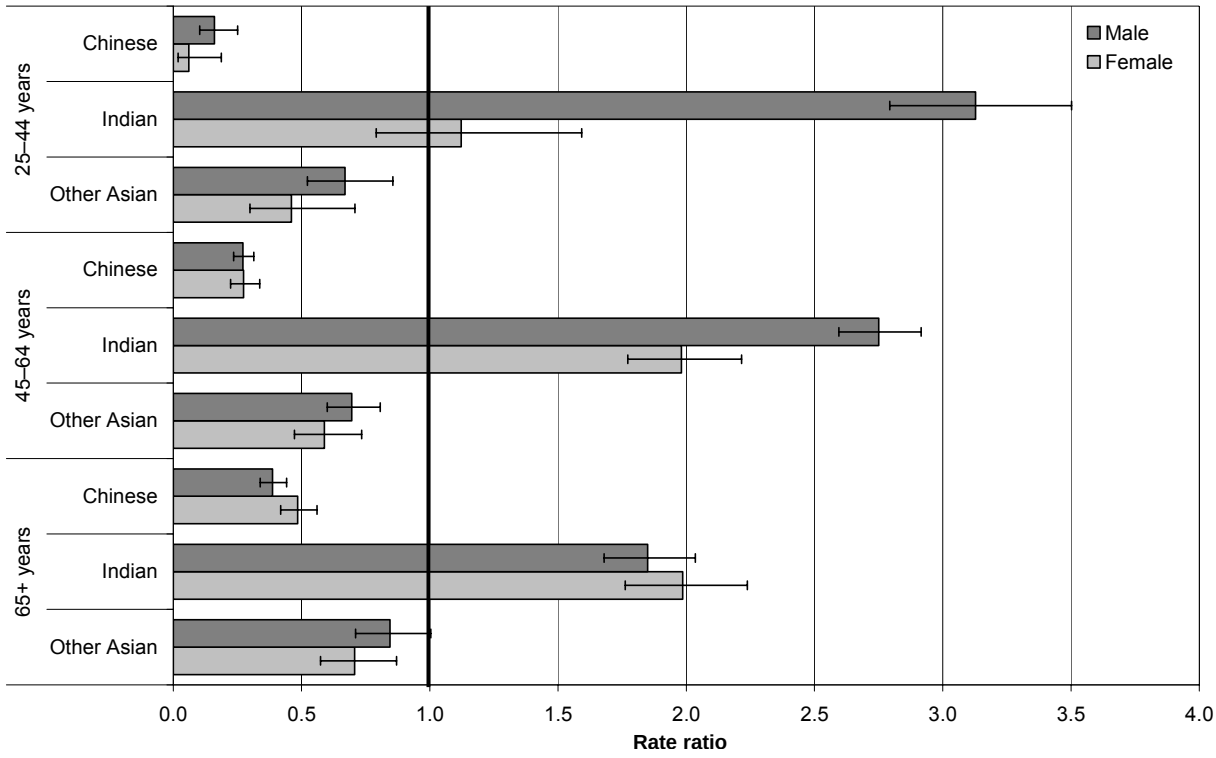
	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
IHD hospitalisation (25–44 years)	30.9 (18.9–47.7)	3.6 (0.7–10.5)	594.1 (530.4–663.3)	59.6 (40.7–84.1)	123.0 (94.7–157)	26.0 (16.1–39.8)	189.8 (184.6–195.1)	56.9 (54.2–59.7)
IHD hospitalisation (45–64 years)	433.8 (374–500.5)	180.0 (145.1–220.8)	4217.5 (3976.2–4469.7)	1256.0 (1120.5–1403.4)	895.7 (776.2–1028.5)	307.1 (246.6–377.9)	1643.2 (1625.6–1660.9)	693.3 (682.1–704.7)
IHD hospitalisation (65+ years)	1735.7 (1522.6–1970.2)	1239.8 (1066.7–1433.1)	8264.3 (7491.8–9094.8)	5031.4 (4459.3–5656.6)	3719.0 (3118.1–4401.9)	1798.6 (1450–2205.9)	4547.3 (4505.2–4589.7)	2859.4 (2830–2889.1)
IHD mortality (45–64 years)	69.2 (46.7–98.8)	–	185.0 (137.3–243.9)	48.3 (25.0–84.4)	89.1 (54.4–137.6)	17.3 (5.6–40.3)	158.6 (153.1–164.1)	45.1 (42.2–48)
IHD mortality (65+ years)	406.7 (307.2–528.1)	365.9 (274.8–477.4)	1380.7 (1076.3–1744.4)	916.4 (682.4–1205.0)	826.4 (557.6–1179.8)	567.0 (379.7–814.2)	1401.5 (1378.2–1425.2)	1061.2 (1043.3–1079.3)

Source: New Zealand Health Information Service, Ministry of Health

* IHD mortality rates for the 25–44 years age group were not calculated because of small numbers.

IHD hospitalisations

Figure 32: Standardised rate ratios* for ischaemic heart disease hospitalisation, by Asian ethnic group, age and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

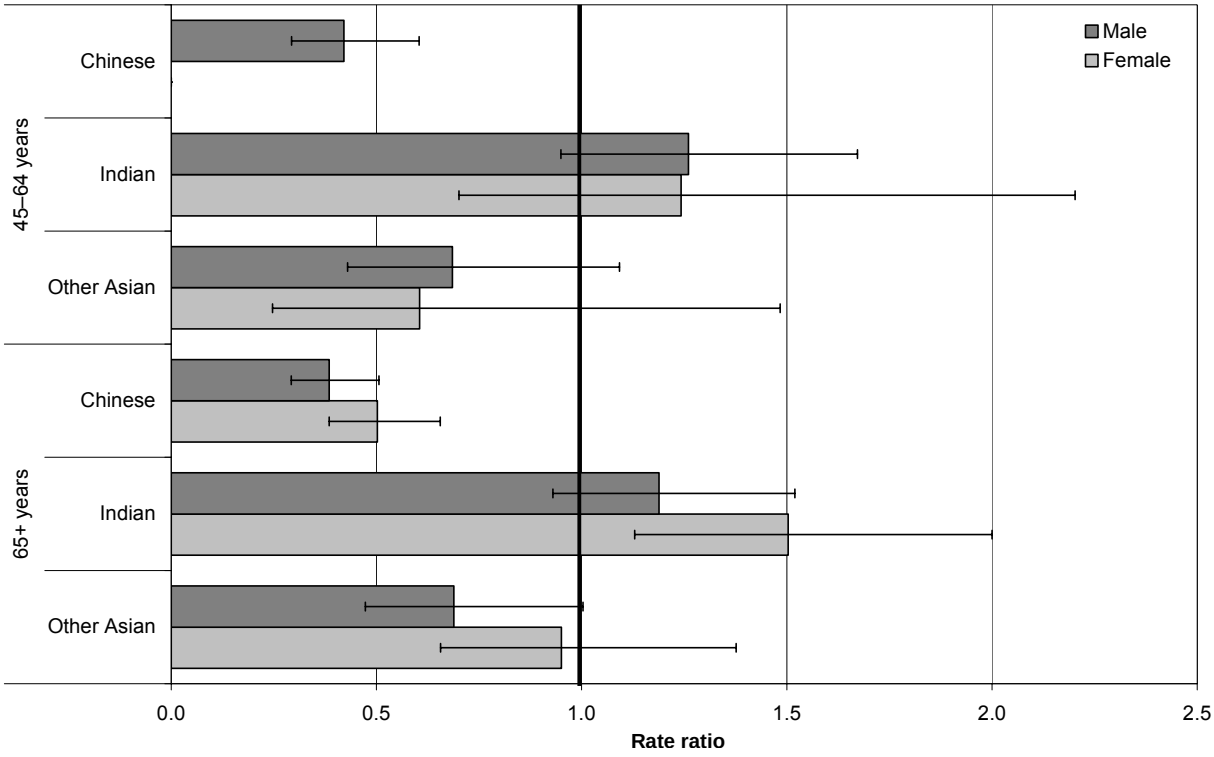
Note: Age-standardised within age categories to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- For all age groups, ischaemic heart disease hospitalisation rates are significantly lower for Chinese and Other Asians than for Indians or the total New Zealand population (both sexes).
- Indian New Zealanders have significantly higher IHD hospitalisation rates than the all New Zealand average (except for 25–44-year-old females, where the difference is not significant).
- For all age groups, rates are significantly higher (both sexes) among Other Asian than Chinese ethnic groups. That is, the Chinese ethnic group has the lowest rates, followed by the Other Asian ethnic group, the all New Zealand average, and finally the Indian ethnic group.

IHD mortality

Figure 33: Standardised rate ratios* for ischaemic heart disease mortality, by Asian ethnic group, age and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised within age categories to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- In the 45–64 and 65+ age groups, ischaemic heart disease mortality is higher for Indian males and females than for the total population. However, the difference is statistically significant only for females aged 65+ (perhaps reflecting relatively small numbers of deaths).
- Chinese people aged 45–64 and 65+ years have ischaemic heart disease mortality rates significantly lower than the total New Zealand population.

- For Other Asians, the point estimates are also well below the total population rates (except for females aged 65+, where the rates are similar), but the differences are not statistically significant, perhaps reflecting small numbers.
- Ischaemic heart disease mortality is significantly higher in Indians than in Chinese and Other Asians for most age-by-sex groups.

Stroke

Stroke refers to the sudden onset of neurological deficit caused by an interruption of the brain's blood supply. Stroke can be divided into two main types: cerebral infarct (associated with blockage of arteries) and cerebral haemorrhage (associated with haemorrhage into the brain). These types are not differentiated in the selected indicators, however.

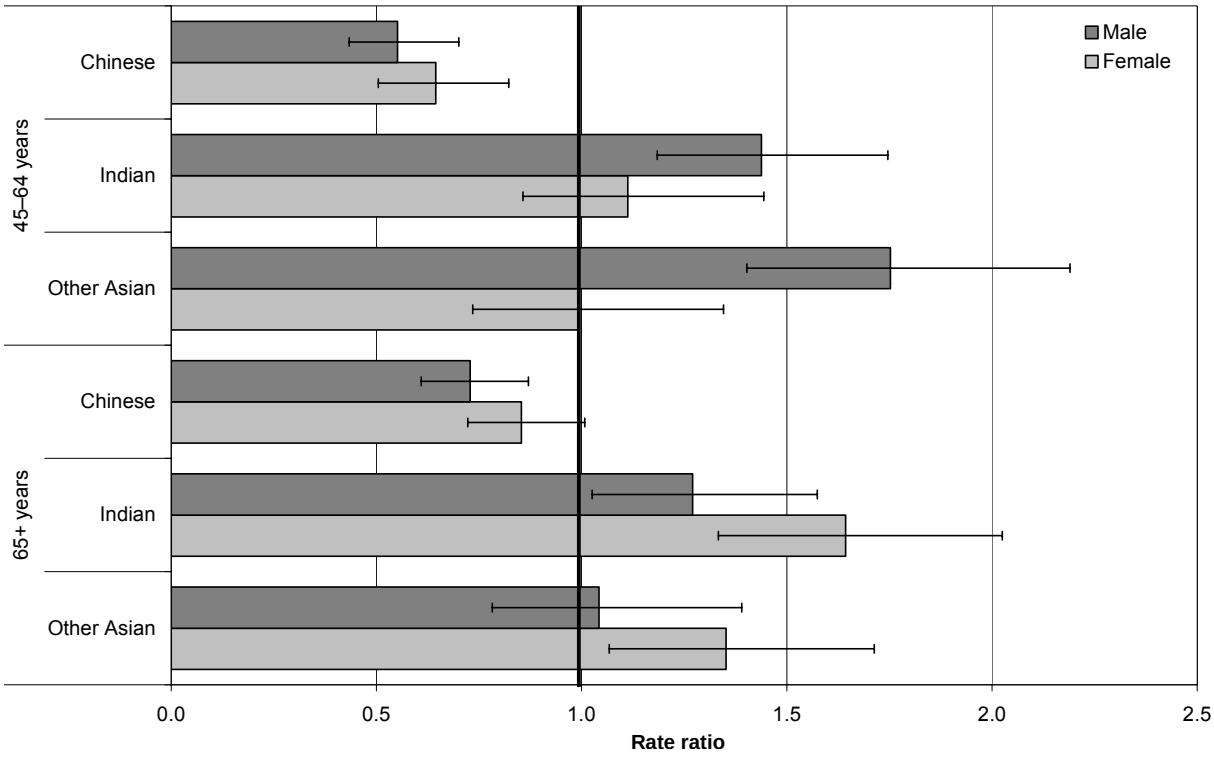
Table 18: Age-specific rate (per 100,000) of stroke hospitalisation (1999–2003) and mortality (1998–2002), by ethnic group and sex

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Stroke hospitalisation (45–64 years)	159.2 (123.9–201.5)	129.1 (99.9–164.3)	392.2 (321.1–474.3)	233.5 (177.3–301.8)	410.0 (330.5–502.8)	162.2 (119.2–215.7)	296.9 (289.5–304.5)	226.4 (220.0–233.0)
Stroke hospitalisation (65+ years)	1002.2 (842.0–1184.0)	948.5 (797.9–1119.3)	1814.6 (1462.8–2225.4)	1725.1 (1397.3–2106.6)	1432.5 (1069.9–1878.5)	1407.6 (1101.4–1772.7)	1587.5 (1562.6–1612.6)	1337.9 (1317.8–1358.2)
Stroke mortality (45–64 years)	23.1 (11.1–42.4)	9.8 (3.2–22.8)	–	20.1 (6.5–47)	26.7 (9.8–58.2)	–	26.6 (24.4–28.9)	24.0 (22.0–26.2)
Stroke mortality (65+ years)	377.6 (282.0–495.2)	426.8 (328.0–546.1)	473.4 (303.3–704.3)	413.3 (262.0–620.1)	220.4 (95.1–434.2)	469.2 (300.6–698.1)	480.5 (466.9–494.4)	622.6 (608.9–636.5)

Source: New Zealand Health Information Service, Ministry of Health

Stroke hospitalisations

Figure 34: Standardised rate ratios* for stroke hospitalisation, by Asian ethnic group, age and sex, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

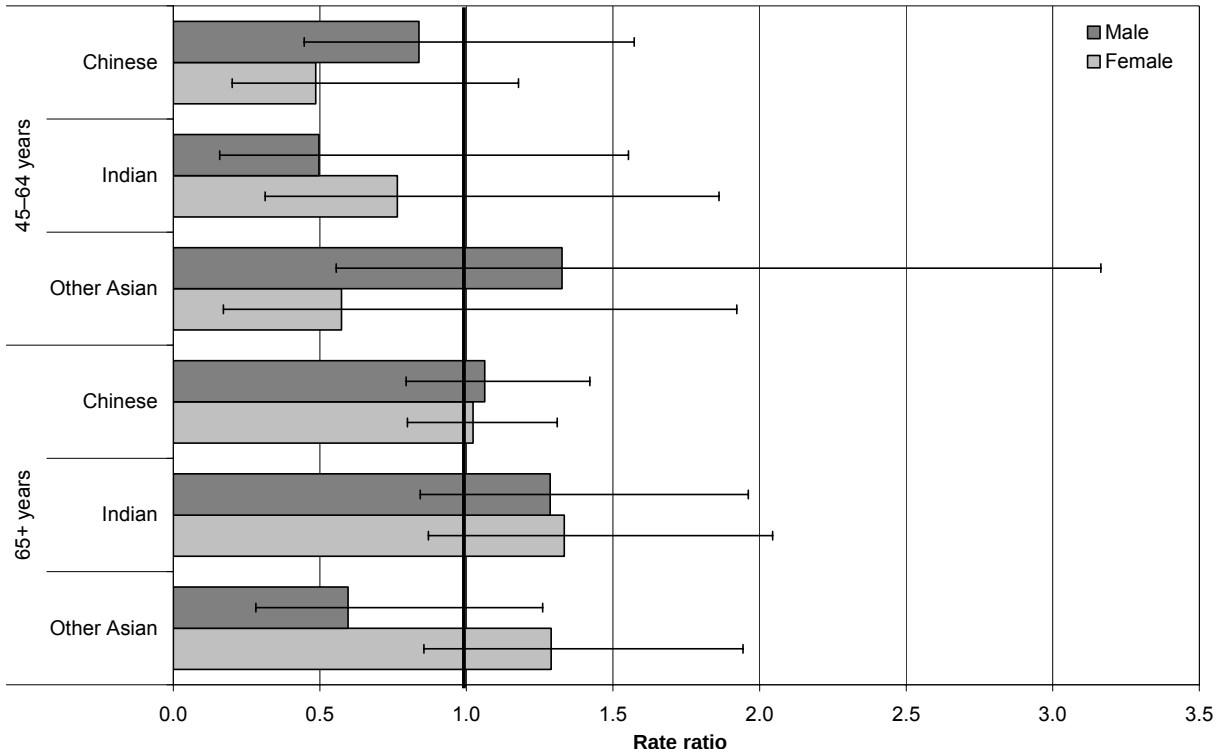
Note: Age-standardised within age categories to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- In the 45 to 64 years age group, stroke hospitalisation is significantly higher for Other Asian and Indian males than for the total population.
- In both age groups, stroke hospitalisation is lower for Chinese males and females than for Indian or Other Asian ethnic groups and the total New Zealand population.
- In the 65+ years age group, stroke hospitalisation is significantly higher for Indian males and females and Other Asian females than for the total population.

Stroke mortality

Figure 35: Standardised rate ratios* for stroke mortality, by Asian ethnic group, age and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised within age categories to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- With the exception of Other Asian males, in the 45 to 64 years age groups stroke mortality may be lower for all Asian ethnic groups than the total population (although confidence intervals include 1, perhaps reflecting small numbers).
- Stroke mortality in the 65+ years age group may be slightly higher for Indian and Other Asian females than for the total population, although the differences are again not statistically significant.
- This pattern is reasonably consistent with the hospitalisation pattern, although the Chinese ethnic group appears to have similar stroke mortality rates yet lower stroke hospitalisation rates than the national average.

Diabetes

Diabetes is a heterogeneous collection of metabolic disorders characterised by raised blood glucose levels. Most diabetics (85–90% in New Zealand) have type 2 diabetes. Type 2 diabetes usually develops in adults who are overweight or obese. Hospitalisation and mortality rates for diabetes are not used as indicators in this report, because of coding issues (many such events are coded to the proximate cause, such as IHD, rather than to diabetes as the underlying cause). Instead, the burden of diabetes is indexed through its prevalence.

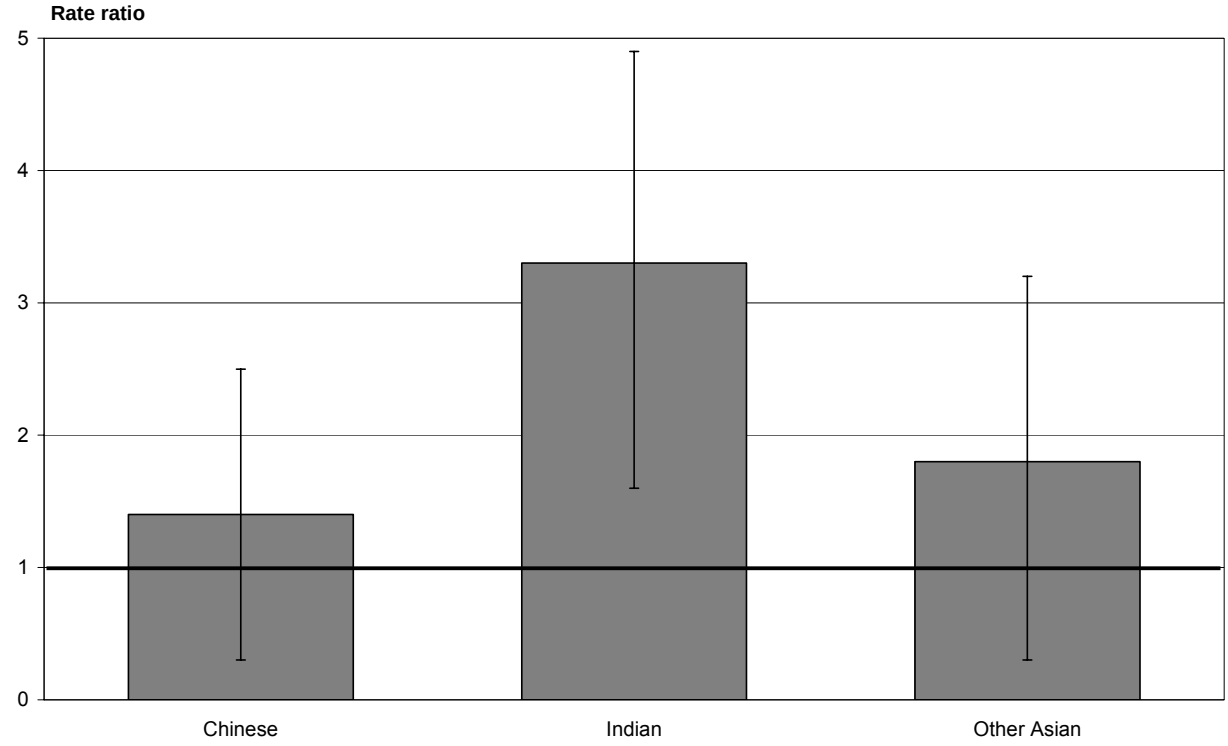
The indicator used in this report is self-reported doctor-diagnosed diabetes, with the data being sourced from the 2002/03 New Zealand Health Survey. Measured prevalence would be preferable to self-reported prevalence, because many people living with diabetes are unaware of their condition; however, such data are not currently available. It should be borne in mind that measured prevalence may be one-third or more higher than the self-reported prevalence shown below.

Table 19: Prevalence (per 100) of self-reported diabetes, by Asian ethnic group, 15+ years, 2002/03

	Chinese	Indian	Other Asian
Diabetes (self-reported)	3.4 (0.6–6.3)	9.4 (3.9–15)	5.7 (1.8–9.6)

Source: 2002/03 New Zealand Health Survey, Ministry of Health
Note: Sexes have been pooled because of small numbers.

Figure 36: Standardised rate ratios* for self-reported diabetes prevalence, by Asian ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health
Note: Age-standardised to WHO world population (15+ years); sexes pooled because of small numbers.
* The reference group (rate ratio = 1) is the total New Zealand population.

- The prevalence of self-reported diabetes is over three times higher for Indian people than for the total population, a statistically significant result.
- Chinese and Other Asians also have higher point prevalence estimates of self-reported diabetes than the total population, but these differences are not statistically significant, perhaps reflecting small numbers.
- Possibly for the same reason, differences between the Chinese or Other Asian ethnic groups and the Indian ethnic group are not statistically significant, although the point estimate is higher for the latter group.

Cancer

Cancer is a major cause of premature mortality and disability for all ethnic groups, and cancer control is a high priority within the New Zealand Health Strategy (Ministry of Health 2000).

This section looks at all cancers combined, lung cancer (a proxy for smoking-related cancers), non-lung cancer (a proxy for non-smoking-related cancers), and two specific cancers of particular importance for the Asian ethnic groups: breast cancer and stomach cancer. Cancer registrations and mortality are used as indicators.

All cancer

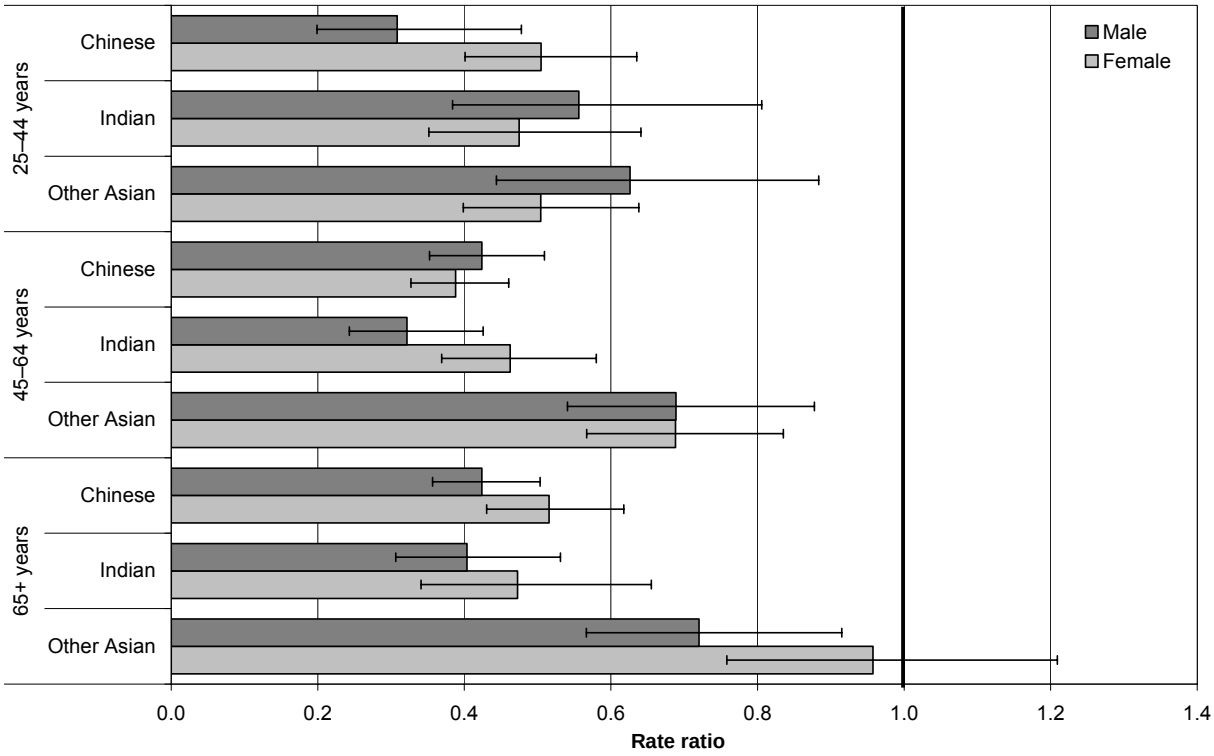
Table 20: Age-specific rate (per 100,000) of all cancer registrations (1997–2001) and mortality (1998–2002), by ethnic group and sex

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
All cancer registrations (25–44 years)	32.4 (20.1–49.5)	89.5 (70.4–112.2)	54.5 (36.5–78.3)	80.1 (57.9–107.8)	63.4 (43.6–89.0)	87.9 (68.7–110.9)	100.6 (96.8–104.5)	172.7 (168.0–177.6)
All cancer registrations (45–64 years)	270.0 (223.3–323.6)	266.1 (223.3–314.8)	185.0 (137.3–243.9)	310.0 (244.6–387.4)	343.1 (270.8–428.9)	414.1 (343.3–495.1)	652.4 (641.3–663.6)	701.8 (690.5–713.3)
All cancer registrations (65+ years)	1060.3 (895.3–1246.9)	806.2 (667.9–964.8)	1104.5 (834.4–1434.3)	700.8 (498.3–958)	2011.0 (1576.3–2528.6)	1446.7 (1136–1816.2)	3047.6 (3013.1–3082.3)	1685.6 (1663–1708.4)
All cancer mortality (25–44 years)	17.0 (8.5–30.4)	21.5 (12.7–34.0)	11.3 (4.1–24.6)	18.6 (8.9–34.2)	3.8 (0.5–13.9)	21.1 (12.3–33.7)	24.1 (22.3–26.0)	33.9 (31.8–36.1)
All cancer mortality (45–64 years)	106.1 (77.7–141.6)	82.2 (59.2–111.1)	81.4 (51.0–123.2)	100.6 (65.1–148.6)	129.2 (86.5–185.6)	120.8 (84.1–168.0)	239.3 (232.6–246.1)	228.7 (222.3–235.3)
All cancer mortality (65+ years)	631.8 (506.1–779.3)	460.7 (357.8–584.1)	631.2 (431.7–891.0)	521.1 (349.0–748.4)	1239.7 (904.2–1658.8)	782.0 (558.7–1064.9)	1524.2 (1499.9–1548.9)	987.2 (969.9–1004.7)

Source: New Zealand Health Information Service, Ministry of Health

All cancer registrations

Figure 37: Standardised rate ratios* for all cancer registrations, by Asian ethnic group, age and sex, 1997–2001



Source: New Zealand Health Information Service, Ministry of Health

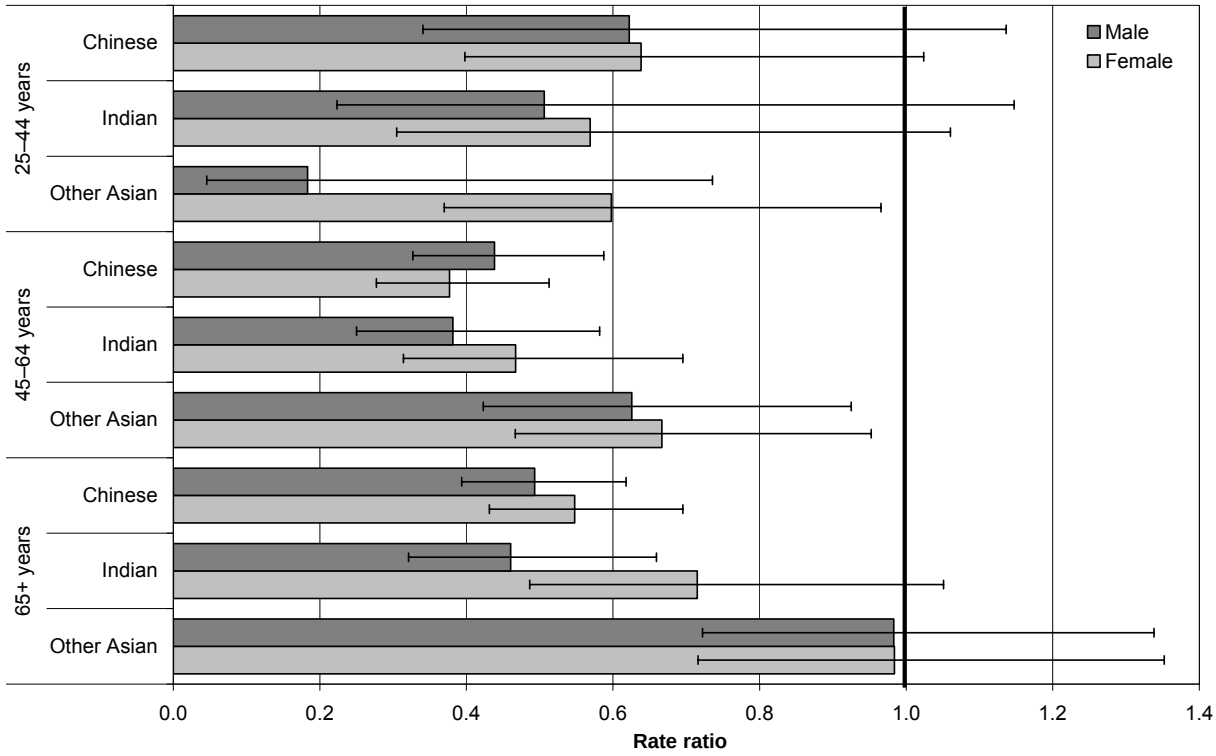
Note: Age-standardised within age categories to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Cancer registration rates are significantly lower for all Asian ethnic groups than the total population in all age groups (with the single exception of Other Asian females aged 65+).
- Among the Asian ethnic groups, Other Asians have significantly higher cancer registration rates than Chinese or Indian ethnic groups from middle age onwards (both sexes).

All cancer mortality

Figure 38: Standardised rate ratios* for all cancer mortality, by Asian ethnic group, age and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised within age categories to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Cancer mortality is lower in all the Asian ethnic groups than in the total population, for both sexes and all age groups, although the differences are not all statistically significant.
- Among the Asian ethnic groups, Other Asians have a higher cancer mortality rate than Chinese and Indians (both sexes) – although again the differences are mainly not statistically significant.

Lung cancer

Lung cancer is the major tobacco-associated cancer. Almost 90% of lung cancer may be attributable to smoking. Lung cancer is used in this report as a proxy for tobacco-attributable cancers.

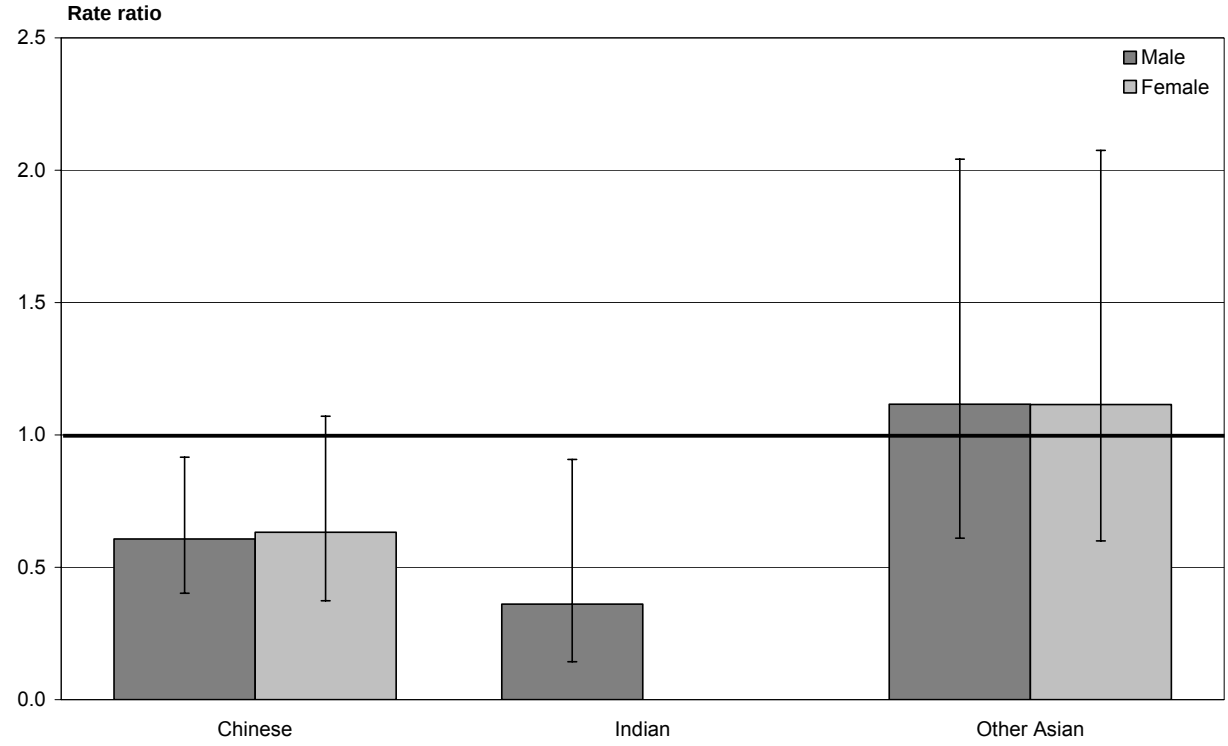
Table 21: Age-specific rate (per 100,000) of lung cancer registrations (1997–2001) and mortality (1998–2002), by ethnic group and sex

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Lung cancer registrations (65+ years)	188.8 (123.3–276.7)	94.9 (51.9–159.1)	98.6 (32.0–230.1)	–	330.6 (170.8–577.5)	195.5 (93.8–359.5)	353.7 (342.0–365.7)	160.4 (153.5–167.5)
Lung cancer mortality (65+ years)	196.1 (129.2–285.3)	101.6 (56.9–167.6)	–	–	440.8 (251.9–715.8)	78.2 (21.3–200.2)	330.8 (319.5–342.3)	155.9 (149.1–163.0)

Source: New Zealand Health Information Service, Ministry of Health

Lung cancer registrations

Figure 39: Standardised rate ratios* for lung cancer registrations, by Asian ethnic group and sex, 65+ years, 1997–2001



Source: New Zealand Health Information Service, Ministry of Health

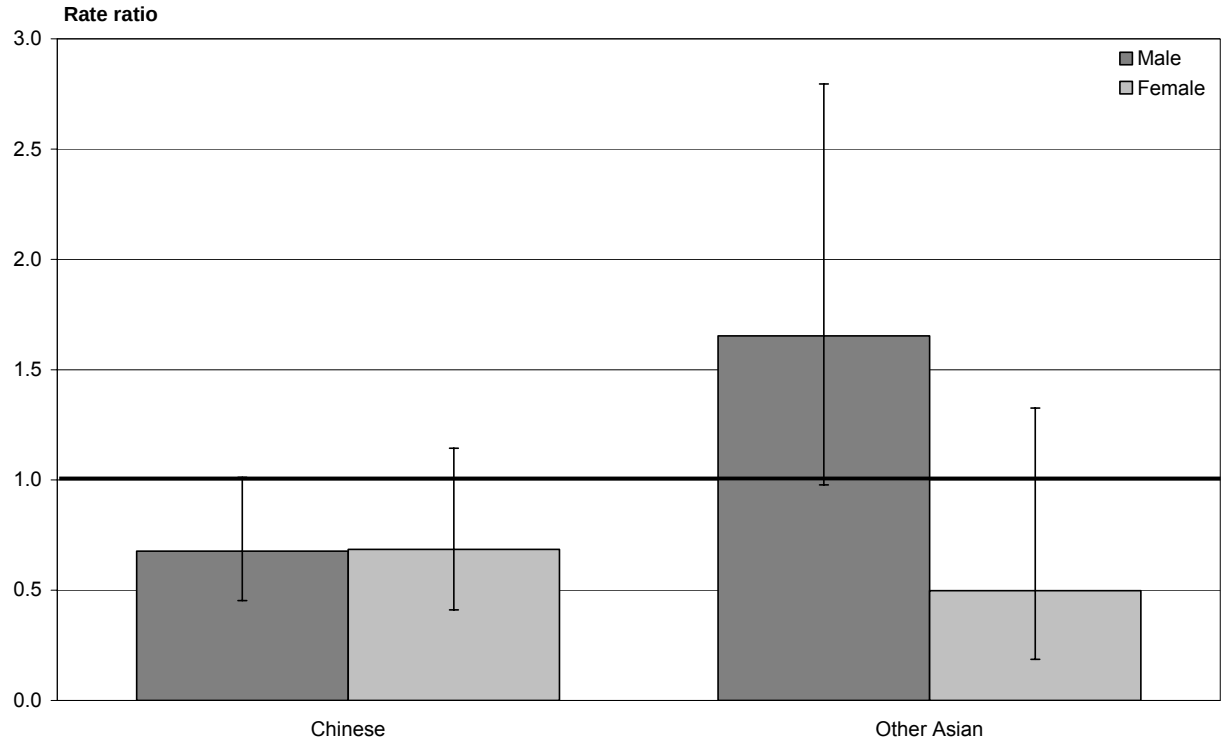
Note: Age-standardised to WHO world population (65+ years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Lung cancer registrations are significantly lower for Chinese and Indian males (and almost so for Chinese females) than for the total population.
- Among the Asian ethnic groups, the age-standardised lung cancer registration rate is higher for Other Asian than Chinese and Indian ethnic groups (both sexes), although the differences are not statistically significant at the 5% level.

Lung cancer mortality

Figure 40: Standardised rate ratios* for lung cancer mortality, by Asian ethnic group and sex, 65+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population (65+ years). SRR could not be calculated for the Indian ethnic group because of small numbers.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Lung cancer mortality is 1.5 times higher for Other Asian males than for the total population, a difference that is borderline significant.
- Chinese males have an age-standardised lung cancer mortality rate that is borderline significantly lower than the total population, and almost so for Chinese females.

Non-lung cancer

Non-lung cancer is used in this report as a proxy for cancers not caused by tobacco use or exposure to second-hand smoke.

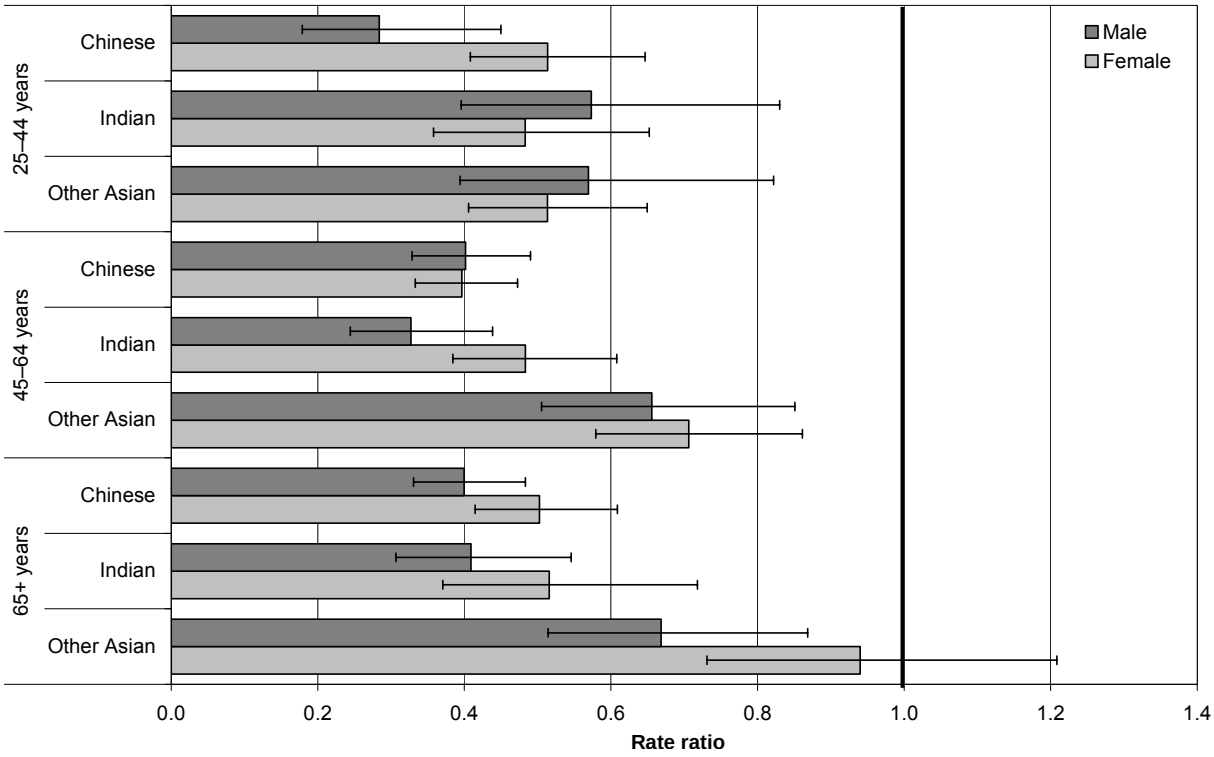
Table 22: Age-specific rate (per 100,000) of non-lung cancer registrations (1997–2001) and non-lung cancer mortality (1998–2002), by Asian ethnic group and sex

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Non–lung cancer registrations (25–44 years)	29.3 (17.7–45.8)	89.5 (70.4–112.2)	54.5 (36.5–78.3)	80.1 (57.9–107.8)	55.7 (37.3–80.0)	87.9 (68.7–110.9)	97.4 (93.7–101.2)	169.6 (164.9–174.4)
Non–lung cancer registrations (45–64 years)	228.5 (185.7–278.1)	254.4 (212.5–302.1)	170.2 (124.6–227.0)	301.9 (237.5–378.5)	298.6 (231.4–379.2)	396.8 (327.6–476.3)	588.8 (578.3–599.5)	653.8 (642.9–664.8)
Non–lung cancer registrations (65+ years)	871.5 (722.5–1042.1)	711.4 (581.8–861.2)	1005.9 (749.0–1322.6)	682.8 (483.2–937.3)	1680.4 (1285.4–2158.6)	1251.2 (963.6–1597.8)	2693.9 (2661.5–2726.5)	1525.2 (1503.8–1546.9)
Non–lung cancer mortality (25–44 years)	10.8 (4.3–22.3)	20.3 (11.8–32.5)	9.4 (3.1–21.9)	16.8 (7.7–31.8)	3.8 (0.5–13.9)	21.1 (12.3–33.7)	21.7 (20.0–23.6)	31.5 (29.5–33.6)
Non–lung cancer mortality (45–64 years)	83.1 (58.2–115.0)	74.4 (52.6–102.1)	74.0 (45.2–114.3)	96.6 (61.9–143.8)	107.0 (68.5–159.1)	107.0 (72.7–151.8)	187.1 (181.2–193.1)	189.1 (183.2–195.1)
Non–lung cancer mortality (65+ years)	435.7 (332.5–560.9)	359.1 (269.0–469.7)	572.0 (383.1–821.5)	485.2 (319.7–705.9)	798.9 (535–1147.4)	703.8 (492.9–974.4)	1193.5 (1172.0–1215.3)	831.2 (815.4–847.3)

Source: New Zealand Health Information Service, Ministry of Health

Non-lung cancer registrations

Figure 41: Standardised rate ratios* for non-lung cancer registrations, by Asian ethnic group, age and sex, 1997–2001



Source: New Zealand Health Information Service, Ministry of Health

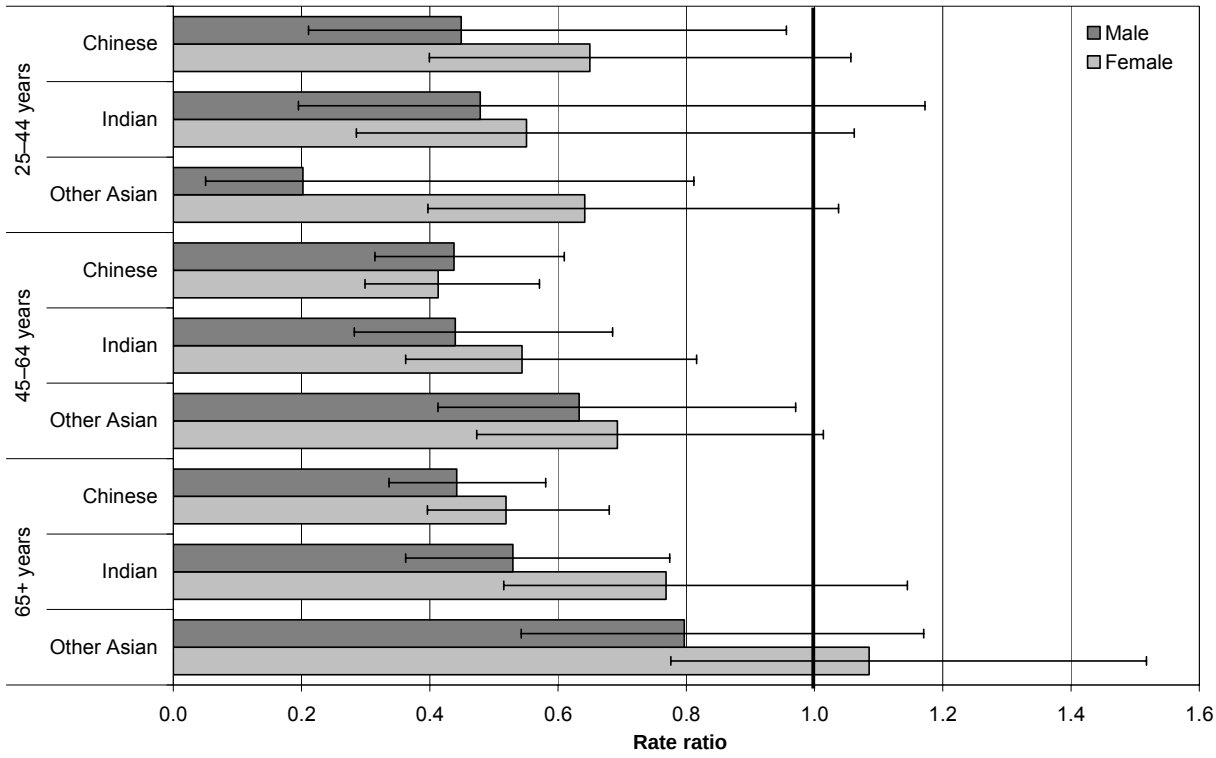
Note: Age-standardised within age categories to WHO world population.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Non-lung cancer registration rates are significantly lower in all Asian ethnic groups, across all age-by-sex groups, than in the total population (with the exception of Other Asian females aged 65+).
- In the 65+ age group, cancer registrations are significantly higher among Other Asian females than in Chinese and Indian females.

Non-lung cancer mortality

Figure 42: Standardised rate ratios* for non-lung cancer mortality, by Asian ethnic group, age and sex, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised within age categories to WHO world population.

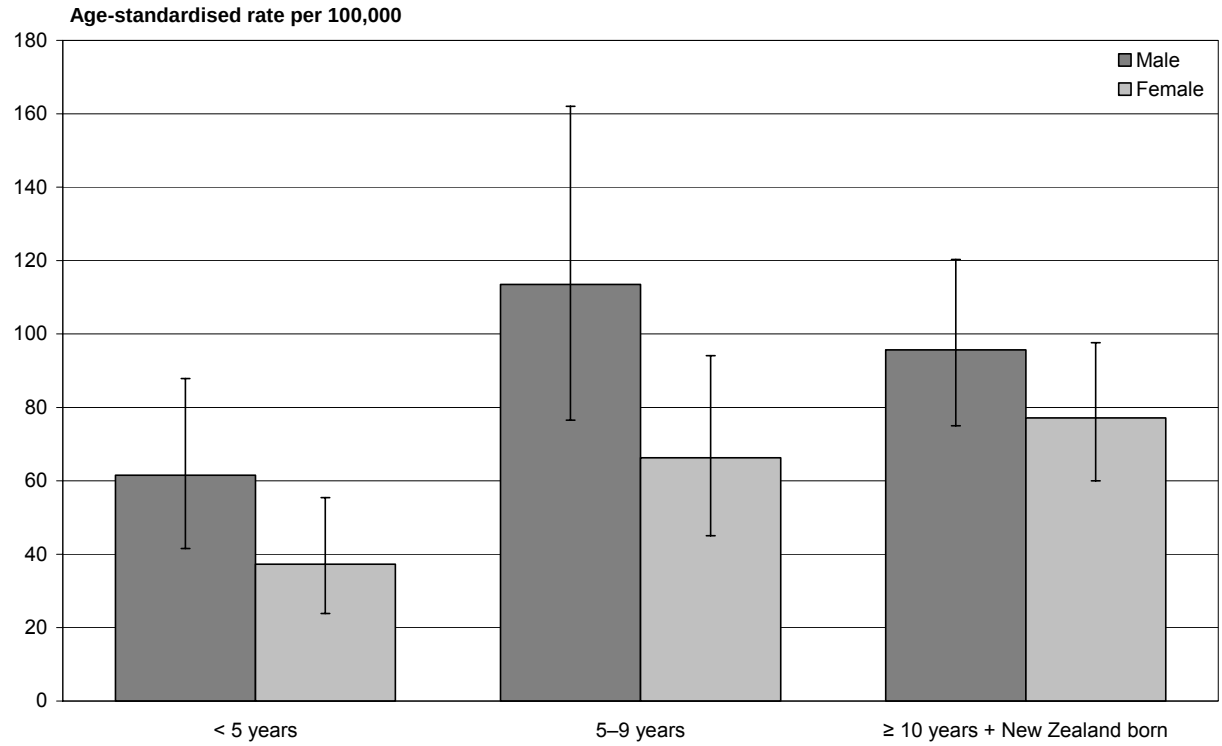
* The reference group (rate ratio = 1) is the total New Zealand population.

- Non-lung cancer mortality is lower in all Asian ethnic groups than in the total population for all age-by-sex groups, again with the exception of older Other Asian females (who have a similar rate to the all New Zealand average).
- Among older women, Other Asians have a significantly higher non-lung cancer mortality rate than Chinese women.

Duration of residence

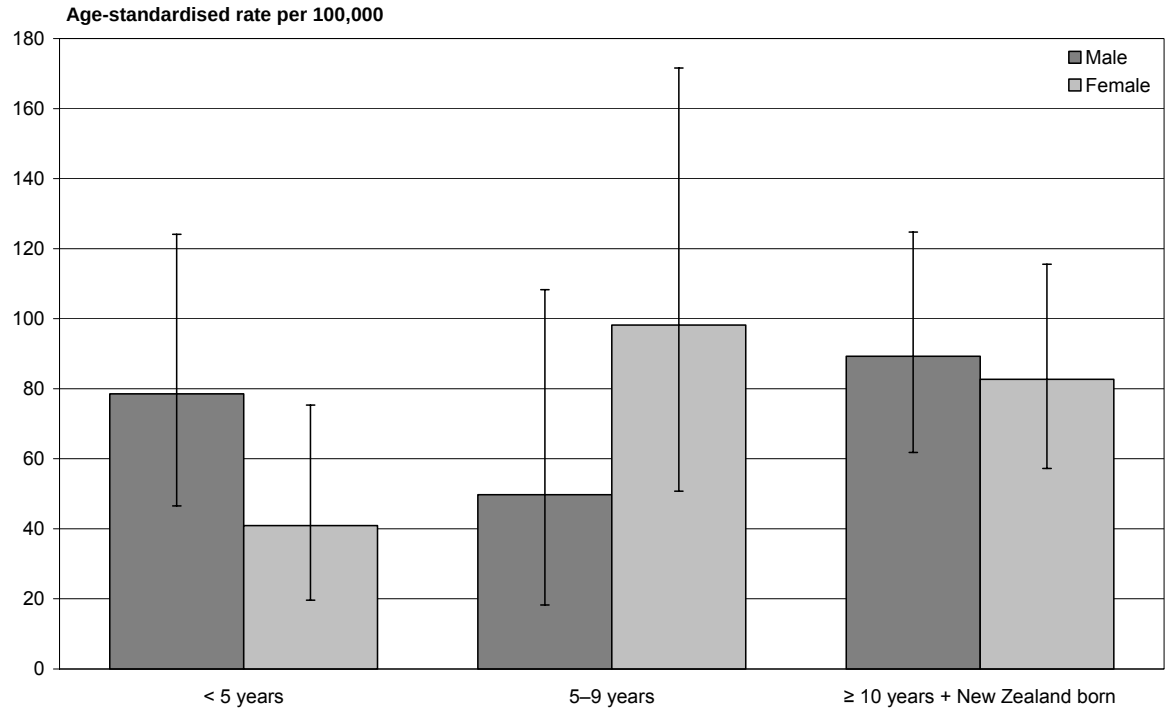
All cancer mortality by duration of residence

Figure 43: Age-standardised rate (per 100,000) of all cancer mortality for Chinese, by duration of residence in New Zealand and sex, 25+ years, 1998–2002



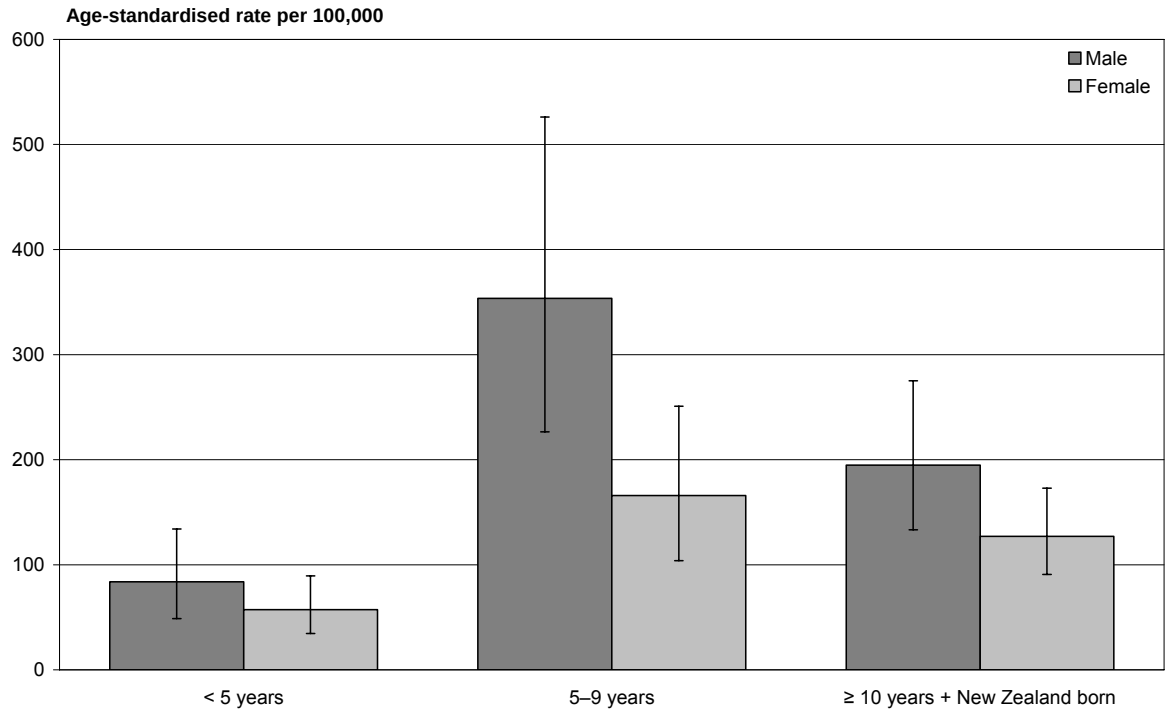
Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

Figure 44: Age-standardised rate (per 100,000) of all cancer mortality for Indians, by duration of residence in New Zealand and sex, 25+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

Figure 45: Age-standardised rate (per 100,000) of all cancer mortality for Other Asians, by duration of residence in New Zealand and sex, 25+ years, 1998–2002

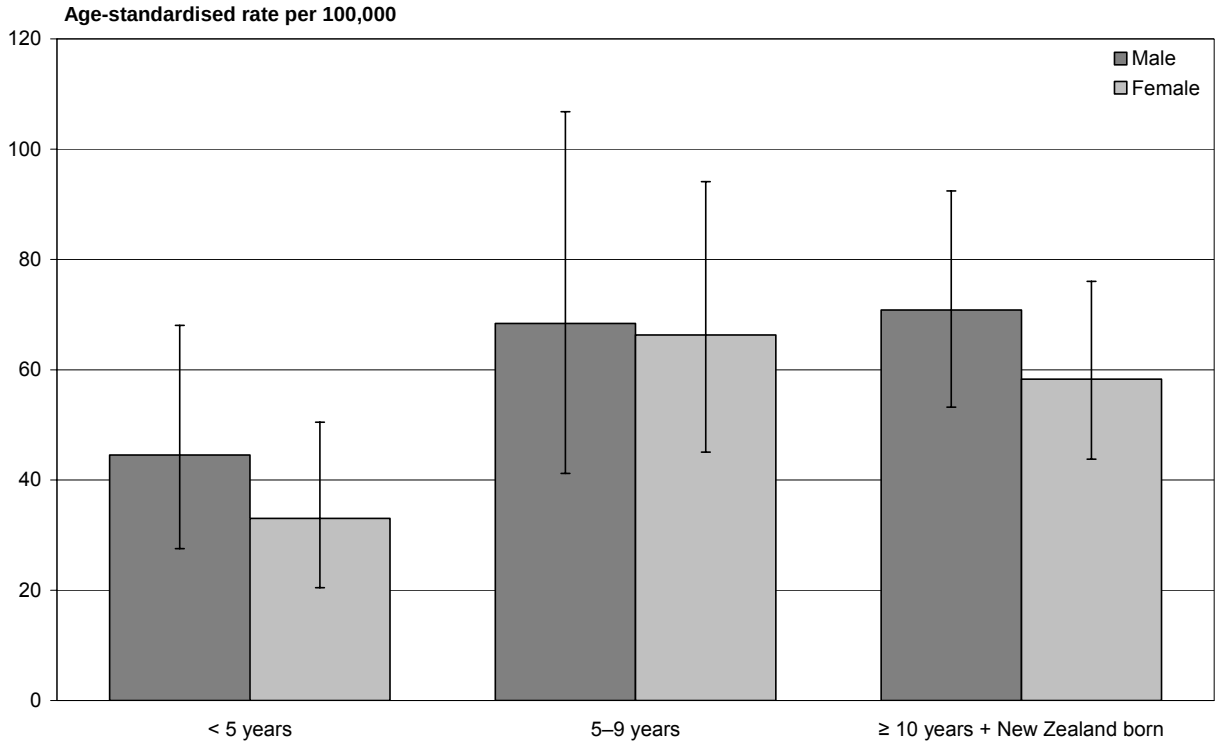


Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

For most Asian ethnic groups (except Indian males), there is a tenancy to increase in all cancer mortality when duration of residence in New Zealand increases from < 5 years to 5–9 years, but no further increase in the mortality when residence increases from 5–9 years to 10 years or longer.

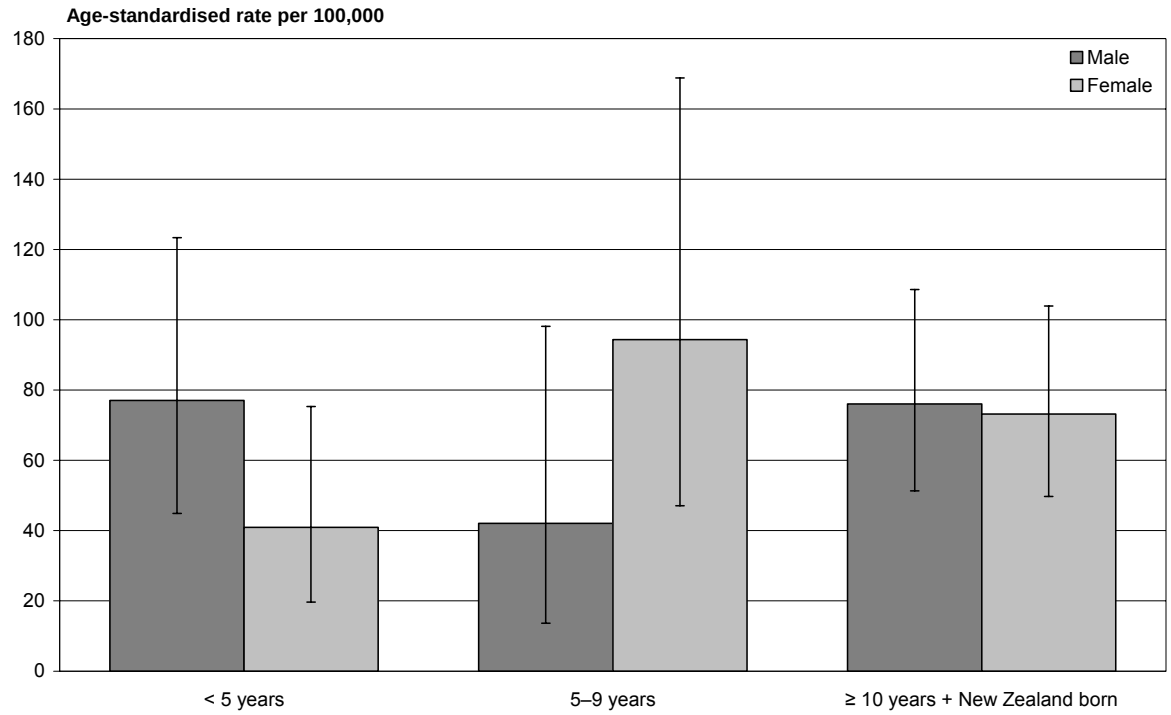
Non-lung cancer mortality by duration of residence

Figure 46: Age-standardised rate (per 100,000) of non-lung cancer mortality for Chinese, by duration of residence in New Zealand and sex, 25+ years, 1998–2002



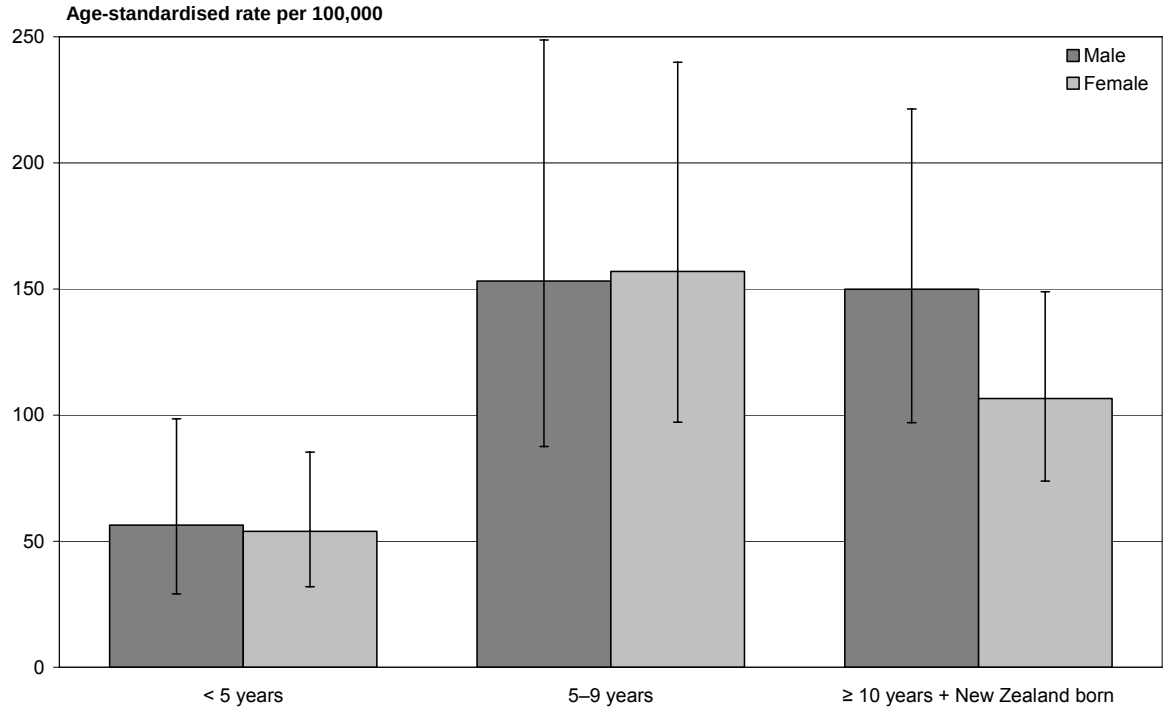
Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

Figure 47: Age-standardised rate (per 100,000) of non-lung cancer mortality for Indians, by duration of residence in New Zealand and sex, 25+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

Figure 48: Age-standardised rate (per 100,000) of non-lung cancer mortality for Other Asians, by duration of residence in New Zealand and sex, 25+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (25+ years).

- Again there is a tenancy for non-lung cancer mortality to increase in most Asian ethnic groups except Indian males when duration of stay in New Zealand increases from < 5 years to 5–9 years.

Breast cancer

Breast cancer is the most common cancer among females (excluding non-melanotic skin cancer), contributing to nearly one-fifth of all cancer deaths among women in New Zealand. Substantial reduction in the risk of dying from breast cancer is possible through mammography screening.

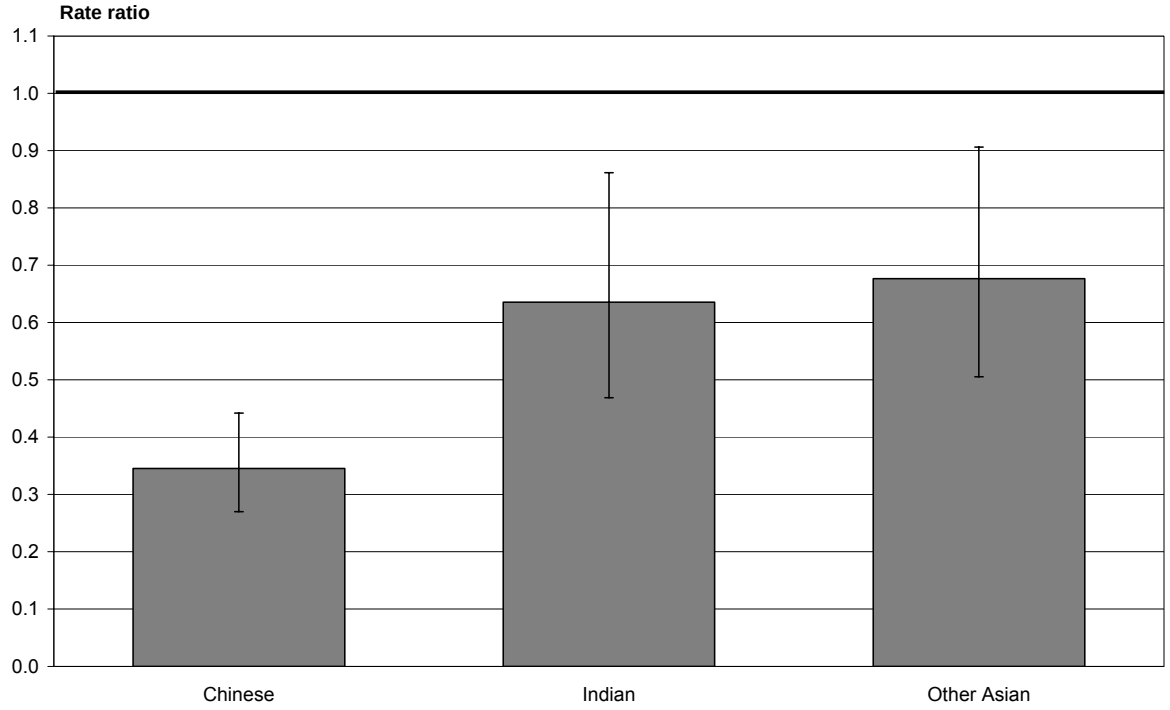
Table 23: Rate (per 100,000) of breast cancer registrations (1997–2001) and mortality (1998–2002), by Asian ethnic group

	Chinese	Indian	Other Asian	Total population
Female breast cancer registrations (45+ years)	100.2 (77.5–127.5)	161.2 (119.2–213.1)	173.0 (131.7–223.2)	292.7 (286.9–298.5)
Female breast cancer mortality (45+ years)	21.3 (11.6–35.7)	29.6 (13.5–56.2)	41.1 (22.4–68.9)	84.5 (81.4–87.7)

Source: New Zealand Health Information Service, Ministry of Health

Breast cancer registrations

Figure 49: Standardised rate ratios* for breast cancer registrations by Asian ethnic group, 45+ years, 1997–2001



Source: New Zealand Health Information Service, Ministry of Health

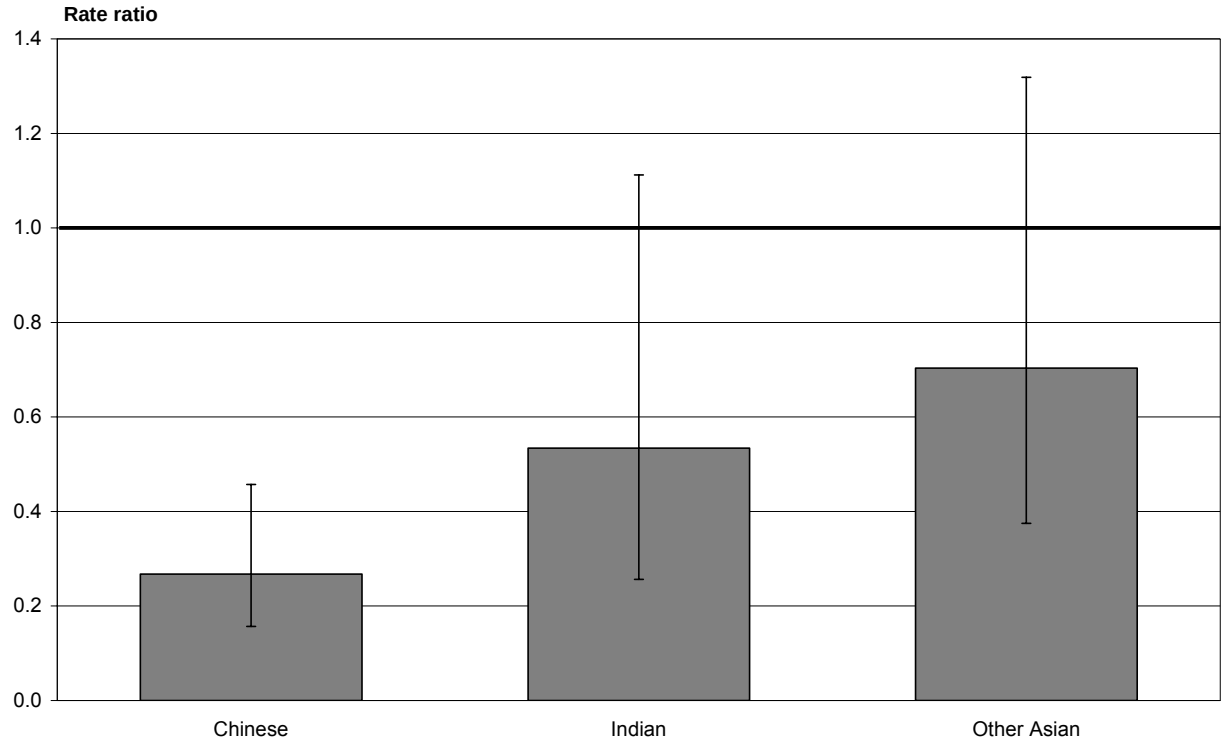
Note: Age-standardised to WHO world population (45+ years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Breast cancer registrations are significantly lower than the New Zealand average for Chinese, Indian and Other Asian females.
- Among the Asian ethnic groups, breast cancer registrations are significantly higher for Indian and Other Asian than Chinese females.

Breast cancer mortality

Figure 50: Standardised rate ratios* for breast cancer mortality, by Asian ethnic group, 45+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (45+ years).
* The reference group (rate ratio = 1) is the total New Zealand population.

- Breast cancer mortality is significantly lower for Chinese and most probably Indian women than the total population. It may also be lower for Other Asian women, but the confidence interval is wide and extends well beyond 1.
- Among the Asian ethnic groups, breast cancer mortality may be higher for Other Asian and possibly Indian than Chinese women. However, the differences are not statistically significant, perhaps reflecting small numbers.

Stomach cancer

Stomach cancer comprises two distinct sub-types: cancer of the body of the stomach (related to *Helicobacter pylori* infection and the use of salt as a food preservative) and cancer of the oesophago-gastric junction (related to gastro-oesophageal reflux disease). A proportion of stomach cancers also display a familial (genetic) pattern. It is the latter that is believed to particularly affect some East Asian families. Due to data restrictions, all types of stomach cancer have been combined here.

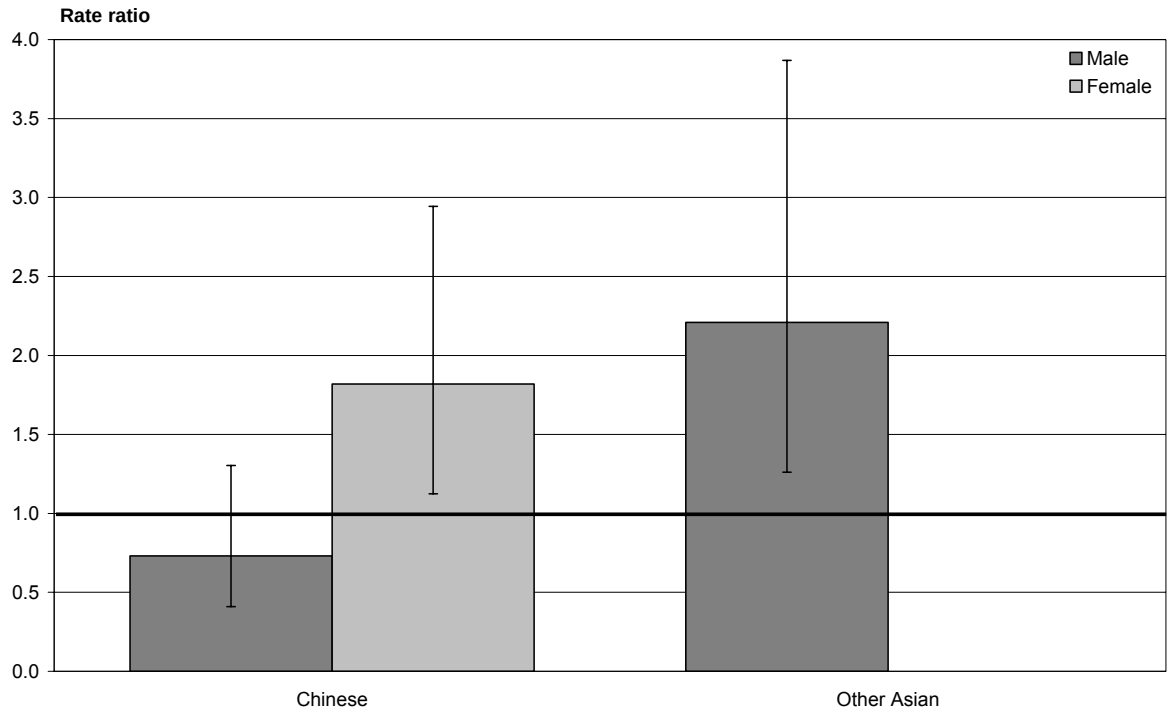
Table 24: Rate (per 100,000) of stomach cancer registrations (1997–2001) and mortality (1998–2002), by Asian ethnic group and sex

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Stomach cancer registrations (45+ years)	22.8 (12.1–38.9)	27.3 (16.2–43.2)	–	–	65.2 (38.0–104.4)	–	38.5 (36.3–40.8)	21.7 (20.2–23.4)
Stomach cancer mortality (45+ years)	12.3 (4.9–25.3)	16.7 (8.3–29.9)	15.6 (5.1–36.3)	–	34.5 (15.8–65.5)	–	31.2 (29.2–33.2)	17.0 (15.6–18.4)

Source: New Zealand Health Information Service, Ministry of Health

Stomach cancer registrations

Figure 51: Standardised rate ratios* for stomach cancer registrations, by Asian ethnic group and sex, 45+ years, 1997–2001



Source: New Zealand Health Information Service, Ministry of Health

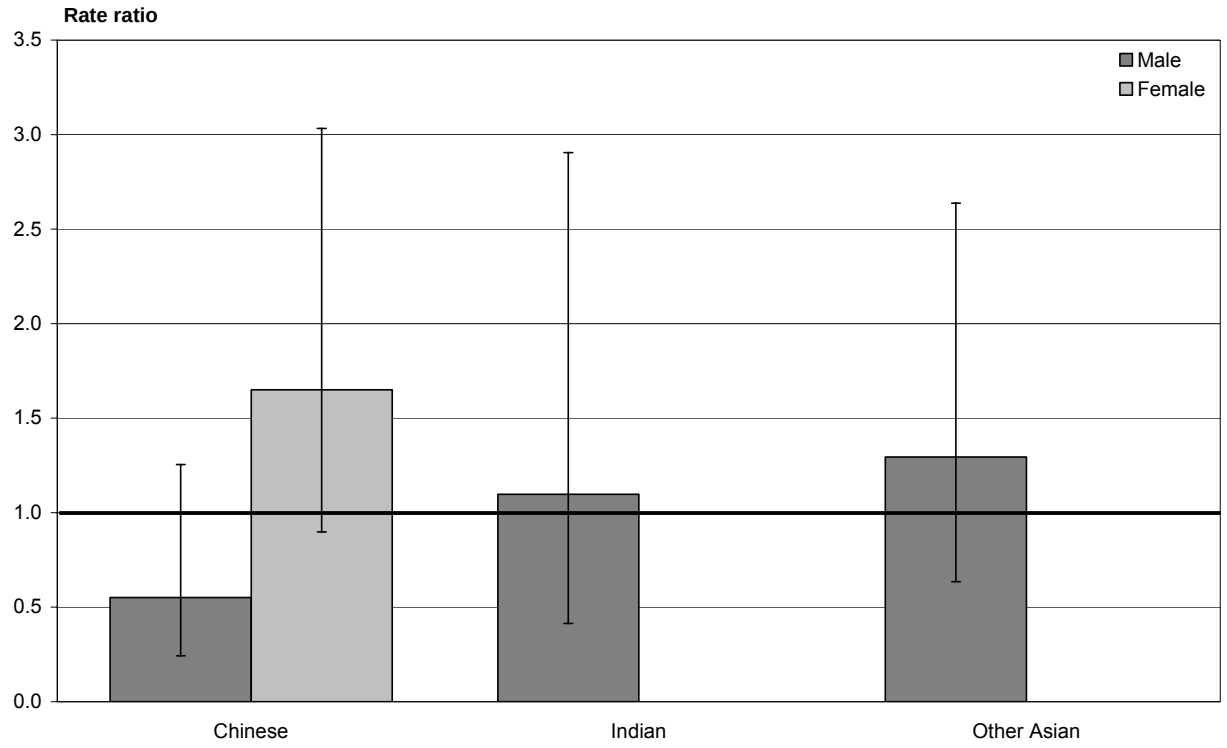
Note: Age-standardised to WHO world population (45+ years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Stomach cancer registrations are significantly higher for Chinese females and Other Asian males than for the total population.
- The rates for Indian are uncertain due to small numbers.

Stomach cancer mortality

Figure 52: Standardised rate ratios* for stomach cancer mortality, by Asian ethnic group and sex, 45+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health

Note: Age-standardised to WHO world population (45+ years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- Stomach cancer mortality is higher for Chinese females than for the national average (although the confidence interval just includes 1).
- With the exception of Chinese, stomach cancer mortality is higher in Indian and Other Asian males than in their female counterparts (although again rate estimates are highly uncertain due to small numbers).
- The (possibly) increased stomach cancer risk among Chinese females in particular may reflect a familial pattern.

Fall-related injury

Fall-related injuries among older people are a major cause of morbidity and mortality in this age group, both in New Zealand and throughout the developed world. This indicator has been selected to reflect the health of older people specifically, although this age group is also represented in the other adult indicators presented earlier in this report. Two sub-indicators are included, namely falls-related hospitalisations and deaths.

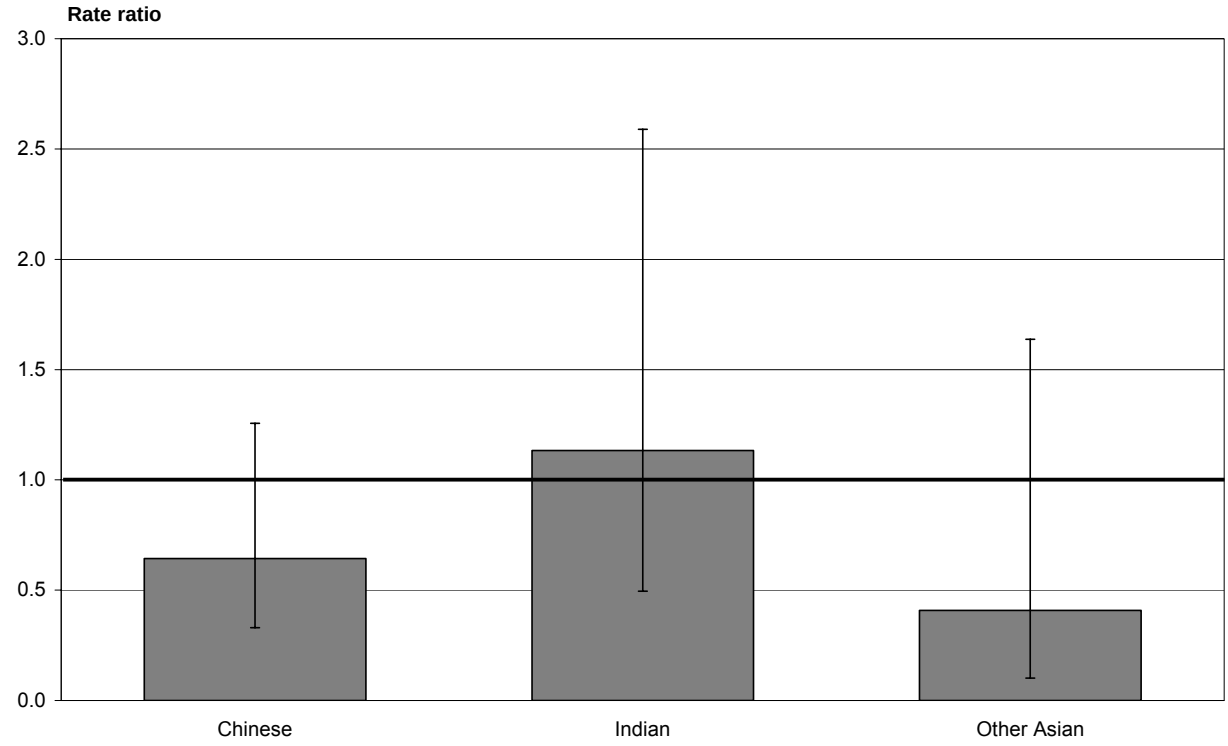
Table 25: Rate (per 100,000) of fall-related injury hospitalisations (1999–2003) and mortality (1998–2002), by ethnic group

	Chinese	Indian	Other Asian	Total population
Falls injury hospitalisation (65+ years)	31.5 (14.4–59.9)	56.4 (20.7–122.8)	–	56.4 (53.3–59.6)
Falls injury mortality (65+ years)	21.0 (7.7–45.8)	–	57.2 (18.6–133.4)	48.9 (46.1–51.9)

Source: New Zealand Health Information Service, Ministry of Health

Fall-related injury hospitalisations

Figure 53: Standardised rate ratios* for fall-related injury hospitalisations, by Asian ethnic group, 65+ years, 1999–2003



Source: New Zealand Health Information Service, Ministry of Health

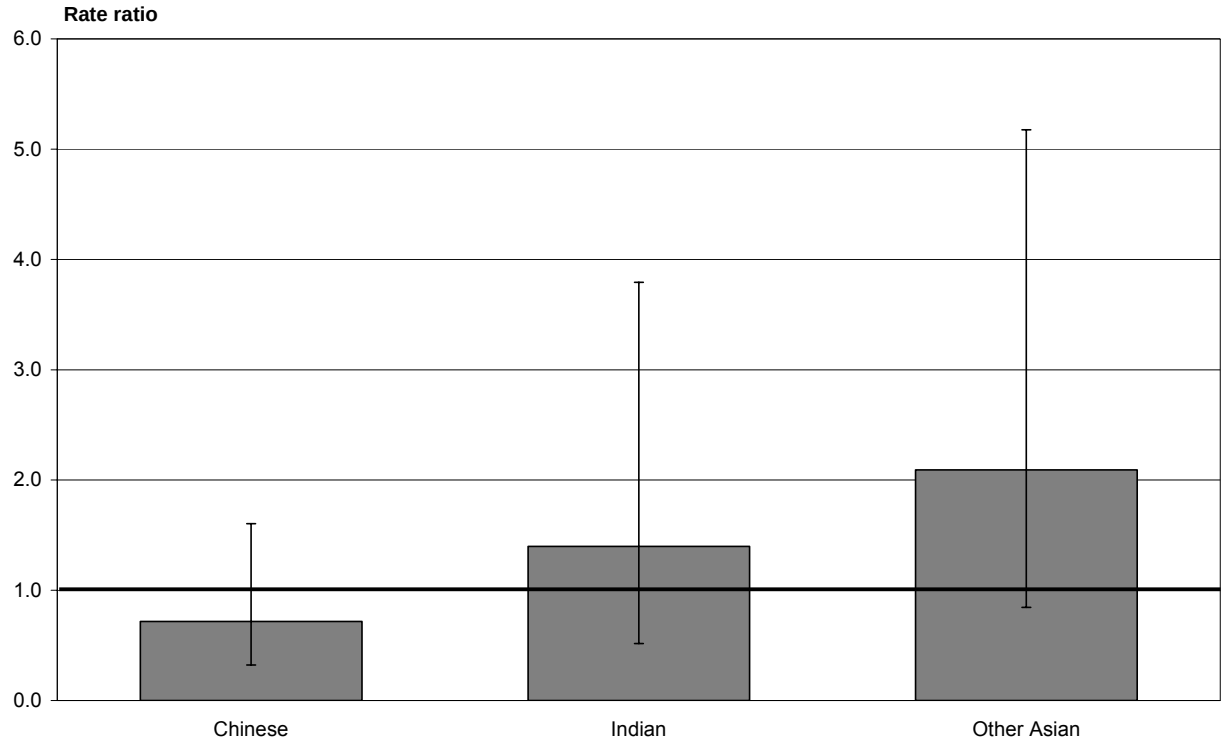
Note: Age-standardised to WHO world population (65+ years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- There is no significant difference in fall-related injury hospitalisations between Asian ethnic groups and the total population. However, the point estimates for Chinese and possibly Other Asian, but not Indian, ethnic groups suggest that rates may in fact be lower in these groups (confidence intervals are wide, reflecting small numbers).

Falls injury mortality

Figure 54: Standardised rate ratios* for falls injury mortality, by Asian ethnic group, 65+ years, 1998–2002



Source: New Zealand Health Information Service, Ministry of Health
Note: Age-standardised to WHO world population (65+ years).
* The reference group (rate ratio = 1) is the total New Zealand population.

- There is no significant difference in fall-related mortality between Asian ethnic groups and the total population, although the rate ratio for Other Asians is almost significant.
- Note that the falls mortality and hospitalisation rates are reasonably consistent for Chinese and Indian ethnic groups, but less so for the Other Asian group.

Summary

- Indian males and females have significantly higher cardiovascular disease hospitalisation and mortality rates than the total population. While not unexpected, this represents a major finding of this report.
- There is a clear dose-response relationship* between duration of residence in New Zealand and cardiovascular disease mortality among Chinese and Other Asian ethnic groups (both sexes) and among Indian females.
- Ischaemic heart disease hospitalisation is significantly higher for Indian males and females across all age groups than the total population.
- Ischaemic heart disease mortality is significantly higher in Indian females than in their Chinese and Other Asian counterparts.
- In the 45 to 64 years age group, stroke hospitalisation is significantly higher for Other Asians than for the total population.
- The prevalence of self-reported diabetes is over three times higher for Indian people than for the total population. Again, this is not unexpected, but remains a major finding of this report.
- Cancer registrations and mortality rates in the 25 to 44 and 45 to 64 years age group are lower than the total population for all Asian ethnic groups.
- Stomach cancer registrations are significantly higher for Chinese females and Other Asian males than for the total population. This finding may reflect familial factors.
- Breast cancer registrations are significantly lower for Chinese, Indian and Other Asian females than for the total population. Breast cancer mortality is also significantly lower for Chinese women, and most probably also for Indian and Other Asian women (although the difference does not quite reach conventional levels of statistical significance for these groups).

* That is, the longer the duration of residence in New Zealand, the higher the rate.

Asian Health Website

'One-stop health website for Asian people launched'

The Asian health website **www.asianhealth.govt.nz** was successfully launched on 29 June 2005. With an easy-to-remember web address, the website will allow health professionals and the community to find and download health fact-sheets and information about health services and service providers. Information is currently available in English and Asian languages, such as Chinese, Hindi, Korean, Vietnamese, Khmer and Japanese.

'This initiative is an attempt to improve access to health services for the Asian community,' says Janet Chen of Auckland Regional Public Health Service. Links to important local and international websites are also offered to the community.

At initial set-up, as many as 40 organisations in the Auckland region have contributed information to the Asian health website. The website will be updated regularly and expanded as more information becomes available. This project is a response to what the Asian community has told the Asian Public Health Project in 2003. The development of the website was confirmed following the Asian Health Information Needs Analysis in early 2004.

Posters about the website in English and Chinese are available at: Auckland Regional Public Health Service, Cornwall Complex Resource Centre (phone: 09 623 4600 extension 27188).

Update: During the period of 20 June to 16 September 2005, there were 23,844 total hits to the website, with 8163 total page views, including an average of 91 page views per day and 9.36 average page views per visitor.

If you have any information you think is suitable for the website, please contact:

Janet Chen
Asian Public Health
Auckland Regional Public Health Service
Phone: 09 623 4600 x 27193
Fax: 09 623 4633
Email: JanetChen@adhb.govt.nz

Chinese New Settlers Services Trust

Chinese New Settlers Services Trust (CNSST) is a charitable trust that offers culturally and linguistically appropriate services to both Chinese new settlers and the community. Activities, in partnership with local and central government, NGOs and the community, include social services case work, English and Chinese language education, cultural and social maintenance activities, as well as employment assistance and education. Services and programmes are available to all people in New Zealand who are Chinese-speaking or have Chinese cultural background (regardless of country of origin, religion, age or gender).

The vision of the Trust is to meet the needs of the Chinese elderly, children and young people, and all other new settlers, and to facilitate the successful integration of Chinese new settlers into the wider New Zealand society.

CNSST runs safety workshops (eg, Injury Prevention, Tai Chi, and WaterSafety). Road Safety projects offer translation, media safety messages and educational seminars and have recently been awarded a Community Safety Award from the Auckland City Council. Excellent outcomes have been achieved in the learner and restricted licensing workshops, with a 99% success rate to date. The social work component of the Trust enables Chinese new settlers facing difficulties in their settlement to access community and government resources, and empowers them to make positive changes.

Contact details:

Chinese New Settlers Services Trust
2nd floor, PGF Building, 128 Khyber Pass Road
Newmarket, Auckland
PO Box 8822 Symonds Street, Auckland
Phone: 09 355 0008
Fax: 09 355 0003
Email: info@cnsst.org.nz
Website: www.chineseservice.org.nz

Promoting Health in Asian Communities

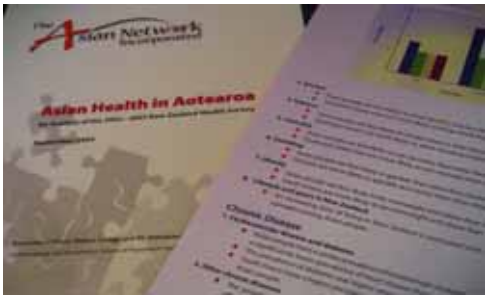
The Asian Network Incorporated (TANI) was set up with the vision of developing strong and healthy Asian communities through advocating for and promoting the wellbeing of these communities. TANI offers knowledge, networks and skills that are culturally appropriate for Asian communities and agencies which serve them.

TANI has been involved in many key initiatives over the past five years addressing the health needs of Asian communities in the Auckland region. These include implementing the TB Awareness Programme with the Indian community to raise awareness about tuberculosis and encourage people to seek early treatment; organising the 'Asian Cultural Competency Workshop: Asian cultures and values in public health' and publishing 'Asian Health in Aotearoa: An analysis of the 2002–2003 New Zealand Health Survey'. Services delivered by TANI include:

- health promotion, community development and behavioural change
- identifying the changing health needs of Asian communities
- providing culturally specific knowledge and advice
- meeting Asian health workforce needs
- sharing health information

For more information, please contact:

Phone: 09 815 7851
Fax: 09 815 7852
Email: asian_network@xtra.co.nz
Website: www.asiannetwork.org.nz



Section 4: Health Services Utilisation

Hospitalisation rates for selected high-admission conditions have been reported in the previous chapter as health outcome indicators. Here we focus on the utilisation of primary health care services, and clinical preventive services in particular, as indicators of access to the health care system more generally.

Crude rates are presented first, as in earlier chapters. However, rather than then presenting age-standardised rate ratios for comparative purposes, we have built multivariable regression models instead. This allows us to compare rates for each Asian ethnic group with a reference group (for technical reasons, this is now the European rate rather than the all New Zealand rate), controlling not only for differences in age and sex, but also deprivation and (in some models) duration of residence in New Zealand.

Primary health care services

Primary care is defined as care that a person can access without a referral and is generalist in nature. We first consider indicators relating to the utilisation of primary health care services in general, followed by indicators capturing the uptake of clinical preventive services.

Use of primary care services

Four sub-indicators are used: having a usual carer; self-reported use of conventional providers; self-reported visit to a dentist; and self-reported use of complementary/ traditional providers.

Table 26: Prevalence (per 100) of self-reported primary care services, by Asian ethnic group and sex, 15+ years, 2002/03

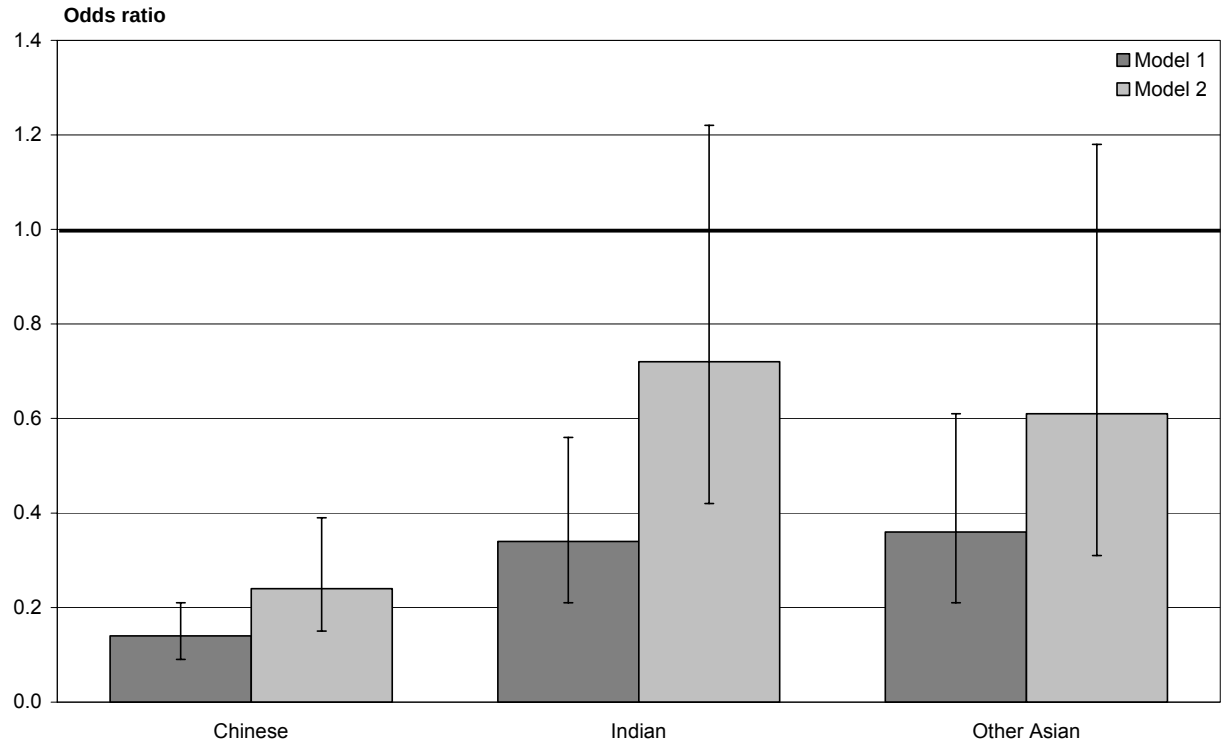
	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Usual carer	57.0 (45.3–68.7)	80.6 (73.9–87.3)	84.9 (77.8–92.1)	84.0 (75.2–92.8)	84.4 (75.1–93.8)	85.2 (75.8–94.5)
Been to the doctor	48.8 (39.1–58.4)	70.3 (62.7–77.8)	73.6 (63.1–84.1)	74.5 (64.1–84.9)	66.0 (54.9–77.1)	70.6 (60.2–81.1)
Been to a dentist	17.0 (10.5–23.5)	21.9 (15.5–28.2)	23.5 (10.7–36.4)	32.5 (20.4–44.5)	32.9 (21.9–43.9)	25.6 (16.4–34.9)
Complementary/ alternative provider use	8.2 (3.5–13.0)	19.9 (13.4–26.5)	8.3 (2.7–13.9)	9.6 (3.2–16.1)	6.9 (1.3–12.6)	12.0 (5.4–18.5)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: The crude rate for the total population has not been presented so as to avoid invalid comparisons.

Usual carer

Figure 55: Multivariate odds ratio* of having a usual carer, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group is the European ethnic group.

- Controlling for age, sex and deprivation, Chinese, Indian and Other Asian people appear less likely to have a usual carer than Europeans.
- After controlling for duration of residence in New Zealand, this association remains significant for Chinese people only.

Table 27: Multivariate odds ratios having a usual carer, by duration of residence in New Zealand, 15+ years, 2002/03

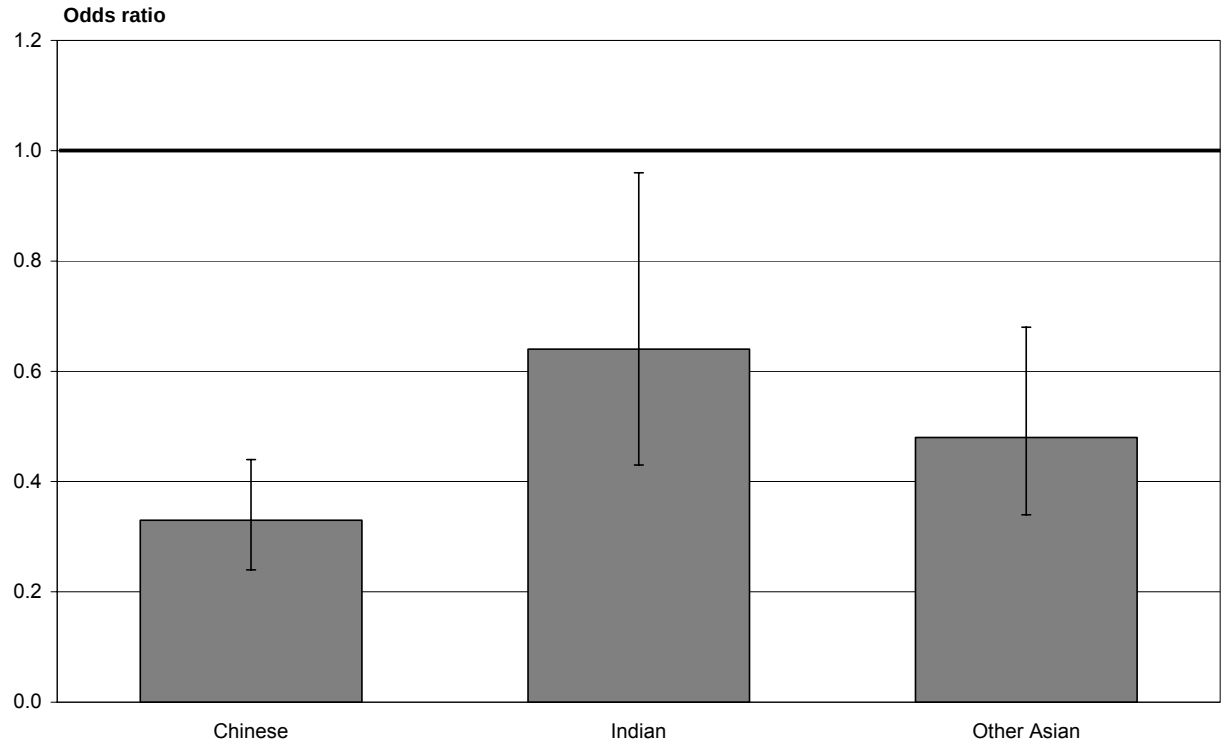
Duration of residence	Odds ratio (95% CI)
< 5 years	0.29 (0.19–0.44)
5–9 years	1.31 (0.74–2.31)
> 10 years and New Zealand born	1.00

Source: 2002/03 New Zealand Health Survey, Ministry of Health

- Controlling for Asian ethnicity, age, sex and deprivation, Asian people who have lived in New Zealand less than five years are significantly less likely to have a usual carer than those who have lived in New Zealand for 10 or more years or who were born here.

Been to a doctor

Figure 56: Multivariate odds ratio* of having been to a doctor in the last 12 months, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

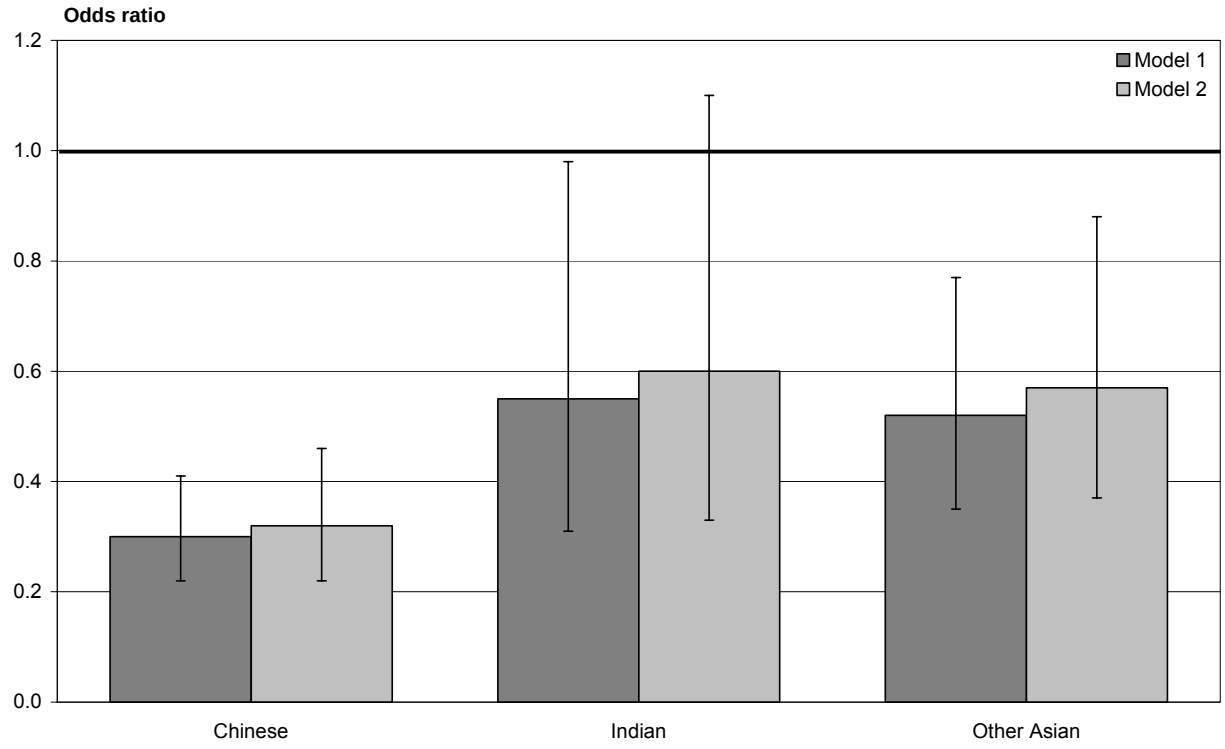
Note: Model 1: controls for age, sex and deprivation.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex and deprivation, Chinese, Indian and Other Asian people are less likely to have seen a doctor in the last 12 months than Europeans.
- Duration of residence is not included because the model including this variable did not fit the data well.

Been to a dentist

Figure 57: Multivariate odds ratio of having been to a dentist in the last 12 months, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

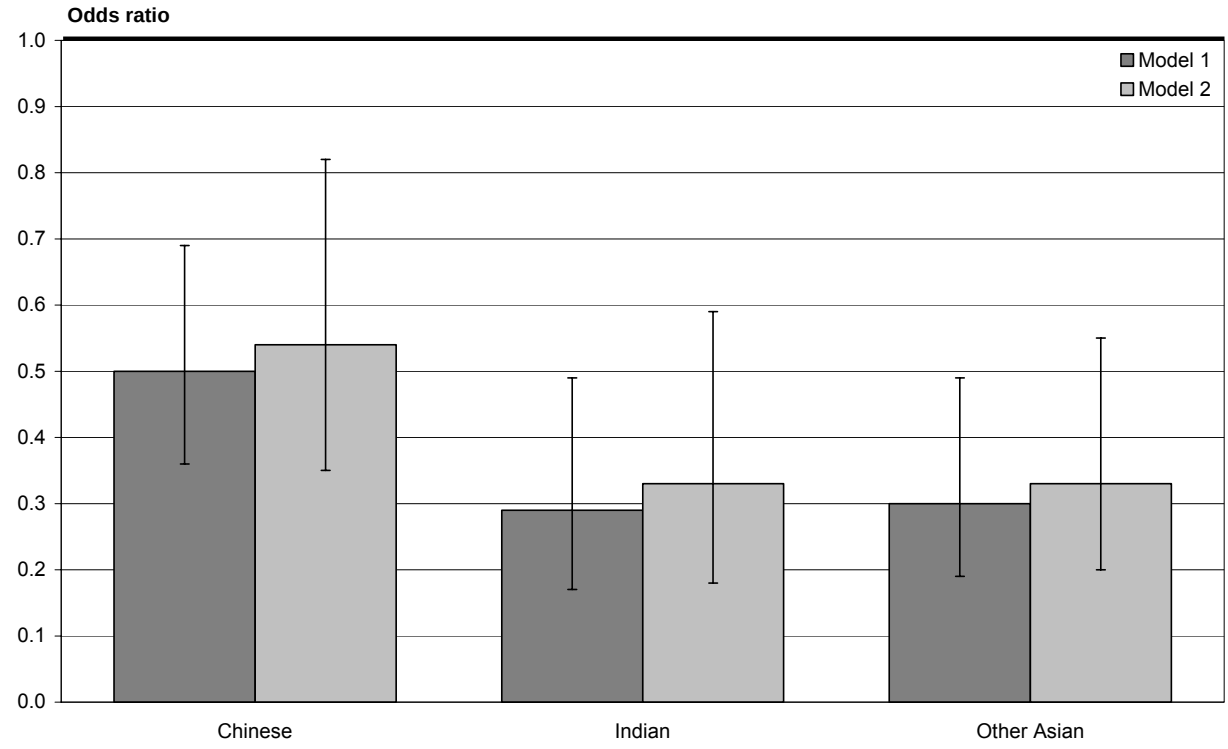
Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex and deprivation, all Asian ethnic groups are less likely to have seen a dentist than Europeans.
- Duration of residence is not associated with the use of dental services.

Complementary/alternative provider

Figure 58: Multivariate odds ratio* of having seen a complementary/alternative provider in the last 12 months, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Chinese, Indian and Other Asian people are significantly less likely to report having seen an alternative/complementary provider than Europeans, after controlling for age, sex and deprivation.
- Duration of residence in New Zealand is not associated with use of complementary/ alternative providers.

Summary

- Among the Asian ethnic groups, Chinese are less likely than New Zealand Europeans to have a usual carer (after controlling for age, sex, deprivation and duration of residence in New Zealand).
- All Asian ethnic groups are significantly less likely to have been to a doctor in the last 12 months than New Zealand Europeans.
- All Asian ethnic groups (both sexes) are less likely to have seen a complementary/ alternative provider than the New Zealand European ethnic group (after controlling for age and deprivation).

Clinical preventive service use

Clinical preventive services are preventive services delivered to individuals within a primary health care setting, such as immunisation, well child care, contraception, antenatal care and many screening programmes.

Two sub-indicators are included in this report: uptake of the organised cancer screening programmes, and uptake of (opportunistic) cardiovascular screening.

Cancer screening

Formal screening programmes for cervical cancer using cytology, and breast cancer using mammography, currently operate in New Zealand.

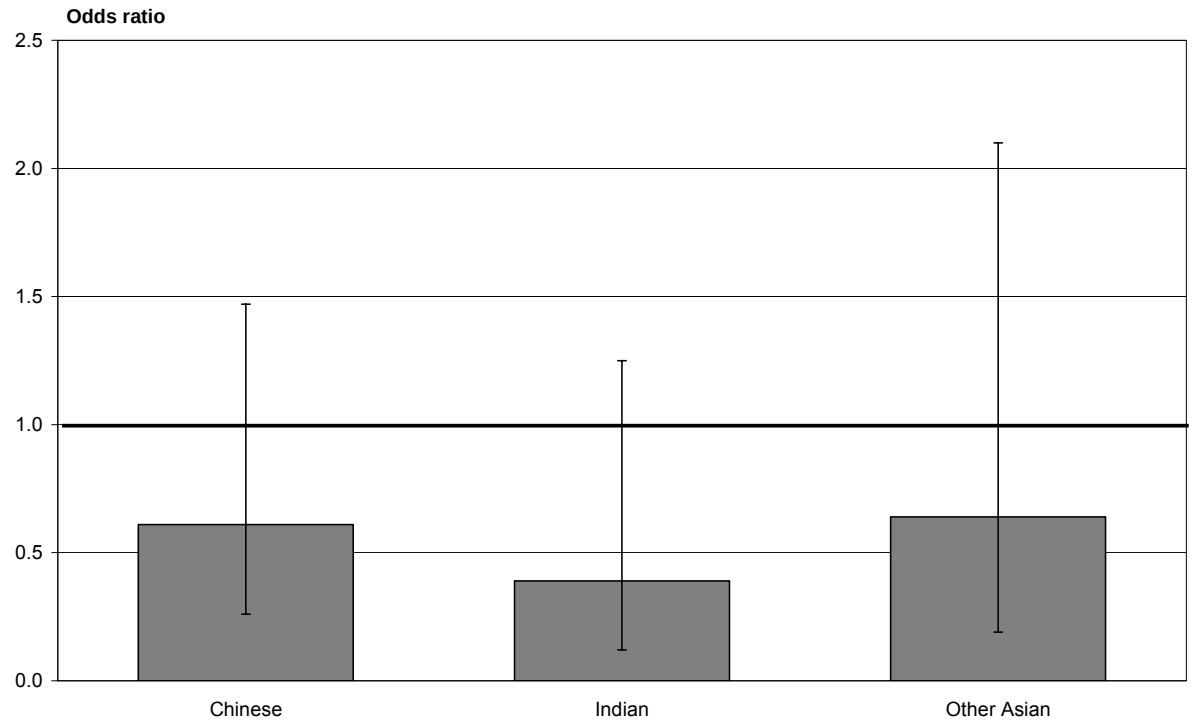
Mammography

Table 28: Rate (per 100) of uptake of breast cancer screening (50–64 years), by ethnic group, 2001/02

	Chinese	Indian	Other Asian	Total population
Mammography (50–64 years)	57.0 (55.2–58.9)	57.5 (54.9–60.3)	56.4 (53.8–59.1)	66.8 (66.4–67.1)

Source: National Screening Unit, Ministry of Health

Figure 59: Multivariate odds ratio* of having a mammogram, by ethnic group, 50–64 years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for deprivation. Controlling for duration of residence in addition to deprivation did not fit the data well and so is not reported here.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for deprivation, there is no significant association between ethnicity and screening mammography uptake for all Asian ethnic groups, although point estimates are below unity in all cases. Note that the confidence intervals are very wide, reflecting relatively small numbers.

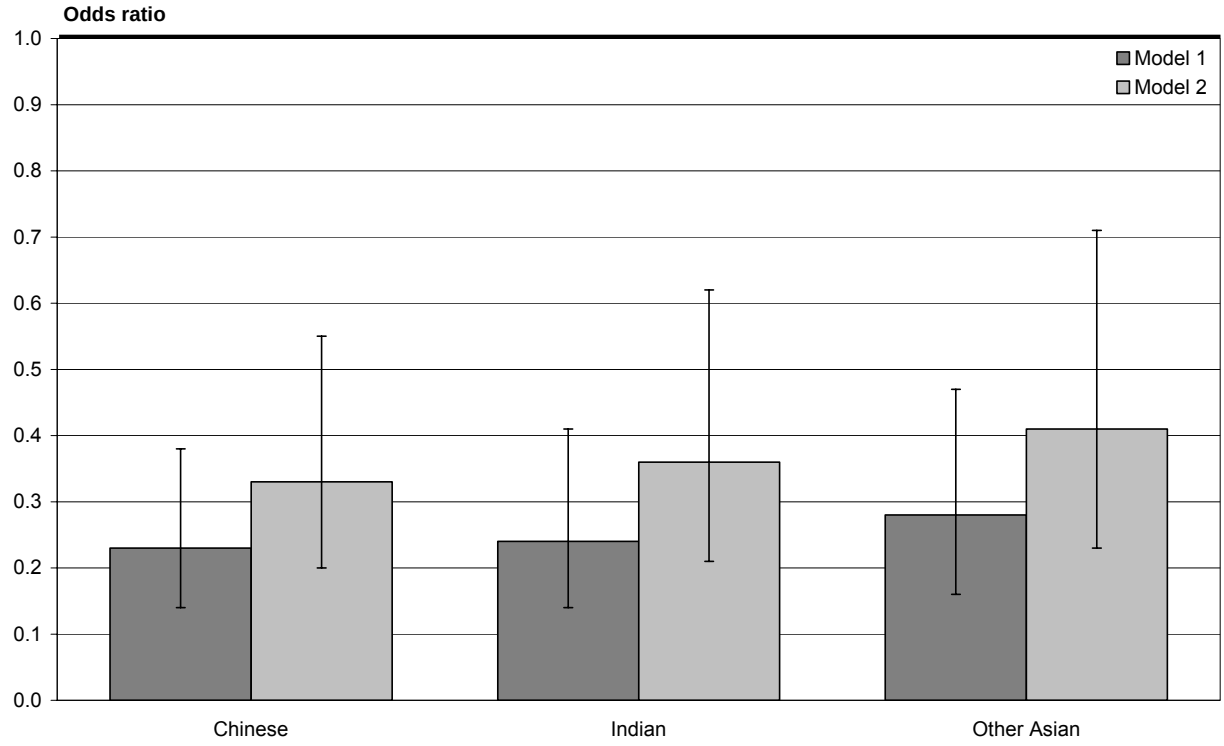
Cervical cancer screening

Table 29: Crude rate (per 100) of uptake of cervical screening, by ethnic group, 2001–2003

Cervical smear coverage (%)				
Age	**Chinese**	**Indian**	**Other Asian**	**Total population**
20–69 years	52.5 (51.7–53.2)	64.6 (63.4–65.7)	44.6 (43.8–45.4)	73.0 (72.6–73.1)

Source: National Screening Unit, Ministry of Health

Figure 60: Multivariate odds ratio* of having a cervical smear, by ethnic group, 20-69 years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age and deprivation; model 2: controls for age, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, deprivation and duration of residence, women in all Asian ethnic groups are significantly less likely to have had a cervical smear than European women.
- Uptake of cervical screening increases in all Asian ethnic groups with duration of residence in New Zealand.

Table 30: Multivariate odds ratio of having a cervical smear, by duration of residence in New Zealand, 15+ years, 2002/03

Duration of residence	All Asian women
< 5 years	0.37 (0.25–0.53)
5–9 years	0.94 (0.53–1.68)
10+ years and New Zealand born	1.00

Source: 2002/03 New Zealand Health Survey, Ministry of Health

- Controlling for Asian ethnicity, deprivation and age, there is a statistically significant association between duration of residence and participation in cervical screening by Asian women, comparing recent migrants (< 5 years) with the established community (10 or more years or born in New Zealand).

Cardiovascular screening

Three indicators of opportunistic cardiovascular screening have been selected for this report, with the data source being the 2002/03 New Zealand Health Survey: having had a blood pressure test, a cholesterol test or a diabetes test within the previous 12 months. Because the data are self-reported, their accuracy is questionable and underestimation is likely.

Table 31: Prevalence (per 100) of self-reported cardiovascular screening, by Asian ethnic group and sex, 15+ years, 2002/03

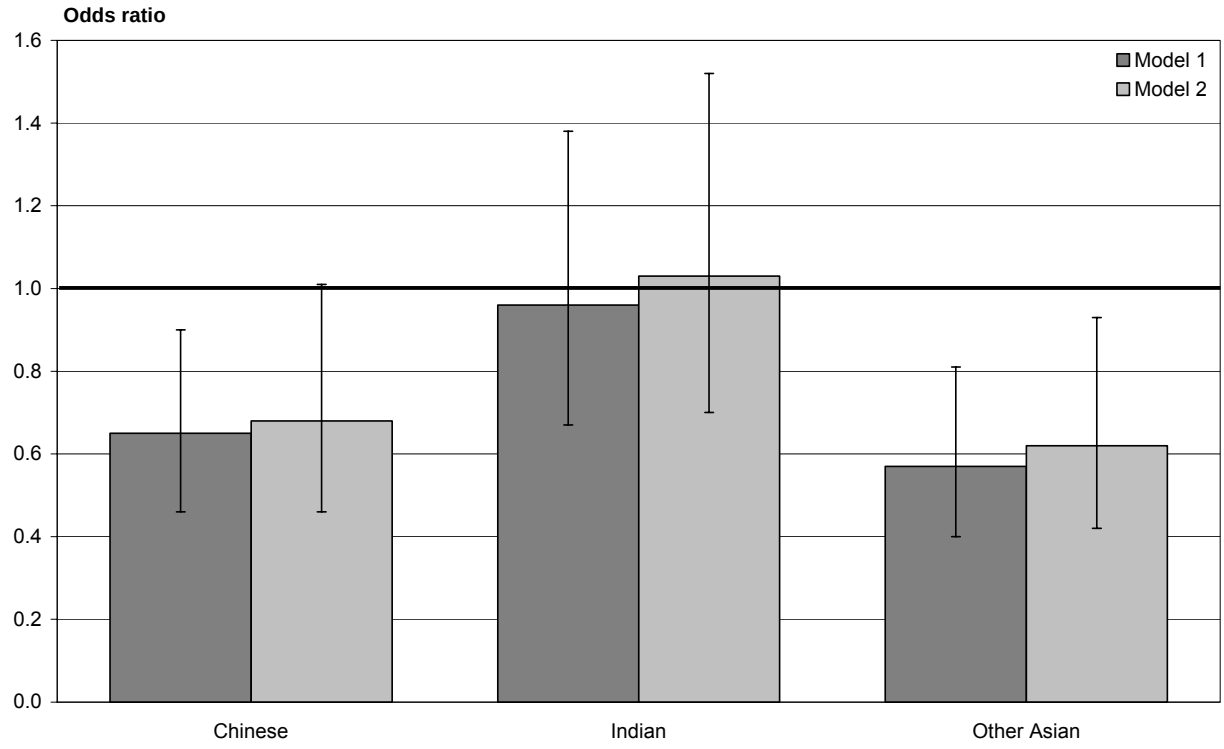
	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
Blood pressure test	33.6 (22.5–44.7)	38.8 (30.7–46.9)	45.1 (32.3–57.9)	49.3 (37.5–61.2)	30.4 (19.2–41.7)	37.1 (25.9–48.2)
Cholesterol test	18.7 (9.3–28.1)	19.3 (12.9–25.7)	36.5 (23.8–49.1)	25.7 (14.5–37.0)	26.7 (16.1–37.3)	18.3 (8.7–28.0)
Diabetes test	17.0 (8.9–25.2)	19.5 (13.1–25.8)	39.4 (25.9–52.9)	28.8 (18.0–39.7)	14.6 (7.1–22.2)	17.6 (8.3–26.9)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: The crude rate for the total population has not been presented so as to avoid invalid comparisons. Self-reported data on CVD screening are not very well reported.

Blood pressure test

Figure 61: Multivariate odds ratio* of having a blood pressure test, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

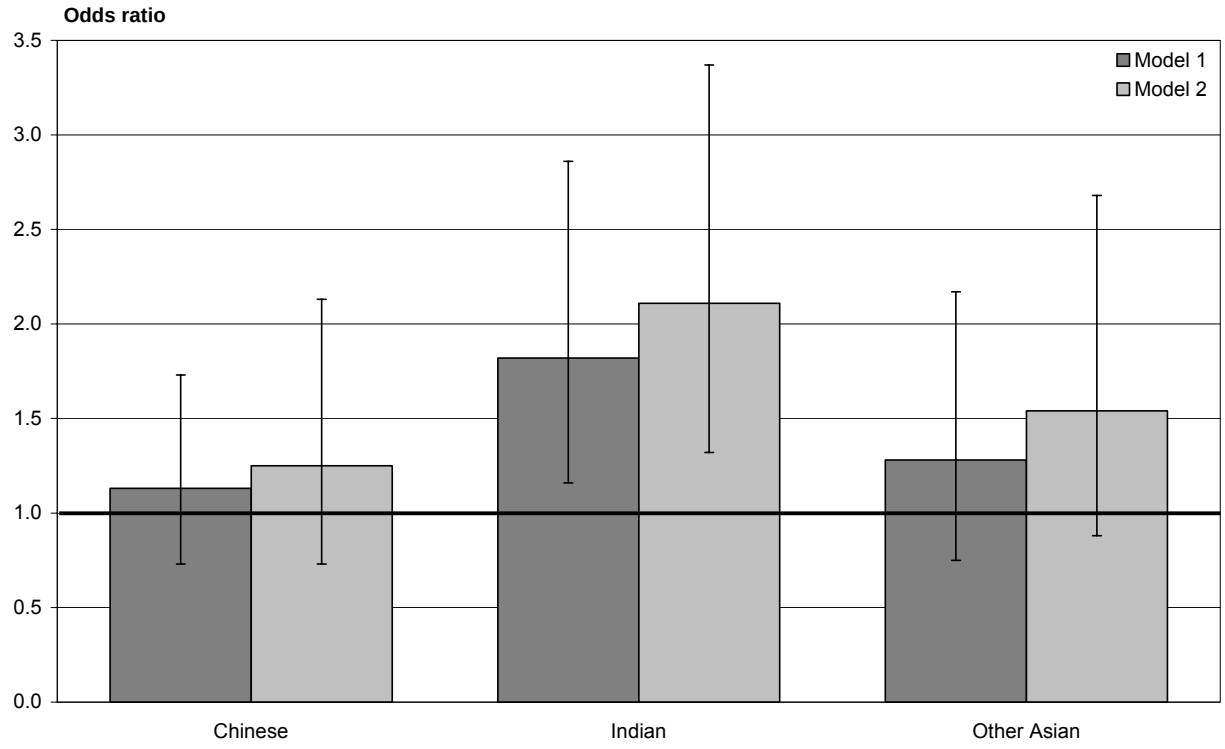
Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex and deprivation, Chinese and Other Asians – but not Indians – appear less likely to self-report having had a blood pressure test than Europeans.
- After controlling for duration of residence in New Zealand, this association remains statistically significant for Other Asians and becomes borderline significant for Chinese.

Cholesterol test

Figure 62: Multivariate odds ratios* of having a blood cholesterol test, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

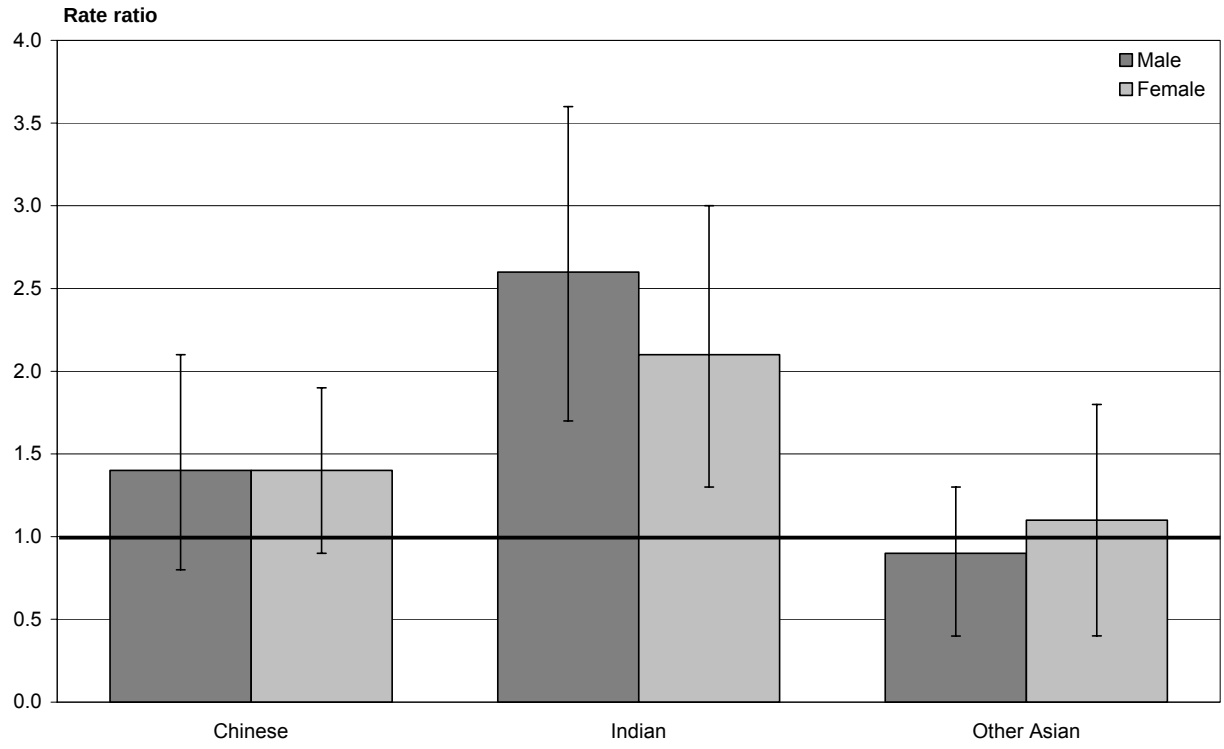
Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- After controlling for age and sex, Indians appear more likely to self-report having had a blood cholesterol test in the past 12 months than Europeans. This association strengthens after duration of residence is controlled for.
- After controlling Asian ethnicity, shorter duration of residence (< 5 years vs 10 years or more and New Zealand-born) may be associated with less likelihood of reporting a blood cholesterol test (OR 0.70, 0.46–1.06) among Asian New Zealanders, but the difference does not quite reach the conventional threshold of statistical significance.

Diabetes test

Figure 63: Standardised rate ratios* for having a diabetes test in the last 12 months, by Asian ethnic group and sex, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Age-standardised to WHO world population (15+ years). Multiple logistic regression models did not fit the data well and so standardised rate ratios are reported instead.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Indian males and females are more likely to report having been tested for diabetes than the total population.
- Chinese and Other Asians are as likely to report having been tested for diabetes as the total population.
- This suggests a good understanding among primary health care providers and the communities themselves of the higher rate of diabetes among people of Indian ethnic groups.

Summary

- Women of all Asian ethnic groups have a lower mammography screening uptake to New Zealand European women, although confidence intervals are very wide and the difference does not reach statistical significance.
- All of the Asian ethnic groups have a lower rate of cervical screening than New Zealand European women (much lower for Chinese and especially Other Asian women).
- Indians are significantly more likely to have had a cholesterol test than New Zealand Europeans.
- Indian males and females are more likely to report having been tested for diabetes in the past 12 months than the total population.

Well Women's Nursing Service
Asian Health Services

Well Women's Nursing Service (WONS) employs Chinese and Korean health promoters to provide health promotion services on a range of women's health issues.

Free cervical smear clinics are available in all areas of Auckland. Chinese and Korean health promoters work with nurses in the Howick, Epsom and Otahuhu clinics. Free smear tests are offered to women who:

- have never had a cervical smear test
- have had no cervical smear test in the last five years
- are due to have a cervical smear test and have a Community Services Card.

These Asian health promoters also offer education sessions on a range of women's health issues.

WONS provides women's health days on a regular basis to the Chinese and Korean community, promoting cervical and breast screening; and providing education on issues such as period problems, premenstrual syndrome, menopause, osteoporosis and pelvic floor exercises. Random blood testing for glucose and cholesterol levels, blood pressure checks and cervical smear tests are also included. This holistic approach enables women to have a wellness check and receive education in a language appropriate and friendly manner provided by female staff.

Chinese Women's Health Day

In addition, WONS supports the Chinese and Korean Women's Wellness Community Groups with fundraising for resources that are language and culturally appropriate. Currently, these include resources on periods, premenstrual syndrome, menopause, cystitis, contraception, sexually transmitted infections, termination of pregnancy, and osteoporosis. Indian-language resources only cover osteoporosis.

The Korean Women's Wellness Community Group has produced a contraception and sexuality education resource, currently available in the community through donations.

For more information, please contact:

Phone: 09 523 0263
Fax: 09 523 0264
Email: wonsnurse@xtra.co.nz
Website: www.wellwomensnursing.co.nz

Waitemata DHB's Asian Health Support Service

The response of Waitemata District Health Board (DHB) to Asian migrant and refugee health care needs led to the establishment of Asian Health Support Service (AHSS) in 2001. An Asian responsiveness strategy was developed to ensure health services delivered by Waitemata DHB services are accessible, culturally appropriate, effective and safe for this group of service users. The goals are:

Goal 1: to deliver services that are more responsive, accessible and culturally appropriate for the Asian population

Goal 2: to collaborate with communities and other agencies to achieve better health outcomes, improve communication, reduce inequalities and remove cultural barriers

Goal 3: to provide access to resources and Interpreters for Waitemata DHB health professionals

Goal 4: to provide cultural training for staff and develop appropriate resources to improve cultural awareness.

The service model was designed to address the access and information needs of Asian new settlers, and to provide support to health care providers (primary and secondary health care services). Services, programmes and initiatives developed since 2001 include:

- Waitemata Auckland Translation and Interpreting Service operating 24 hours a day, seven days a week)
- culturally responsive services: Asian Home Help Service and Asian Needs Assessment Service
- iCare programme providing information and advice
- iCare Volunteer Programme (North Shore and Waitakere sites), providing patient support services
- patient education, in Chinese and Korean languages (diabetes, stroke, falls prevention for elderly)
- translation of pamphlets, patient information and articles
- community engagement, development and awareness projects
- intranet/internet development (www.asianhealthservices.co.nz) with English and Chinese versions (Korean version under way)
- Workforce Training/Development Project
- Cultural Perspective on Asian Patient Care Workshops for health professionals
- Asian Mental Health Interpreters Workforce Development Project
- health promotion projects.

For more information, please visit our website: www.asianhealthservices.co.nz.

Phone: 09 442 3219
Fax: 09 486 8307
Email: sue.lim@waitematadhb.govt.nz
www.asianhealthservices.co.nz

Section 5: Risk and Protective Factors

Risk and protective factors are the proximal or 'downstream' causes of the diseases and injuries that ultimately determine health outcomes. Monitoring exposure of the population to these risks is therefore critical for planning health promotion and disease and injury prevention services: the risk factors of today are the diseases of tomorrow.

At the same time, we need to recognise that biological states and lifestyle behaviours are in turn shaped by the social context in which they are embedded, including cultural norms and economic realities. To ignore this is to risk victim blaming and stereotyping, which could result in counterproductive policies leading to widening health inequalities.

Here, however, we focus on key biological risk factors (high blood cholesterol, high blood pressure and bodyweight); and on key lifestyle behaviours (physical activity, dietary pattern and tobacco use). Diabetes could be considered another biological risk factor, but instead is included under Section 2 of this report (ie, as a disease).

Once again, we present crude risk factor prevalences, followed by multivariable odds ratios.

Biological risk factors

Three biological risk factors are presented in this section: high cholesterol, high blood pressure, and overweight and obesity.

High cholesterol and high blood pressure

Table 32: Prevalence (per 100) of self-reported high cholesterol and high blood pressure, by Asian ethnic group and sex, 15+ years, 2002/03

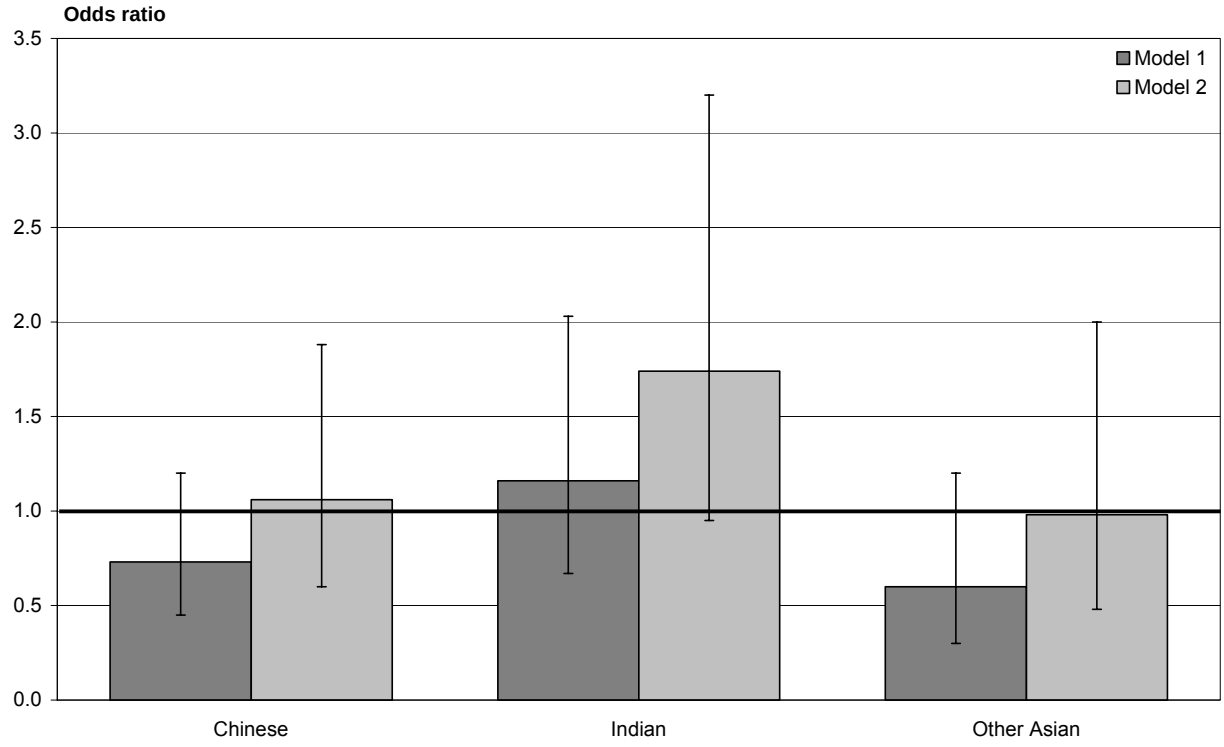
	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
High blood cholesterol	7.7 (2.2–13.1)	9.4 (3.8–15.1)	19.2 (9.0–29.4)	10.2 (3.1–17.2)	8.9 (2.9–15)	7.1 (0.6–13.7)
High blood pressure	8.5 (2.8–14.1)	7.0 (2.3–11.7)	19.3 (9.4–29.2)	9.4 (2.2–16.6)	6.4 (1.5–11.3)	10.5 (3.1–18.0)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: The crude rate for the total population has not been presented so as to avoid invalid comparisons. Overweight and obesity prevalence rates are not included in the table due to their complexity (see later).

High cholesterol

Figure 65: Multivariate odds ratios* of self-reporting high blood cholesterol, by Asian ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex, deprivation and duration of residence, there is no statistically significant association for self-reported high cholesterol between Asian ethnic groups and Europeans (although the multivariable odds ratio is almost significant for Indians after controlling for duration of residence).

Table 33: Multivariate odds ratios of having high blood cholesterol, by duration of residence in New Zealand, 15+ years, 2002/03

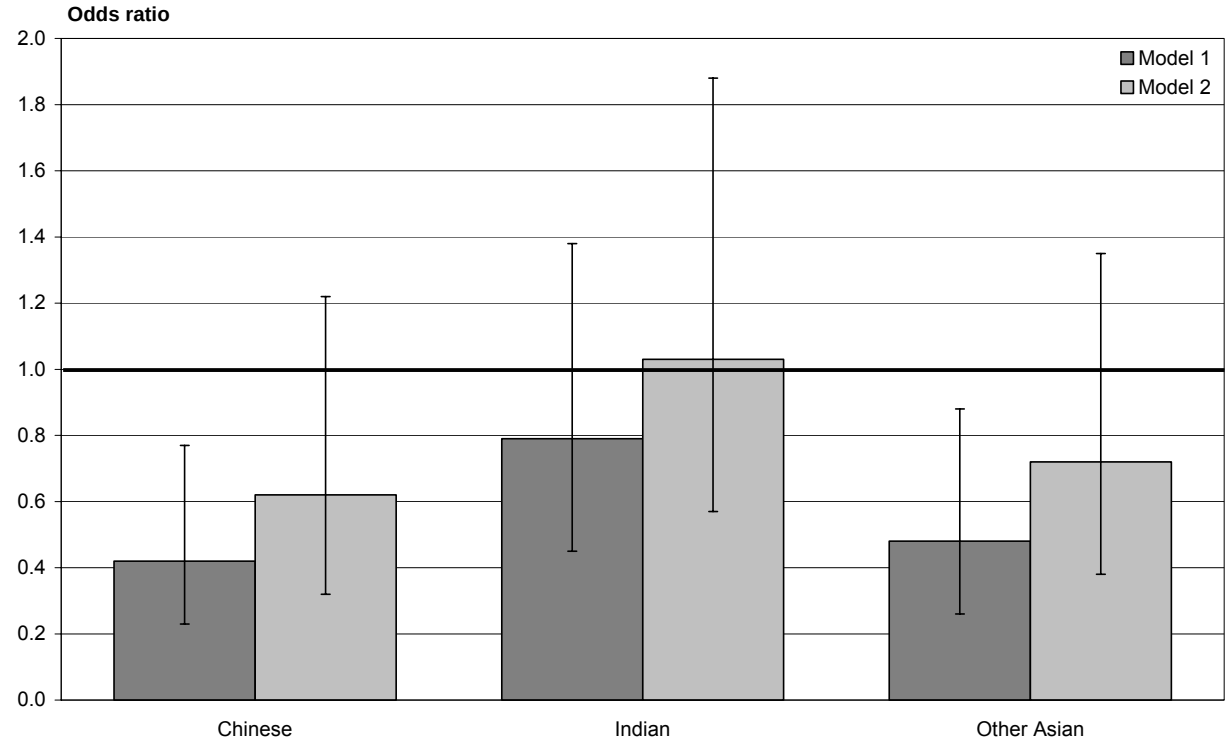
Duration of residence in New Zealand	All Asians
< 5 years	0.30 (0.16–0.57)
5–9 years	0.75 (0.42–1.35)
10+ years and New Zealand born	1.00

Source: 2002/03 New Zealand Health Survey, Ministry of Health

- Controlling for age, sex, deprivation and Asian ethnicity, longer duration of residence is significantly related to likelihood of self-reporting high blood cholesterol (possible reflecting increasing acculturation, or a waning healthy migrant effect).

High blood pressure

Figure 65: Multivariate odds ratios* of self-reporting high blood pressure, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex and deprivation, Chinese and Other Asians appear less likely to self-report high blood pressure than Europeans. However, after controlling for duration of residence in New Zealand, these associations are no longer statistically significant.

Table 34: Multivariate odds ratios of having high blood pressure, by duration of residence in New Zealand, 15+ years, 2002/03

Duration of residence in New Zealand	All Asians
< 5 years	0.54 (0.33–0.87)
5–9 years	0.46 (0.25–0.85)
10+ years and New Zealand born	1.00

Source: 2002/03 New Zealand Health Survey, Ministry of Health

- Longer duration of residence is significantly associated with likelihood of self-reported high blood pressure (after controlling for age, sex, deprivation and Asian ethnicity). This may reflect acculturation, waning of a selection (healthy migrant) effect, or improving access to health services (leading to diagnosis of pre-existent condition).

Overweight and obesity

Excess body fat is an important modifiable risk factor for a number of chronic diseases, including type 2 diabetes, cardiovascular disease, and some cancers. Body mass index (BMI) is used as an indicator of excess weight in this report.

Obesity in adults was calculated using both the standard cut-points and the ethnic specific cut-points for Asians suggested by a WHO consultation in 2004 (WHO 2004). These cut-points are outlined in Table 35.

Table 35: Classification of overweight or obese according to BMI (kg/m²)

Classification	Asian ethnic-specific cut-point	Standard cut-point
Overweight	23.0–24.9	25.0–29.0
Obese	≥ 25.0	≥ 30.0

The use of different cut-points for Asians is based on limited data, and the proposed cut-points may be less appropriate for Indian than for Chinese or Other Asian ethnic groups. On the other hand, reliance on the standard cut-points may well lead to underestimation of these biological states in most if not all Asian ethnic groups.

Table 36: Standard cut-point prevalence (per 100) of overweight and obesity, by Asian ethnic group and sex, 15+ years, 2002/03

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
Overweight BMI 25–29	16.1 (8.7–23.4)	9.6 (5.1–14.1)	27.1 (15.4–38.8)	38.1 (25.8–50.5)	28.3 (16.0–40.6)	13.3 (7.3–19.2)	42.1 (40.1–44.1)	28.4 (26.9–30.0)
Obese BMI ≥ 30	4.0 (1.0–7.1)	–	7.1 (0.6–13.6)	14.8 (7.7–21.8)	–	6.2 (0.4–12.1)	20.1 (18.7–21.5)	21.7 (20.3–23.2)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

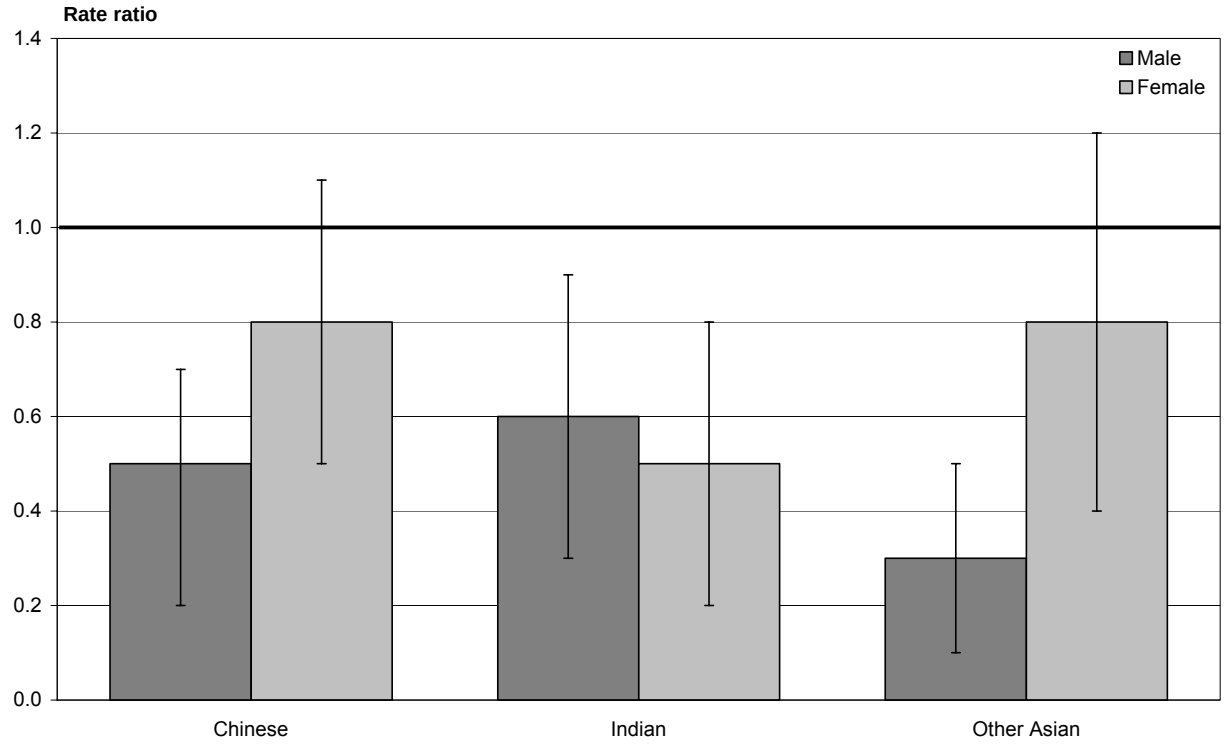
Table 37: Ethnic-specific cut-point prevalence (per 100) of overweight and obesity, by Asian ethnic groups and sex, 15+ years, 2002/03

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
Overweight BMI 23–24	19.7 (9.6–29.8)	19.3 (12.8–25.8)	24.9 (13.0–36.9)	15.3 (6.0–24.6)	12.1 (4.9–19.4)	20.8 (11.4–30.1)
Obese BMI ≥ 25	20.1 (12.1–28.1)	10.5 (6.0–15.1)	34.2 (22.2–46.2)	52.9 (41.4–64.3)	32.7 (20.3–45.1)	19.3 (10.7–27.9)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Overweight – defined using ethnic-specific cut-points

Figure 66: Standardised rate ratios* for overweight (BMI 23–24), by Asian ethnic group and sex, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

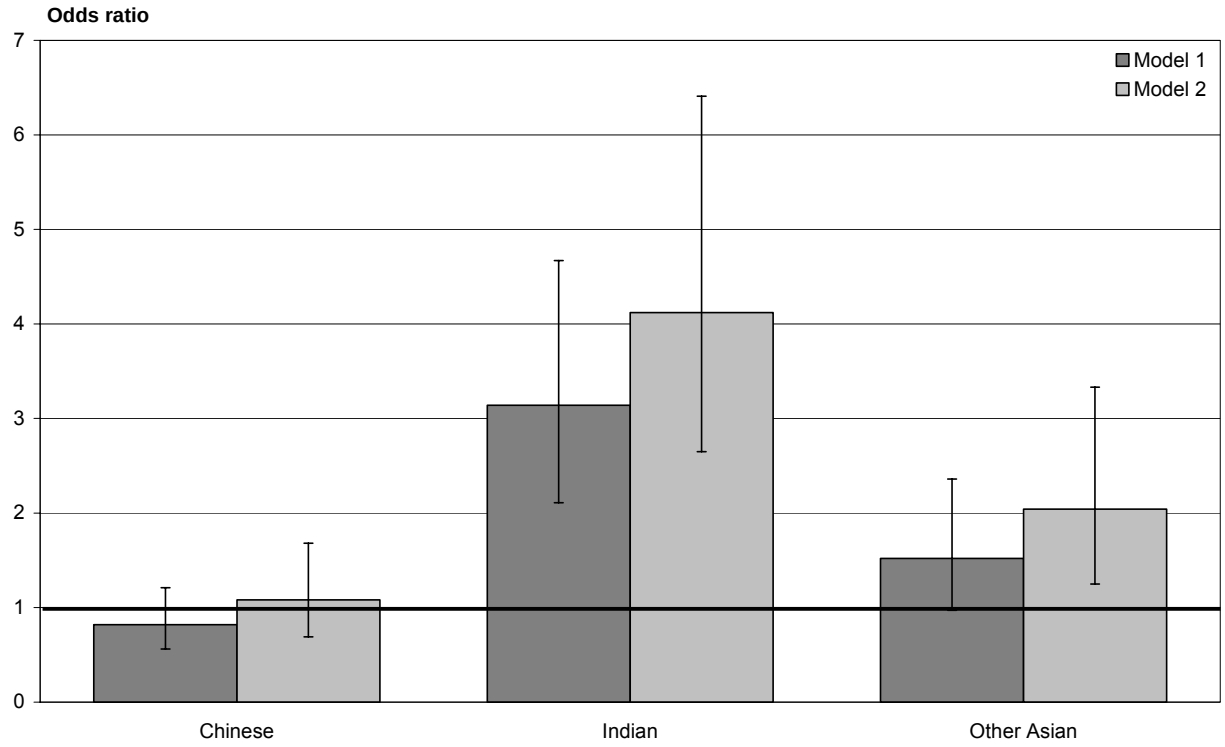
Notes: Age-standardised to WHO world population (15+ years). The multiple logistic regression model did not fit the data well, so SRRs are reported instead.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Using the ethnic-specific BMI cut-points, Chinese and Other Asian males and Indians (both sexes) have a significantly lower prevalence of overweight than the total population.
- Chinese and Other Asian females have a higher prevalence of overweight than their male counterparts (although the difference is not statistically significant).

Obesity – defined using ethnic-specific cut-points

Figure 67: Multivariate odds ratios* for obesity (ethnic-specific cut-points), by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex and deprivation, Indians appear to have a higher prevalence of obesity than Europeans (although this difference has been exaggerated by the use of ethnic-specific cut-points, which may be less appropriate for the Indian than for other Asian ethnic groups). After controlling for duration of residence in New Zealand, this association gets stronger.
- When duration of residence is controlled for, Other Asians appear to have a slightly higher prevalence of obesity than Europeans.
- These results suggest that Asian people (other than Chinese) do have higher rates of obesity than European New Zealanders if 'appropriate' (ethnic-specific) cut-points are used to define obesity.
- Duration of residence is significantly associated with likelihood of being obese (defined using ethnic-specific cut-points), suggesting that acculturation and/or waning of selection pressure is associated with weight gain in adulthood among Asian New Zealanders.

Behavioural risk factors

Two behavioural risk factors are presented in this section: alcohol consumption and tobacco consumption.

Alcohol consumption

Two indicators of alcohol use are reported here: potentially hazardous drinking, defined as an Alcohol Use Disorders Identification Test (AUDIT) score of 8 or greater; and alcohol abstention, defined as alcohol consumption less than once per year.

Hazardous drinking

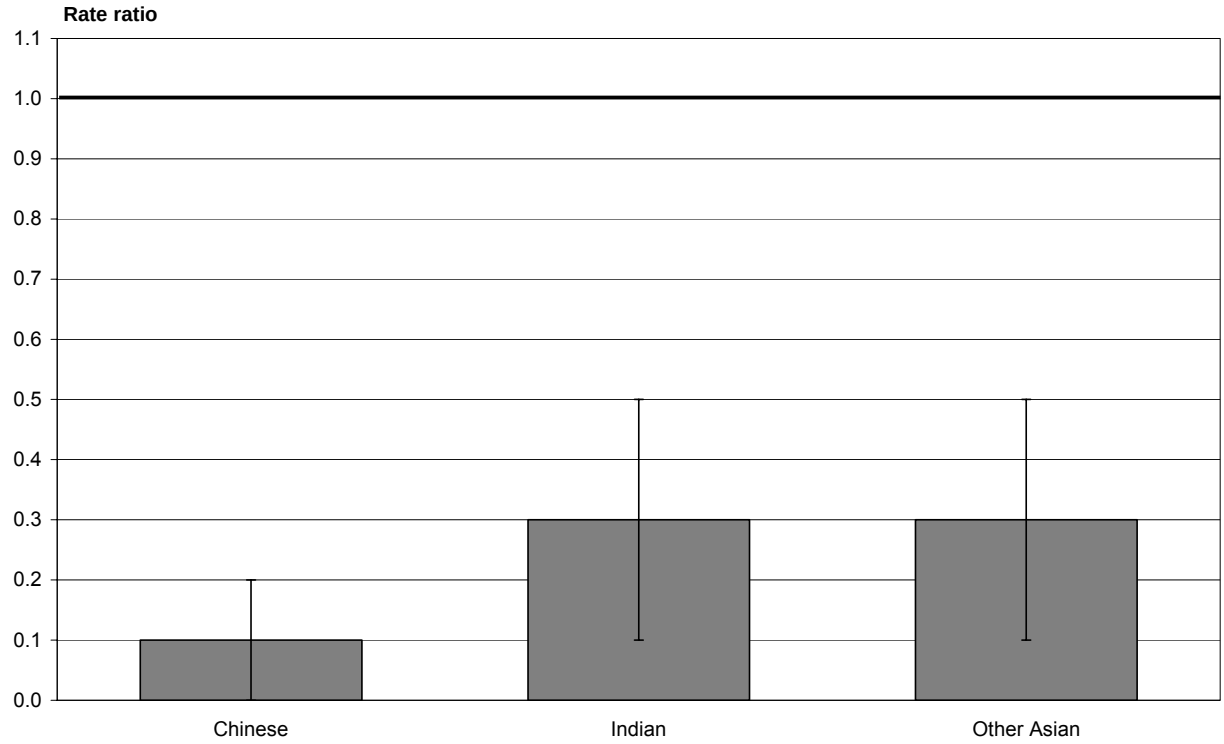
Table 38: Prevalence (per 100) of self-reported hazardous alcohol consumption, by Asian ethnic group, 15+ years, 2002/03

	Chinese	Indian	Other Asian
Hazardous drinking (AUDIT score > 8)	2.3 (0.1–4.5)	6.8 (2.0–11.5)	5.4 (1.4–9.4)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: The crude rate for the total population has not been presented so as to avoid invalid comparisons.

Figure 68: Standardised rate ratios* for hazardous drinking, by Asian ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Age-standardised to WHO world population (15+ years). Multiple logistic regression model did not fit the data well, so SRRs are reported instead.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Chinese, followed by Indians and Other Asians, have a significantly lower prevalence of hazardous alcohol consumption than the total population.

Abstention

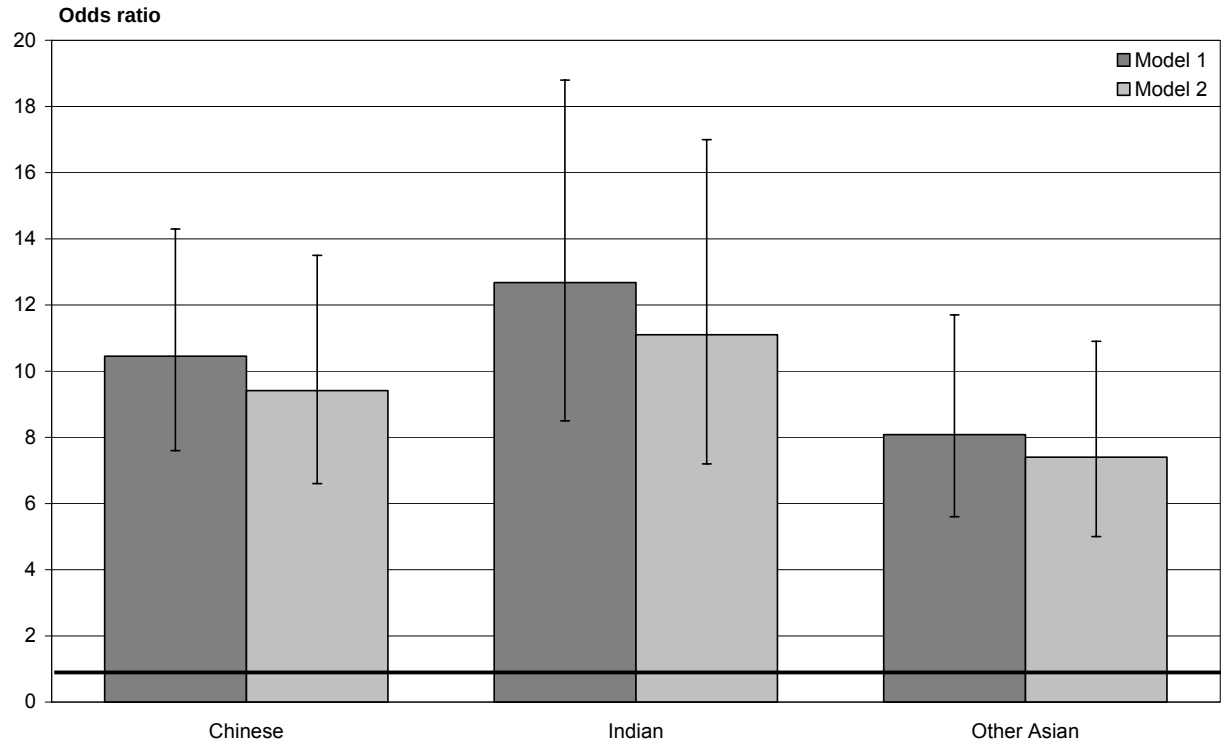
Table 39: Prevalence (per 100) of self-reported alcohol abstention, by Asian ethnic group and sex, 15+ years, 2002/03

	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Non-drinkers	38.7 (28.2–49.2)	59.5 (51.5–67.6)	42.1 (28.0–56.3)	71.7 (61.1–82.4)	34.7 (22.4–47.0)	52.9 (42.9–63.0)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: The crude rate for the total population has not been presented so as to avoid invalid comparisons.

Figure 69: Multivariate odds ratios* of alcohol abstinence, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex and deprivation, all Asian ethnic groups are much more likely to abstain from alcohol than Europeans (odds ratios of around 8–12).
- After controlling for duration of residence in New Zealand, this association weakens slightly in all Asian ethnic groups.

Tobacco consumption

Tobacco smoking is the leading modifiable risk factor in New Zealand, and is responsible for approximately 18% of all deaths (Ministry of Health 2004c). Second-hand cigarette smoke is now also recognised to be a substantial health hazard (Hill et al 2004).

Three sub-indicators are presented in this section: current smoker, ex-smoker and never smoker prevalence rates.

Table 40: Prevalence (per 100) of self-reported tobacco use, by Asian ethnic group and sex, 15+ years, 2002/03

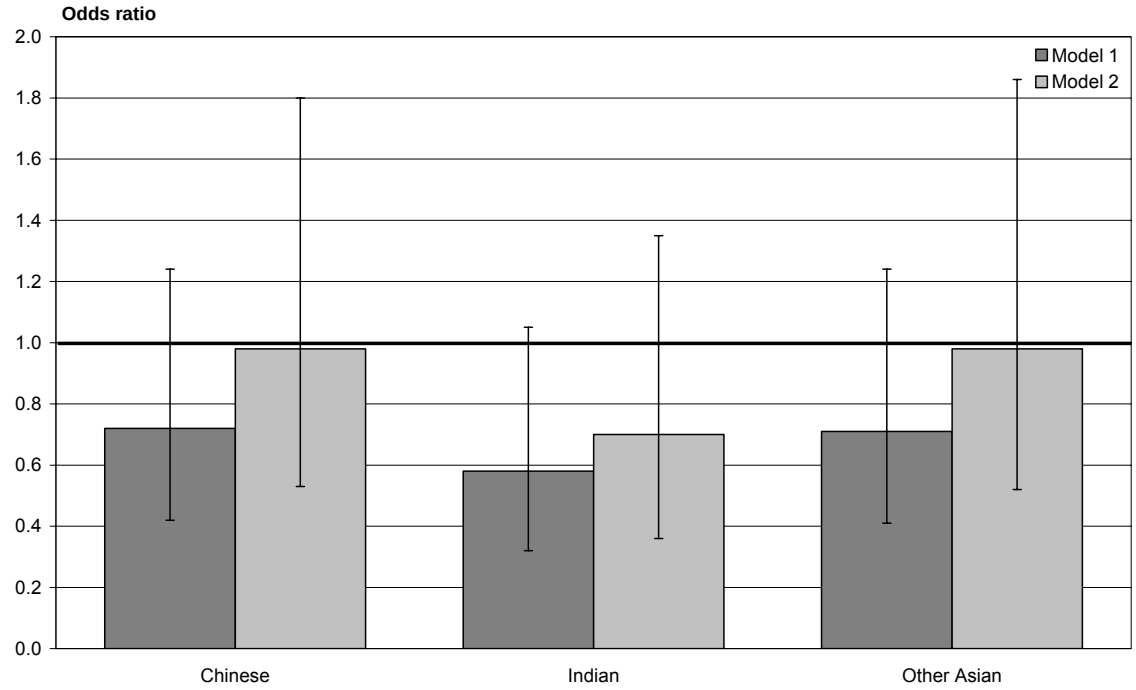
	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Current smoker (daily)	20.4 (12.5–28.2)	7.0 (2.4–11.6)	18.4 (9.7–27)	–	20.7 (11.6–29.8)	3.9 (1.2–6.6)
Ex-smokers	16.1 (8.0–24.2)	3.9 (0.0–8.1)	12.3 (4.6–20.1)	–	16.9 (8.7–25.1)	6.5 (1.4–11.6)
Never smokers	63.5 (54.6–72.3)	89.1 (82.2–96)	69.3 (57.5–81.1)	94.3 (90.8–97.8)	62.4 (52.2–72.6)	89.6 (83.7–95.6)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: The crude rate for the total population has not been presented so as to avoid invalid comparisons.

Current smokers

Figure 70: Multivariate odds ratio* of current smoking in males, by ethnic group, 15+ years, 2002/03



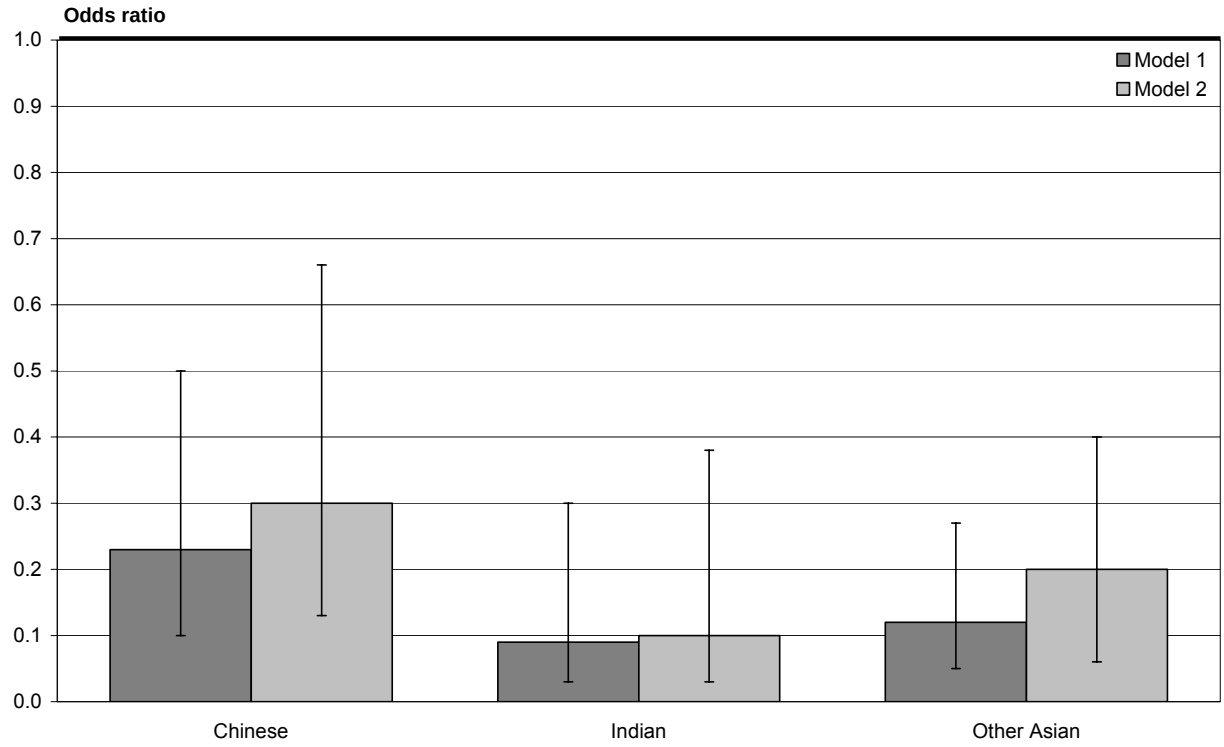
Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, deprivation and duration of residence in New Zealand, males in all three Asian ethnic groups are not significantly less or more likely to be current smokers than European males.

Figure 71: Multivariate odds ratios* of current smoking in females, by ethnic group, 15+ years 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

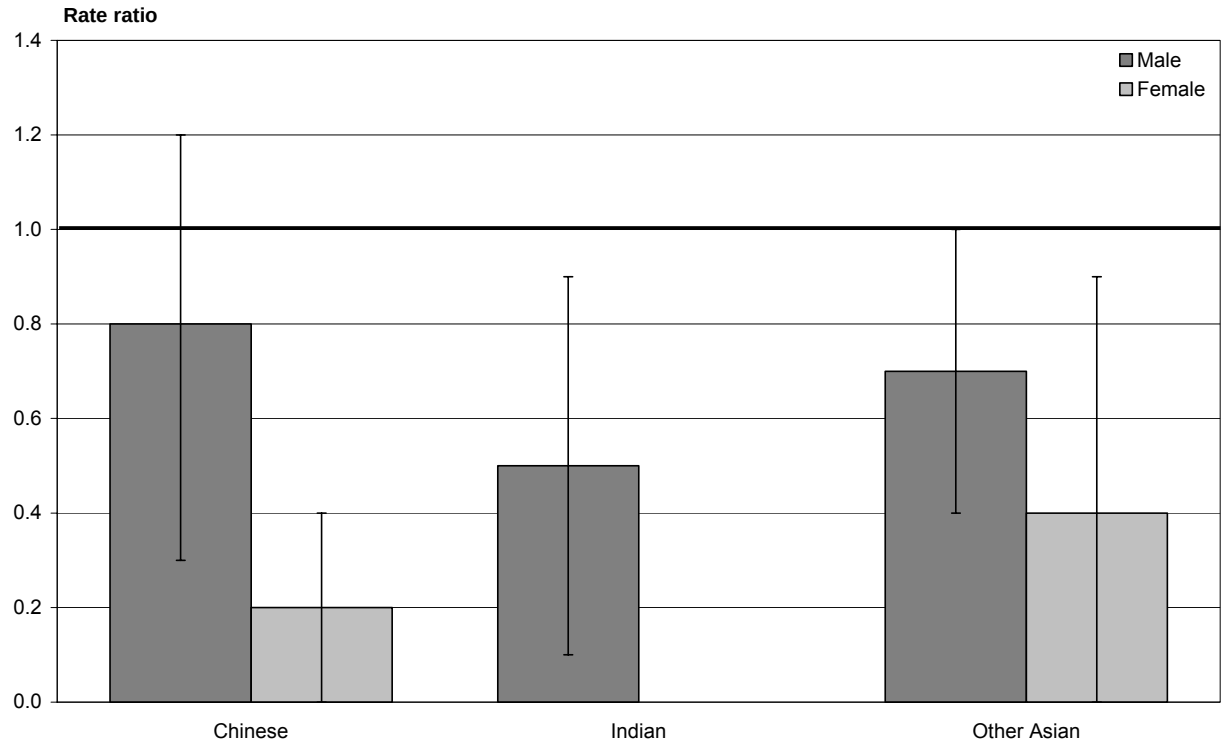
Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, deprivation and duration of residence in New Zealand, all Asian females are significantly less likely to be current smokers than European females.

Ex-smokers

Figure 72: Standardised rate ratios* for ex-smokers, by Asian ethnic group and sex, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

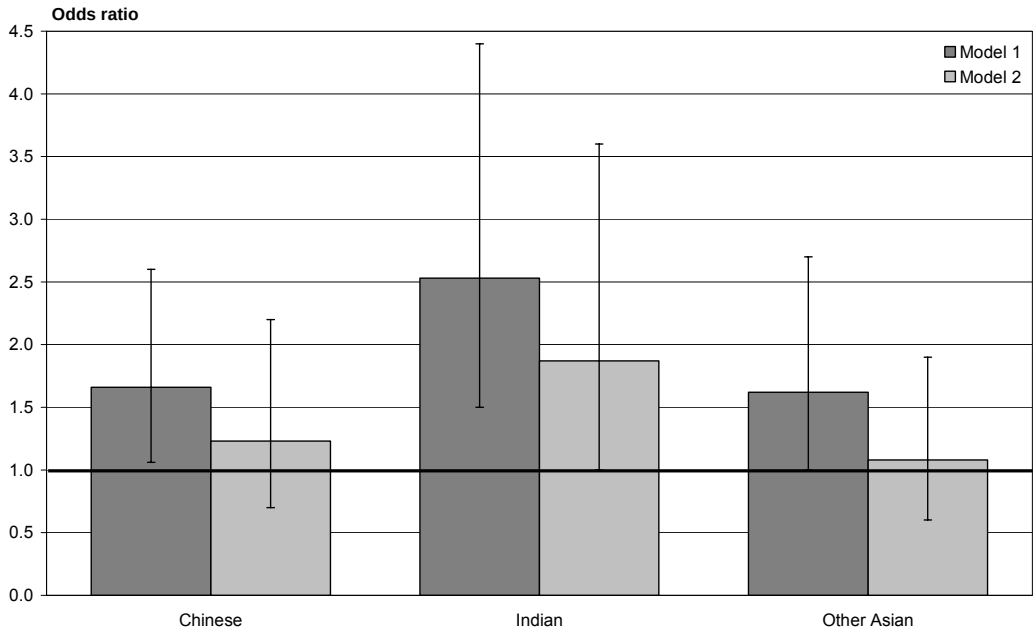
Note: Age-standardised to WHO world population (15+ years).

* The reference group (rate ratio = 1) is the total New Zealand population.

- The prevalence of ex-smokers is significantly lower in Chinese and Other Asian females than in the total population.
- Ex-smoker prevalence is significantly lower among Indian and Other Asian males than among their national counterpart. This prevalence may also be lower among Chinese males, although for this group the difference is not significant.

Never smokers

Figure 73: Multivariate odds ratios* of never smokers in males, by ethnic group, 15+ years, 2002/03

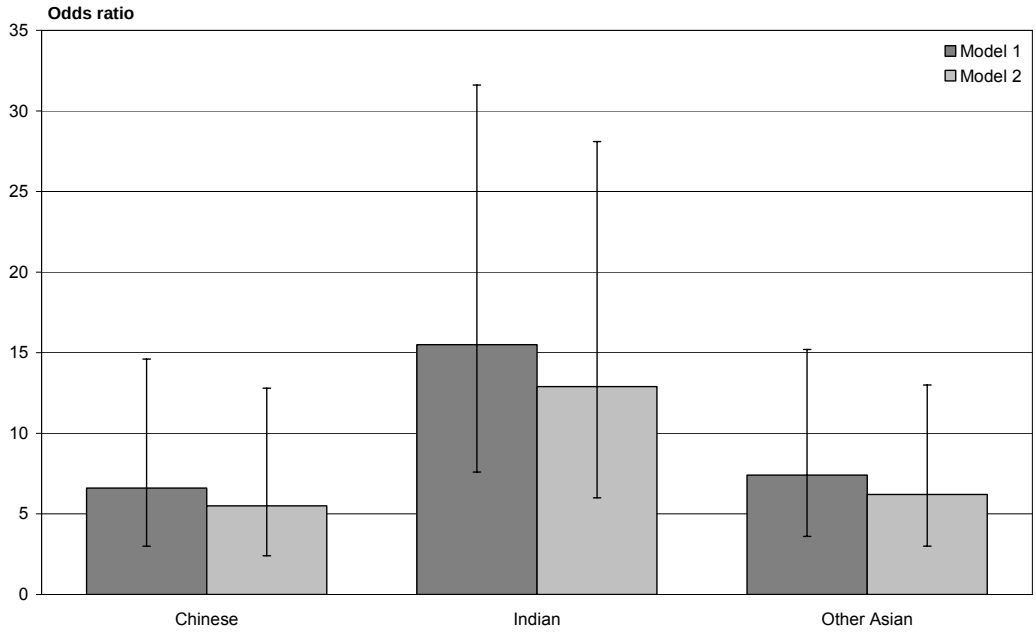


Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

Figure 74: Multivariate odds ratios* of never smokers in females, by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Multivariate analysis confirms that all Asian ethnic groups (both sexes) are more likely to be never smokers than New Zealand Europeans, although this difference reduces after adjusting for duration of residence. It is noted that the tobacco use indicators are not entirely consistent with the lung cancer registration and mortality rates reported earlier (pages 50-52), especially for Other Asian females. The reason for the inconsistency needs to be further investigated.

Protective factors

Physical activity

Being physically active is defined here as participating in at least 150 minutes per week of physical activity, equivalised to moderate intensity.

Physical activity can reduce the risk of many major diseases (such as cardiovascular diseases, certain cancers, diabetes, osteoporosis, obesity, and possibly depression (US Department of Health and Human Services 1996).

For benefits to health, the current recommendation is that all adult New Zealanders should do at least 30 minutes of moderate-intensity physical activity (equivalent to brisk walking) on most, if not all, days of the week (Hillary Commission 2001).

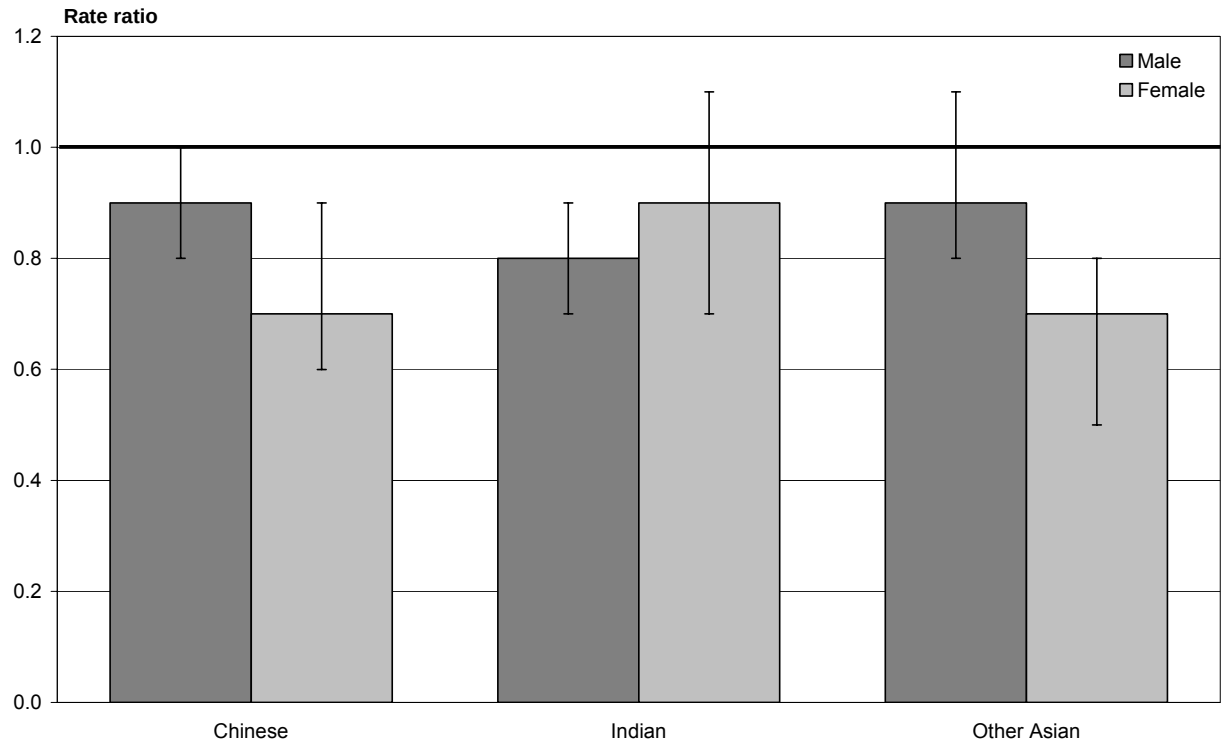
Table 41: Prevalence (per 100) of self-reported physical activity, by Asian ethnic group and sex, 15+ years, 2002/03

	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Physically active (150 minutes/week)	66.7 (58.3–75.0)	50.5 (40.9–60.2)	68.8 (59.4–78.3)	58.0 (47.1–69.0)	72.9 (62.0–83.7)	46.4 (35.8–57.0)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: The crude rate for the total population has not been presented so as to avoid invalid comparisons.

Figure 75: Standardised rate ratios* for physical activity, by Asian ethnic group and sex, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: Age-standardised to WHO world population (15+ years). SRRs rather than multivariate ORs are presented as the latter model did not fit the data well.

* The reference group (rate ratio = 1) is the total New Zealand population.

- Among the Asian ethnic groups, Chinese and Other Asian females are significantly less likely to participate in at least 150 minutes of physical activity per week than their total population counterparts.
- Chinese and Indian males are significantly less likely to participate in physical activity than the total population.

Fruit and vegetable consumption

Recommended fruit and vegetable intakes are at least two and three servings per day, respectively (a serving is approximately 80 grams). Adequate fruit and vegetable intake protects against cardiovascular diseases and possibly certain cancers.

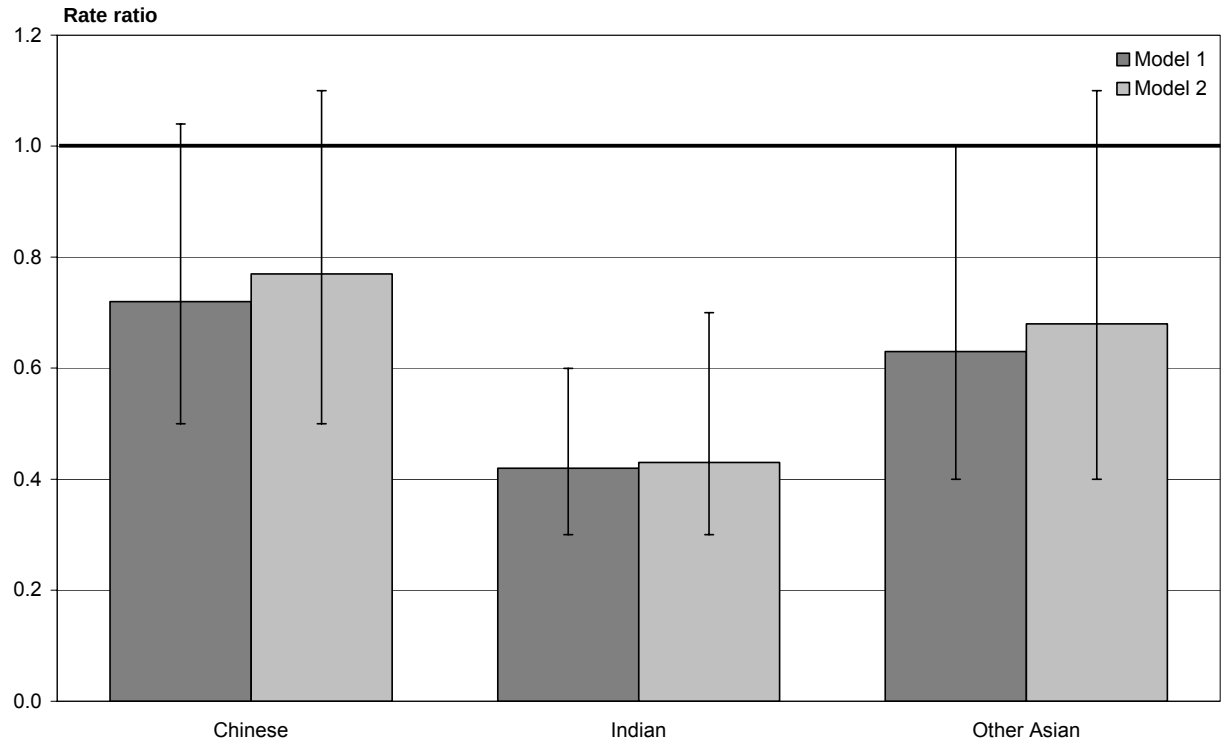
Table 42: Prevalence (per 100) of self-reported fruit and vegetable consumption by Asian ethnic group and sex, 15+ years, 2002/03

	Chinese		Indian		Other Asian	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
5+ a day (≥ 2 fruits + ≥ 3 vegetables)	25.9 (16.4–35.4)	39.8 (29.2–50.5)	21.2 (12.1–30.2)	23.0 (13.1–32.9)	22.5 (11.8–33.1)	36.7 (24.7–48.6)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Note: The crude rate for the total population has not been presented so as to avoid invalid comparisons.

Figure 76: Multivariate odds ratios of consuming fruit and vegetables by ethnic group, 15+ years, 2002/03



Source: 2002/03 New Zealand Health Survey, Ministry of Health

Notes: Model 1: controls for age, sex and deprivation; model 2: controls for age, sex, deprivation and duration of residence in New Zealand.

* The reference group (odds ratio = 1) is the total New Zealand European population.

- Controlling for age, sex and deprivation, Indians and Other Asians appear less likely to consume the recommended intake of fruit and vegetables than Europeans. However, after controlling for duration of residence in New Zealand, this association is only statistically significant for Indians (although it is almost so for Other Asians).

Summary

- Longer duration of residence is significantly related to the likelihood of self-reporting high blood cholesterol and high blood pressure among Asian New Zealanders (controlling for age, sex, deprivation and Asian ethnicity).
- Controlling for age, sex and deprivation, Indians appear to have a higher prevalence of obesity than New Zealand Europeans (using ethnic-specific cut-points). After controlling for duration of residence in New Zealand, this association gets stronger.
- Chinese, followed by Indian and Other Asian ethnic groups, have a significantly lower prevalence of hazardous alcohol consumption than the total population.
- All Asian ethnic groups are much more likely to abstain from alcohol than Europeans (controlling for age, sex and deprivation).
- All Asian females are significantly less likely to be current smokers than European females (controlling for age, deprivation and duration of residence in New Zealand).
- Among the Asian ethnic groups, Chinese and Other Asian females are significantly less likely to participate in at least 150 minutes of physical activity per week than their total population counterparts.
- Indian and Other Asians appear less likely to consume the recommended intake of fruit and vegetables than Europeans (controlling for age, sex and deprivation).

Section 6: Socioeconomic Determinants of Health

Socioeconomic conditions are major determinants of health. Social factors acting at a collective level shape individual biology, individual risk and protective behaviours, environmental exposures, and access to resources that promote health. While public health programmes alone cannot improve the social factors that are associated with poor health outcomes, developing a better understanding of the social determinants of health is critical to reducing health disparities among Asian people of differing socioeconomic position.

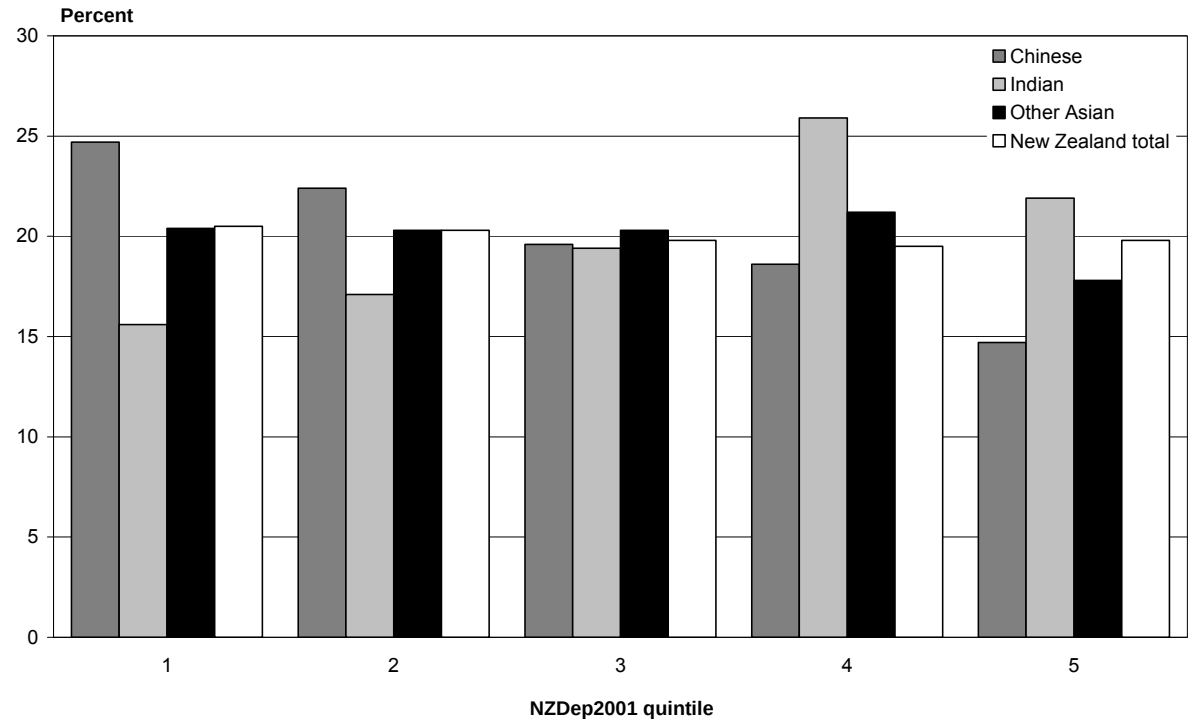
This section presents seven socioeconomic determinants: deprivation, English-language competence, income, unemployment, education, means-tested benefit receipt and home ownership.

Deprivation

NZDep2001 is a small area-based index of deprivation derived from nine Census 2001 variables (ie, income, transport, living space, home ownership, employment status, qualifications, support and access to a telephone). Small area scores are usually grouped into deciles or quintiles (quintile 1 = least deprived; quintile 5 = most deprived).

In the total population there is a strong association between NZDep distribution and health outcomes. This relationship is weaker, but still present, for the Asian ethnic grouping as a whole (Tobias and Yeh 2006); data are not available for each of the three Asian ethnic groups separately.

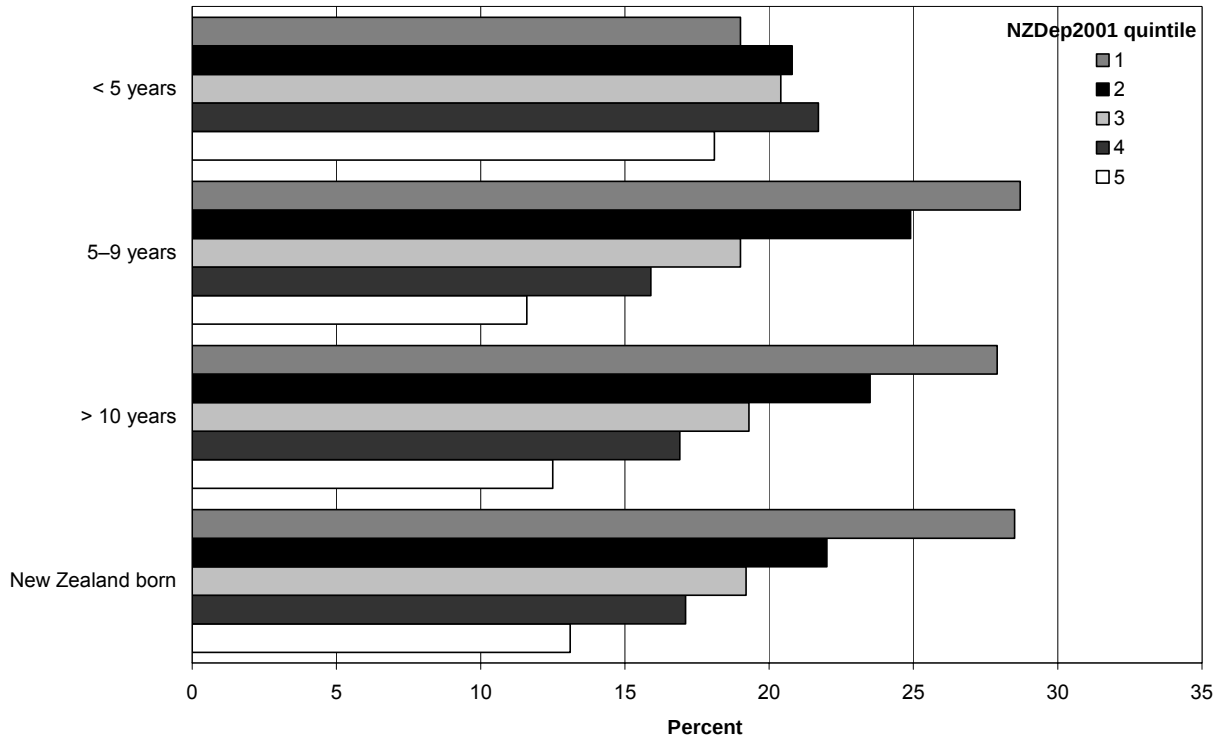
Figure 77: NZDep2001 distribution of Asian ethnic groups, 2001, percent



Source: Statistics New Zealand

- Asian ethnic groups are fairly evenly distributed across the deprivation quintiles.
- Chinese are moderately over-represented in quintiles 1 and 2, and under-represented in quintiles 4 and 5.
- The opposite pattern is seen among the Indian ethnic group.

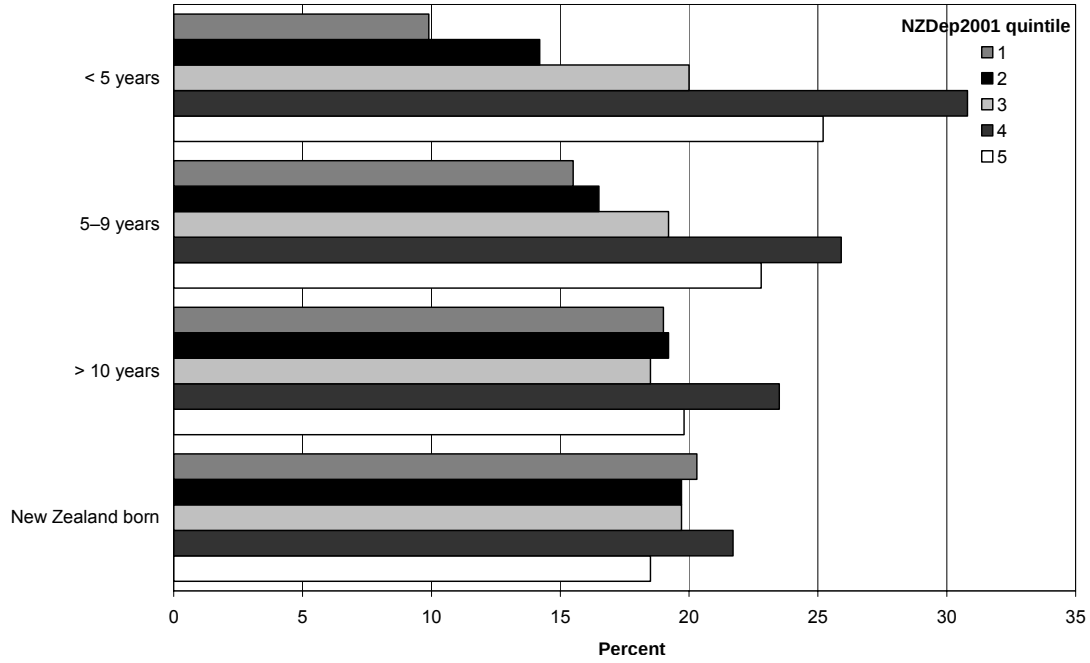
Figure 78: Chinese NZDep2001 distribution, by duration of residence in New Zealand, 2001, percent



Source: Statistics New Zealand

- Chinese who have lived in New Zealand for less than five years are more likely to be living in the most deprived quintile of small areas than those who have lived in New Zealand for longer.

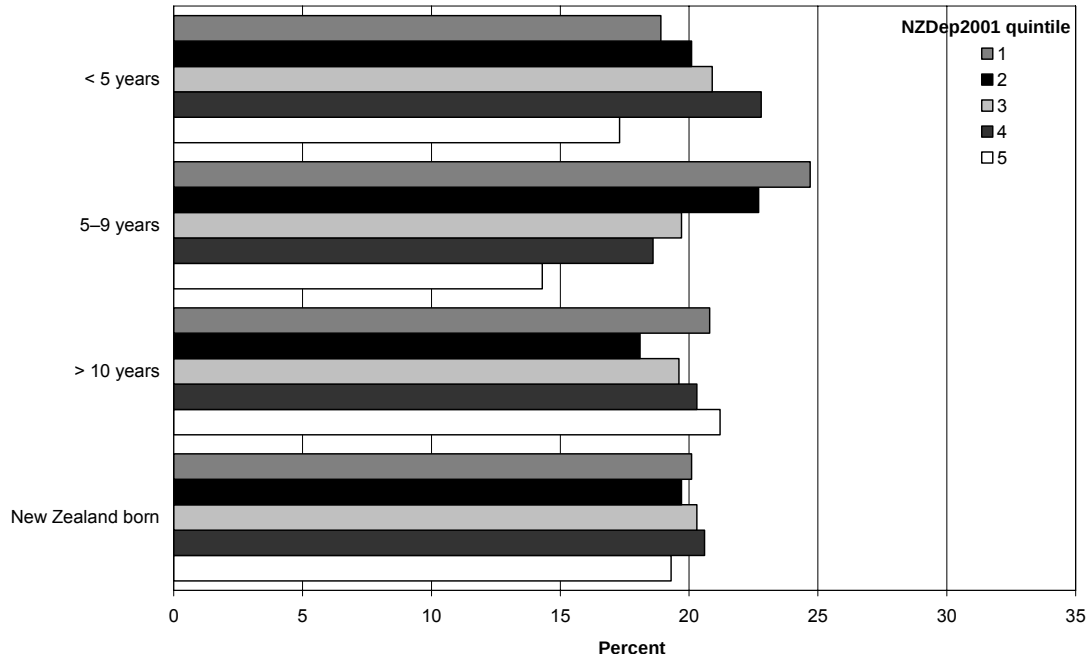
Figure 79: Indian NZDep2001 distribution, by duration of residence in New Zealand, 2001, percent



Source: Statistics New Zealand

- Indians who have lived in New Zealand for less than five years are more likely to be living in the most deprived quintile of small areas than those who were born in New Zealand.

Figure 80: Other Asian NZDep2001 distribution, by duration of residence in New Zealand, 2001, percent



Source: Statistics New Zealand

- Other Asians show little relationship between duration of residence in New Zealand and deprivation of small area of residence.

English-language competence

Table 43: English-language competence, by ethnic group and sex, 2001, percent

Indicator	Chinese			Indian			Other Asian			New Zealand total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
English language, 2001, percent	79.3	76.8	78.0	91.2	88.0	89.6	79.9	79.2	79.5	93.5	93.6	93.5

Source: Statistics New Zealand

- The majority of Chinese, Indian and Other Asian people speak English. This is highest for Indians (~90%), followed by the Other Asian (~80%) and Chinese (~78%) ethnic groups.
- New Zealand-born Chinese have higher English-language competence than those who have lived in New Zealand for less than five years (93% vs 68%) (see Appendix 3).
- New Zealand-born Other Asians have higher English-language competence than those who have lived in New Zealand for less than five years (93% vs 74%) (see Appendix 3).

Income

Table 44: Low income, by ethnic group and sex, 2001, percent

Indicator	Chinese			Indian			Other Asian			New Zealand total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Income $20,000 or less, 15+ years, 2001, percent	59.8	65.8	63.0	42.8	56.6	49.7	52.9	61.1	57.6	37.9	55.2	46.9

Source: Statistics New Zealand

- About two-thirds of Chinese and Other Asian people have an annual income less than $20,000 compared to half the total population.
- Chinese who have lived in New Zealand for less than five years are more likely to receive an income lower than $20,000 compared to New Zealand-born Chinese (see Appendix 3).

Unemployment

Table 45: Unemployment, by ethnic group and sex, 2001, percent

Indicator	Chinese			Indian			Other Asian			New Zealand total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Unemployment, 15+ years, 2001, percent	7.4	6.2	6.8	7.9	7.9	7.9	8.6	7.2	7.8	5.0	4.7	4.8

Source: Statistics New Zealand

- Chinese, Indian and Other Asian people have a higher unemployment rate than the total population (approximately 8% vs 5%).
- New Zealand-born Chinese have a lower unemployment rate than those who have lived in New Zealand for less than five years (6% vs 8%) (see Appendix 3).
- New Zealand-born Indians have a lower unemployment rate than those who have lived in New Zealand for less than five years (8% vs 11%) (see Appendix 3).

Education

Table 46: School completion, by ethnic group and sex, 2001, percent

Indicator	Chinese			Indian			Other Asian			New Zealand total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
6th form certificate or higher, 15+ years, 2001, percent	73.6	73.0	73.3	70.1	65.3	67.7	69.9	70.4	70.2	49.3	48.1	48.7

Source: Statistics New Zealand

- Over two-thirds of Chinese, Indian and Other Asian people have a sixth form certificate or higher, compared to half of the total population.

Benefit receipt

Table 47: Means-tested benefits, by ethnic group and sex, 2001, percent

Indicator	Chinese			Indian			Other Asian			New Zealand total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Means tested benefit, 15+ years, 2001, percent	14.2	15.0	14.6	13.5	16.1	14.8	16.3	15.1	15.6	13.1	16.5	14.9

Source: Statistics New Zealand

Note: Where a person reported more than one source of personal income, they have been counted in each applicable group.

- The proportion of Chinese, Indian and Other Asian people receiving a means-tested benefit is similar to the proportion of the total population.

Home ownership

Table 48: Home ownership, by ethnic group and sex, 2001, percent

Indicator	Chinese			Indian			Other Asian			New Zealand total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Home ownership, 15+ years, 2001, percent	36.8	39.4	38.2	37.9	37.7	37.8	25.7	32.0	29.3	49.9	52.2	51.1

Source: Statistics New Zealand

- Less than 40% of Chinese and Indian people and 30% of Other Asian people own their own home, compared to 50% of the total population.

Summary

- Asian New Zealanders' deprivation distribution does not differ substantively from that of the population as a whole.
- Asian New Zealanders are more likely to have higher educational qualifications than the all New Zealand average.
- Nevertheless, on average, incomes of Asian New Zealanders are lower than those of the total population, mainly reflecting the relatively low labour-force participation rate of recent migrants.
- Overall, the unemployment rate of Asian New Zealanders is higher than the all New Zealand average (approximately 8% versus 5% in 2004).
- Asian New Zealanders are no more likely than average to be receiving a means-tested benefit.
- Asian New Zealanders are less likely than average to own their own homes.
- English-language competence is an issue for some Chinese and Other Asians, but generally not for Indians.
- The health status of Asian New Zealanders (especially Chinese) is higher than would be expected given their socioeconomic position. This 'Asian paradox' resembles the well known 'Hispanic paradox' in the USA (Markides and Coreil 1986) and probably likewise reflects health selection effects.
- Asian New Zealanders do exhibit a socioeconomic mortality gradient, but this is shallower than those of Māori and European New Zealanders.

Section 7: Conclusion

Perhaps the key conclusion to emerge from this report is the diversity of health status, health risk profile and health service utilisation that exists within the 'Asian' population category. Thus monitoring of health at the level of this broad category may disguise, through 'averaging' or 'masking', as much as it reveals. Beyond the conventional decompositions of age, gender and social class, our findings suggest that ethnicity and migrant status must also be taken into account.

This report reveals major differences in health outcomes and exposure to health hazards between the Chinese and Indian ethnic groups, with 'Other Asians' generally intermediate. The relatively high rates of obesity (defined using ethnic specific cut-points), type 2 diabetes and cardiovascular disease among the Indian ethnic group is especially concerning.

The report also reveals major differences in health and health service use between recent or first-generation migrants and long-standing migrants or second and subsequent generations (ie, the established communities), similar for all three Asian ethnic groups. For almost all health indicators, recent or first-generation migrants have better health status than longstanding migrants or the New Zealand-born.

This finding is consistent with the international literature on migration and health (Harding 2003), and in part reflects health selection. First-generation Asian migrants to New Zealand are selected for health, both directly through health screening – including self-screening – and indirectly through selection for factors such as occupation, education and wealth, which are in turn predictive of current and to a lesser extent future health status. This applies particularly to younger migrants and to general and business migrants, but less so to family reunification migrants and negatively to refugees and asylum seekers (but these make up only a small proportion of the total migrant population). In addition to this 'healthy immigrant effect', there may also be a (smaller) 'unhealthy emigrant effect' − a tendency for chronically ill migrants to return to their country of origin to die, further increasing the apparent good health status of the migrant population. With increasing time since migration, selection weakens and is of course absent from the second generation onwards. So, as the proportion of recent migrants/first-generation settlers in the population reduces and selection effects decrease, the average health of the Asian ethnic category will deteriorate towards the all New Zealand average ('regression to the mean').

While this is to some extent inevitable, it can be partially offset (or exacerbated) by other processes, including acculturation, settlement pattern and host population response. On the one hand, acculturation may contribute to worsening health through loss of cultural buffering, including traditional cultural values, extended family support and protective dietary patterns, as well as through the adoption of unhealthy behaviours prevalent in the host population such as tobacco and alcohol use. On the other hand, acculturation may improve health through increasing English-language competence (where this is relevant), and more generally by reducing cultural barriers to employment and social service (including health service) use.

Similarly, settlement patterns can also have opposing effects on health. Thus residence in ethnic enclaves can provide strong social support, increase pride in ethnic identity and help to retain healthy traditional practices. Yet ghettoisation can reduce employment opportunities, retard English-language learning and create barriers to accessing high-quality health care. Finally, discrimination against Asian New Zealanders – both interpersonal and institutional – can impact severely on health (Abbott et al 2000; Harris et al 2006).

Policy implications

The information contained in this report will be used by the health sector to assist in identifying the health needs of Asian peoples in New Zealand. The Ministry of Health will use the information to assist in formulating the advice it gives to the Minister of Health on how these needs should be addressed in the future. The report may also help to inform Asian communities themselves, so that they can actively engage in debating their health needs and health service requirements. Indeed, this report may be of value beyond the Asian population itself. Understanding the advantage in health of Asian New Zealanders is as important as understanding the relative disadvantage of non-Asian New Zealanders, in that such understanding could also contribute to improvement of the latter's health.

It is clear that on almost all indicators the health of Asian New Zealanders in general, and that of the Chinese ethnic group in particular, is excellent but will inevitably regress towards the mean as selection effects wane. Policy settings cannot influence this, but can ensure that acculturation impacts adaptively rather than maladaptively on Asian health (Berry 1990). This will require recognition of the diversity of the Asian population, both ethnically and generationally; full engagement of the communities themselves; and adoption of a strengths-based model for health promotion that builds on the cultural strengths of these communities.

Specific policy issues may include initiatives to reduce cultural barriers to health service access, improve the cultural safety of mainstream health services, and foster growth of Asian-specific health services (as illustrated by the story boxes included in this report) and of the Asian health workforce. Social services for new immigrants, to foster English-language competence and re-integration into the workforce in particular, are critical for further development. Health promotion efforts are needed to preserve cultural anti-smoking norms (among Asian females) and dietary practices (both sexes), and to encourage participation in culturally acceptable forms of physical activity (females especially).

Beyond fostering adaptive patterns of acculturation, policy settings can also address broader structural issues relating to the social determinants of health. These include issues relating to socioeconomic stratification (eg, recognition of overseas qualifications and work experience), and to racial discrimination (especially institutional discrimination in the housing and labour markets, and in health care). This is so despite the 'Asian paradox' and the relatively shallow socioeconomic mortality gradient currently exhibited by Asian New Zealanders as a group.

With respect to health care policy, a key finding of this report is the relatively low utilisation of primary health (including dental) services by Asian New Zealanders (especially recent migrants) in general, and clinical preventive services such as cervical screening in particular. The early detection and effective management of type 2 diabetes (and cardiovascular risk more generally) in Indian people is clearly also a high priority. Culturally appropriate mental health services are of concern to recent migrants, and to refugees and asylum seekers in particular. The story boxes included in this report provide insights into the sorts of innovative services that can be developed. It is worth noting that use of traditional or alternative remedies/providers does not appear, from our findings, to be a valid explanation for the relatively low uptake of conventional primary health services by Asian peoples in New Zealand.

Monitoring implications

This report is a starting point. It provides a baseline for Asian health in New Zealand and will require regular updating. Public Health Intelligence has undertaken to update the report every five years. The report will continue to evolve, with new indicators being added and some existing ones being dropped, as a result of feedback from users and as new data sources become available.

It is unfortunate that no trend data could be included in this report, due to a lack of reliable historical time series for most if not all indicators. Future editions will include trend information for the indicators as such information becomes available. Hence, a key focus of future reports will be the analysis of time trends to assess progress in Asian health, and the production of projections of Asian health status, health risk profiles and health service utilisation patterns for planning and resource allocation purposes.

The value of this report (and its updates) as a monitoring tool would be further enhanced if ethnicity reporting in health information systems could be improved. The Ministry's Ethnicity Data Protocol (Ministry of Health 2004) and the new standard for ethnicity measurement developed by Statistics New Zealand (2005b) should enable a robust time series of Asian vital and health statistics to evolve. Collection and analysis of data for at least some specific ethnic groups within the 'Other Asian' category remains a challenge for the future.

Appendix 1: Classifications and Codes

Table A1-1: Ethnic composition of Statistics New Zealand 'Asian' category

Chinese	Indian	Other Asian
Chinese NFD	Indian NFD	Asian NFD
Hong Kong Chinese	Bengali	Southeast Asian NFD
Cambodian Chinese	Fijian Indian	Filipino
Malaysian Chinese	Gujarati	Cambodian
Singaporean Chinese	Tamil	Vietnamese
Vietnamese Chinese	Punjabi	Burmese
Taiwanese	Sikh	Indonesian
Chinese NEC	Anglo Indian	Laotian
	Indian NEC	Malay
		Thai
		Southeast Asian NEC
		Japanese
		Korean
		Afghani
		Bangladeshi
		Nepalese
		Pakistani
		Tibetan
		Eurasian
		Asian NEC

Notes: NEC = not elsewhere classified; NFD = not further defined.

Table A1-2: WHO standard population

Age group (years)	Weighting
0–4	8.80
5–9	8.70
10–14	8.60
15–19	8.50
20–24	8.20
25–29	7.90
30–34	7.60
35–39	7.20
40–44	6.60
45–49	6.00
50–54	5.40
55–59	4.60
60–64	3.70
65–69	3.00
70–74	2.20
75–79	1.50
80–84	0.90
85+	0.60
All	100.00

Table A1-3: ICD-9 codes used in this report

Condition	ICD-9
All cancer	140–208
Stomach cancer	151
(Female) breast cancer	174
Asthma	493
Total cardiovascular disease (CVD)	390–459
Ischaemic heart disease (IHD)	410–414
Unintentional injuries	E800–E949
Suicide and self-harm	E950–E959
Falls injury	E880-E886, E888

Table A1-4: Avoidable mortality ICD-9 codes

Condition	ICD-9
Tuberculosis*	010–018, 137
Selected invasive bacterial and protozoal infection*	034–036, 038, 084, 320, 481–482, 485, 681–682
HIV/AIDS	042
Hepatitis (all types)	070
Viral pneumonia and influenza	480, 487
Lip, oral cavity and pharynx cancers	140–149
Oesophageal cancer	150
Stomach cancer	151
Colorectal cancer*	153, 154
Liver cancer	155
Lung cancer	162
Melanoma of skin*	172
Non-melanotic skin cancer*	173
Breast cancer*	174
Uterine cancer*	179, 182
Cervical cancer*	180
Bladder cancer*	188
Thyroid cancer*	193
Hodgkins disease*	201
Leukaemia*	204.00, 204.01, 204.10, 204.11
Benign tumours*	210–229
Thyroid disorders*	240–246
Diabetes*	250
Alcohol-related disease	291, 303, 305.0, 425.5, 535.3, 571.0–571.3, 760.8
Illicit drug-use disorders	292, 304, 305.2–305.9
Epilepsy*	345
Rheumatic and other valvular heart disease*	390–398
Hypertensive heart disease*	402
Ischaemic heart disease*	410–414
Cerebrovascular diseases*	430–438
Aortic aneurysm	441
Nephritis and nephrosis*	403, 580–589, 591
Obstructive uropathy and prostatic hyperplasia*	592, 593.7, 594, 598, 599.6, 600
Deep vein thrombosis with pulmonary embolism	415.1, 451.1
Chronic obstructive pulmonary disease	490–492, 496
Asthma*	493
Peptic ulcer disease*	531–534
Acute abdomen, appendicitis, intestinal obstruction, cholecystitis/lithiasis, pancreatitis, hernia*	540–543, 550–553, 574–577
Cirrhosis, chronic hepatitis and other chronic liver disease	571
Birth defect*	740–759
Complications of perinatal period*	764–779
Road traffic injuries, other transport injuries	E810–E819
Accidental poisonings	E850–E869
Falls	E880–E886, E888
Fires, burns	E890–E899
Drownings (swimming)	E910
Suicide and self-inflicted injuries	E950–E959, E980–E989
Violence	E960–E969

* These conditions are amenable to health care.

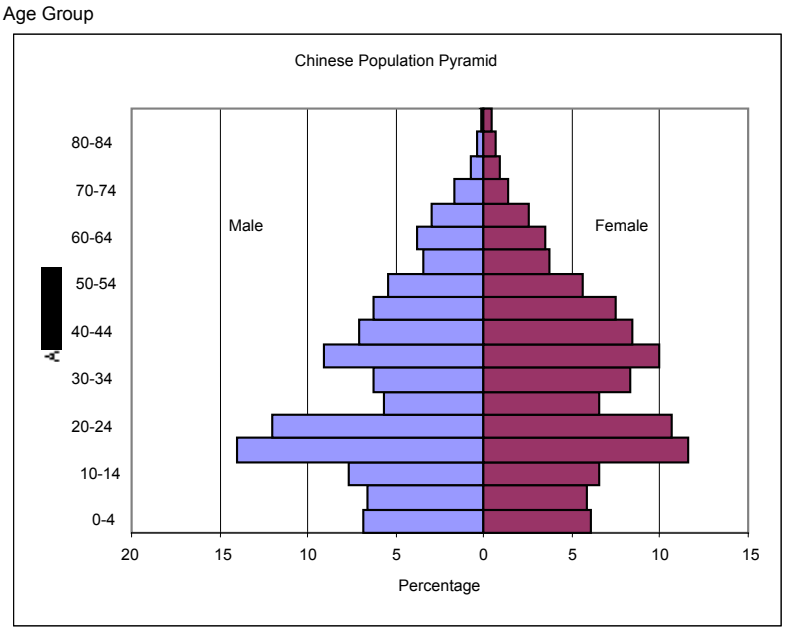
Table A1-5: Avoidable hospitalisation ICD-9 codes

Condition	ICD-9
Tuberculosis*	010–018, 137
HIV/AIDS*	042
Skin cancers*	140, 172, 173
Oral cancers*	141, 143–146, 148–149, 161
Colorectal cancer*	153, 154
Lung cancer*	162
Breast cancer*	174
Cervical cancer*	180
Nutrition*	260–269, 280–281
Alcohol-related conditions*	291, 303, 305.0, 425.5, 535.3, 571.0–571.3
Angina	411.1, 411.8, 413, 786.5
Gastroenteritis*	001–009, 558.9, 779.3, 787.0, 787.9
Other infections*	023, 027, 034–035, 084, 770.0, 771.1–771.2, 771.4–771.9
Immunisation preventable*	032–033, 037, 045, 055–056, 072, 320.0, 771.0, 771.3
Hepatitis and liver cancer*	070, 155
Sexually transmitted diseases*	090–099, 614.0–614.5, 614.7–616.9, 633
Thyroid disease*	240–244
Diabetes*	250, 251.0, 251.2
Dehydration*	276.0, 276.5
Epilepsy*	345, 780.3
ENT infections*	381–383, 461–463, 472.1
Rheumatic fever/heart disease*	390–398
Hypertensive disease*	276.8, 401–405, 437.2
Ischaemic heart disease*	410, 412, 414, 411.0
Congestive heart failure*	428, 518.4
Stroke*	431, 433, 434, 436
Respiratory infections*	460, 465, 466.0, 480–483, 485–487
CORD*	490–492, 494, 496
Asthma*	493
Dental conditions*	521–523, 525, 528
Peptic ulcer*	531–534
Ruptured appendix*	540
Obstructed hernia*	550.0–550.1, 551–552
Kidney/urinary infection*	590, 599.0
Cellulitis*	680–686
Failure to thrive*	783.3–783.4
Gangrene*	785.4
Burns and scalds	E890–E899
Drowning	E910
Falls from playground equipment	E884.0, E884.5
Indeterminately caused injuries	E980–E989
Poisoning	E850–E869
Road traffic injury	E810–E829
Sports injuries	E886.0, E917.0, E927
Swimming pool accidents	E883.0, E910.5, E910.6
Suicide	E950–E959

* These conditions are ambulatory sensitive (ASH).

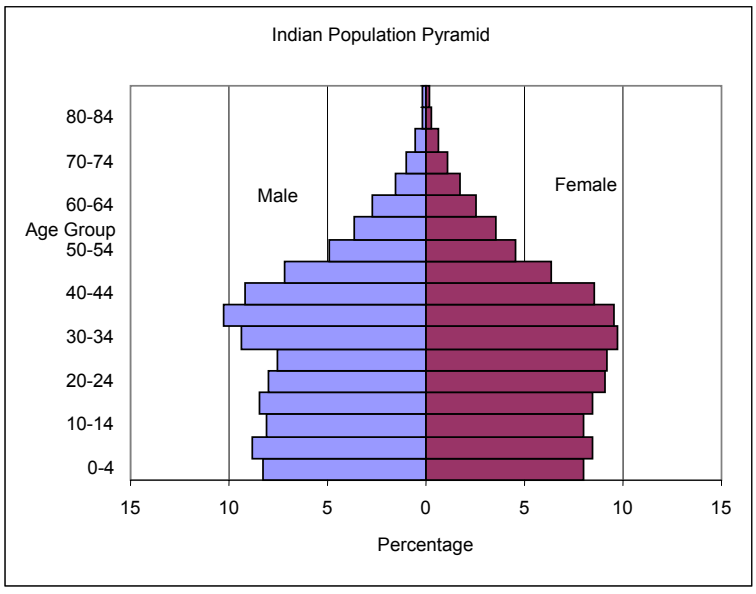
Appendix 2: Population Pyramids

Figure A2-1: Age and sex distribution of Chinese people in New Zealand



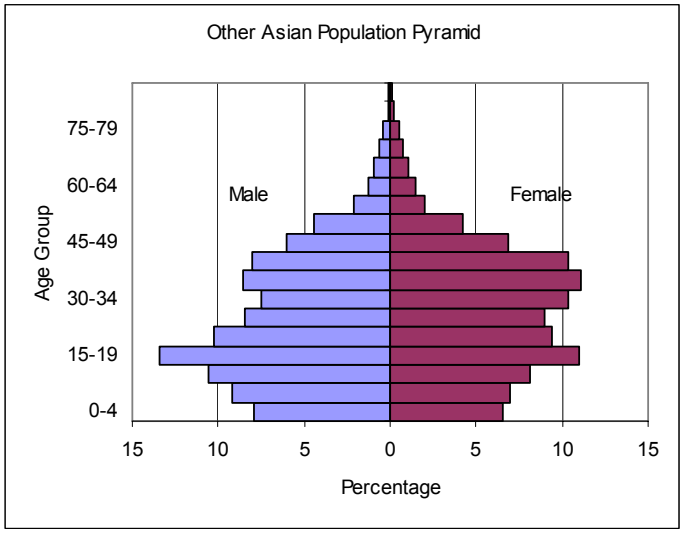
Source: Statistics New Zealand

Figure A2-2: Age and sex distribution of Indian people in New Zealand



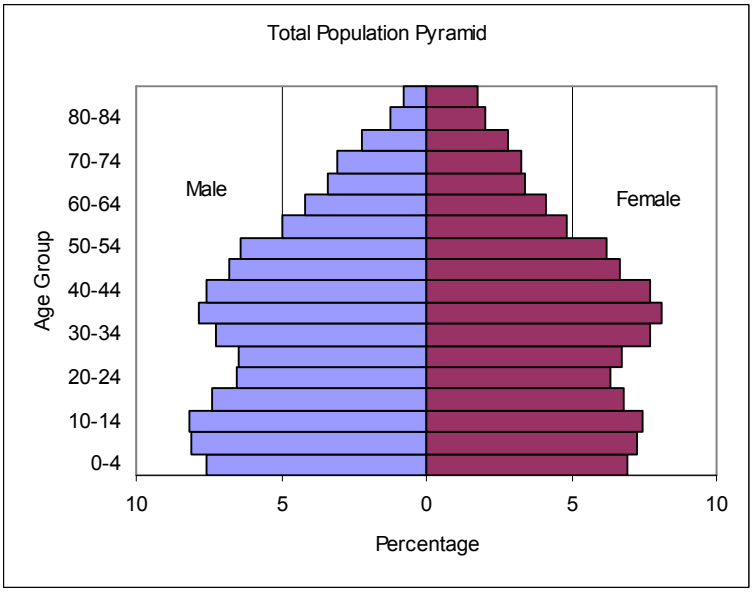
Source: Statistics New Zealand

Figure A2-3: Age and sex distribution of Other Asian people in New Zealand



Source: Statistics New Zealand

Figure A2-4: Age and sex distribution of the total population in New Zealand



Source: Statistics New Zealand

Appendix 3: Socioeconomic Indicators, by Duration of Residence in New Zealand

Table A3-1: Chinese socioeconomic indicators, by duration of residence in New Zealand, 2001

	Gender	English language, percent	Income $20,000 or less, 15+ years, percent	Unemployment, 15+ years, percent	6th form certificate or higher, 15+ years, percent	Means-tested benefit, 15+ years, percent	Home ownership, 15+ years, percent
< 5 years	Male	68.1	69.6	9.0	78.1	13.4	19.6
	Female	67.4	73.1	7.4	78.5	14.1	22.5
	Total	67.8	71.5	8.2	78.3	13.8	21.2
5–9 years	Male	83.3	70.1	8.4	83.3	19.2	38.5
	Female	78.0	73.6	6.5	80.8	18.7	45.2
	Total	80.4	72.0	7.4	81.9	19.0	42.2
10+ years	Male	83.4	51.2	5.0	70.1	11.9	60.3
	Female	79.6	59.4	4.2	67.1	12.4	62.2
	Total	81.4	55.5	4.6	68.6	12.2	61.3
New Zealand born	Male	93.0	42.6	5.7	64.9	15.4	40.1
	Female	93.3	50.8	5.6	65.4	17.9	40.4
	Total	93.1	46.7	5.6	65.1	16.7	40.2
Not specified	Male	46.6	38.1	10.2	38.1	6.0	20.3
	Female	43.2	40.0	6.9	36.4	7.1	20.7
	Total	45.0	39.0	8.5	37.4	6.4	20.4

Source: Statistics New Zealand

Note: Where a person reported more than one source of personal income, they have been counted in each applicable group.

Table A3-2: Indian socioeconomic indicators, by duration of residence in New Zealand, 2001

	Gender	English language, percent	Income $20,000 or less, 15+ years, percent	Unemployment, 15+ years, percent	6th form certificate or higher, 15+ years, percent	Means tested benefit, 15+ years, percent	Home ownership, 15+ years, percent
< 5 years	Male	88.0	50.4	10.9	76.9	12.8	18.0
	Female	83.9	62.1	11.4	73.3	14.0	19.3
	Total	86.0	56.4	11.2	75.1	13.4	18.7
5–9 years	Male	93.2	42.5	6.5	77.6	16.0	38.5
	Female	87.7	59.2	6.5	70.2	19.7	40.5
	Total	90.2	51.7	6.4	73.4	18.0	39.5
10+ years	Male	94.4	36.7	5.4	69.6	12.1	60.3
	Female	91.1	53.1	5.0	61.5	15.1	59.5
	Total	92.8	44.4	5.2	65.7	13.5	59.9
New Zealand born	Male	95.0	44.5	8.1	61.0	17.4	32.3
	Female	95.0	54.6	7.1	60.4	21.0	35.0
	Total	95.0	49.5	7.6	60.7	19.2	33.7
Not specified	Male	63.6	30.9	8.3	40.3	9.7	24.6
	Female	56.6	39.3	8.4	35.7	11.7	24.0
	Total	60.0	34.9	8.5	37.8	10.7	24.1

Source: Statistics New Zealand

Note: Where a person reported more than one source of personal income, they have been counted in each applicable group.

Table A3-3: Other Asian socioeconomic indicators, by length of time in New Zealand, 2001

	Gender	English language, percent	Income $20,000 or less, 15+ years, percent	Unemployment, 15+ years, percent	6th form certificate or higher, 15+ years, percent	Means tested benefit, 15+ years, percent	Home ownership, 15+ years, percent
< 5 years	Male	74.4	57.4	9.6	71.3	13.9	13.8
	Female	73.0	63.0	7.5	71.7	11.6	17.0
	Total	73.6	60.6	8.4	71.5	12.6	15.6
5–9 years	Male	85.6	59.8	8.3	82.4	22.9	34.8
	Female	84.3	69.3	6.8	80.0	21.1	40.6
	Total	84.9	65.1	7.5	81.1	21.9	38.0
10+ years	Male	90.8	43.6	6.8	69.2	15.4	46.6
	Female	91.4	57.4	6.0	71.0	16.6	57.5
	Total	91.1	51.8	6.3	70.3	16.1	53.1
New Zealand born	Male	92.9	66.0	10.1	57.0	24.2	12.7
	Female	92.2	66.4	10.0	62.6	25.5	14.0
	Total	92.6	66.2	10.2	60.0	25.0	13.4
Not specified	Male	39.7	25.1	9.1	28.9	5.7	7.9
	Female	40.5	31.0	9.4	30.9	6.3	13.7
	Total	40.1	28.4	9.2	30.0	6.0	11.1

Source: Statistics New Zealand

Note: Where a person reported more than one source of personal income, they have been counted in each applicable group.

Appendix 4: Tables of Data

Table A4-1: Crude rate (per 100,000) of avoidable mortality, by duration of residence in New Zealand, Asian ethnic group and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	72.1 (54.5–93.6)	39.2 (27.3–54.5)	116 (87.2–151.4)	61.2 (41–87.8)	93.6 (71.6–120.2)	37.4 (25.2–53.4)
5–9 years	96.2 (69.9–129.1)	60.9 (41.9–85.5)	230.1 (160.3–320)	114.7 (71–175.3)	112.8 (80.6–153.6)	67.7 (45.4–97.3)
> 10 years and New Zealand born	148.2 (124.7–174.9)	75.1 (58.6–94.7)	148.4 (122.4–178.2)	92.7 (71.7–117.9)	142.5 (110.9–180.3)	92.0 (69.5–119.4)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-2: Age-standardised rate (per 100,000) of avoidable mortality, by duration of residence in New Zealand, Asian ethnic group and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	71.6 (54.1–92.9)	45.4 (31.6–63.1)	181.6 (136.4–237)	110.4 (74–158.6)	181.4 (138.8–233)	67.9 (45.8–96.9)
5–9 years	129.3 (93.9–173.5)	64.1 (44.1–90.1)	293.2 (204.2–407.8)	127.1 (78.7–194.2)	262.7 (187.7–357.7)	114.4 (76.6–164.3)
> 10 years and New Zealand born	163.4 (137.5–192.8)	82.5 (64.4–104)	200.5 (165.4–240.9)	135.0 (104.4–171.8)	227.7 (177.1–288.1)	131.0 (99–170.1)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-3: Age-standardised mean SF- 36 scores (Mental Health, Social Functioning scales and Vitality), by Asian ethnic groups and total New Zealand population and sex, 2003

	Chinese		Indian		Other Asian		Total population	
	Male	Female	Male	Female	Male	Female	Male	Female
SF-36 Mental Health	85.5 (82.6–88.4)	84.1 (81.6–86.6)	80.8 (75.8–85.7)	80.3 (74.2–86.3)	85.8 (83–88.5)	79.4 (74.7–84.1)	84.4 (83.8–85.0)	81.6 (81–82.2)
SF-36 Vitality scale	75.1 (71.6–78.6)	70.3 (66.5–74.1)	70.2 (63.3–77.1)	68.1 (63.4–72.8)	78.0 (74.1–82)	66.4 (59.3–73.5)	67.8 (66.9–68.7)	62.4 (61.6–63.1)
SF-36 Social Functioning	95.0 (91.0–99.0)	93.9 (90.6–97.1)	94.0 (90.3–97.7)	94.4 (91.0–97.9)	91.6 (86.9–96.4)	88.2 (78.6–97.7)	91.7 (90.8–92.6)	89.4 (88.5–90.2)

Source: 2002/03 New Zealand Health Survey, Ministry of Health

Table A4-4: Crude rate (per 100,000) of total cardiovascular disease mortality, by duration of residence in New Zealand, Asian ethnic group and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	37.0 (24.8–53.1)	21.1 (12.7–32.9)	68.3 (46.7–96.4)	44.1 (27.3–67.3)	22.9 (12.8–37.7)	14.9 (7.7–26.0)
5–9 years	47.6 (29.8–72)	34.5 (20.8–53.9)	130.0 (79.4–200.7)	59.6 (29.8–106.7)	47.7 (27.8–76.4)	20.9 (9.6–39.7)
≥ 10 years and New Zealand born	102.9 (83.6–125.3)	95.6 (77.2–117.2)	101.9 (80.7–127)	86.0 (66.0–110.3)	73.8 (51.7–102.2)	66.7 (47.8–90.4)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-5: Age-standardised rate (per 100,000) of total cardiovascular disease mortality, by duration of residence in New Zealand, Asian ethnic group and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	63.3 (42.4–90.9)	52.6 (31.6–82.1)	200.0 (136.8–282.4)	136.4 (84.4–208.5)	78.6 (44.0–129.7)	69.1 (35.7–120.7)
5–9 years	104.7 (65.6–158.5)	67.7 (40.8–105.7)	253.1 (154.6–390.9)	191.2 (95.4–342.1)	204.5 (119.1–327.4)	78.5 (35.9–148.9)
≥ 10 years and New Zealand born	141.6 (115.1–172.4)	101.0 (81.5–123.7)	239.0 (189.2–297.9)	197.9 (151.8–253.8)	204.4 (143.1–282.9)	189.0 (135.6–256.3)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-6: Crude rate (per 100,000) of all cancer mortality, by duration of residence in New Zealand, Asian ethnic groups and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	38.3 (25.8–54.6)	26.6 (17.1–39.6)	38.4 (22.8–60.7)	21.0 (10.1–38.6)	25.9 (15.1–41.5)	23.5 (14.2–36.8)
5–9 years	64.9 (43.8–92.6)	56.3 (38.3–80.0)	39.0 (14.3–84.9)	65.0 (33.6–113.6)	67.3 (43.1–100.2)	51.1 (32–77.4)
≥ 10 years and New Zealand born	75.9 (59.5–95.4)	71.0 (55.2–89.8)	43.9 (30.4–61.3)	47.2 (32.7–65.9)	65.6 (44.9–92.7)	65.0 (46.5–88.6)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-7: Age-standardised rate (per 100,000) of all cancer mortality, by duration of residence in New Zealand, Asian ethnic group and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	61.5 (41.5–87.8)	37.3 (23.9–55.4)	78.5 (46.5–124.1)	41.0 (19.6–75.3)	83.8 (48.8–134.1)	57.3 (34.5–89.5)
5–9 years	113.5 (76.6–162)	66.3 (45.0–94.1)	49.7 (18.3–108.3)	98.2 (50.7–171.6)	353.5 (226.5–526)	165.8 (103.9–251)
≥ 10 years and New Zealand born	95.7 (75.0–120.3)	77.1 (60.0–97.6)	89.3 (61.8–124.7)	82.7 (57.3–115.5)	194.9 (133.3–275.1)	127 (90.7–172.9)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-8: Crude rate (per 100,000) of non-tobacco-related cancer mortality, by duration of residence in New Zealand, Asian ethnic group and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	21.9 (12.7–35)	20.2 (12.0–31.9)	30.1 (16.4–50.5)	19.0 (8.7–36.0)	12.3 (5.3–24.2)	17.5 (9.5–29.3)
5–9 years	37.2 (21.6–59.5)	48.0 (31.3–70.3)	32.9 (10.7–76.7)	49.1 (22.5–93.3)	42.3 (23.7–69.8)	37.4 (21.4–60.7)
≥ 10 years and New Zealand born	42.4 (30.3–57.7)	32.8 (22.3–46.5)	29.9 (19.0–44.9)	32.3 (20.5–48.5)	31.0 (17.3–51.1)	41.1 (26.6–60.6)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-9: Age-standardised rate (per 100,000) of non-tobacco-related cancer mortality, by duration of residence in New Zealand, Asian ethnic group and sex

	Chinese		Indian		Other Asian	
	Male	Female	Male	Female	Male	Female
< 5 years	26.2 (15.3–41.9)	20.2 (12.0–31.9)	53.7 (29.4–90.1)	26.0 (11.9–49.3)	28.8 (12.4–56.7)	31.7 (17.3–53.2)
5–9 years	51.1 (29.7–81.8)	47.8 (31.2–70.0)	42.0 (13.6–98.1)	57.7 (26.4–109.5)	93.1 (52.1–153.6)	70.9 (40.5–115.1)
≥ 10 years and New Zealand born	44.9 (32.1–61.2)	33.4 (22.7–47.4)	42.9 (27.2–64.4)	45.8 (29.0–68.7)	45.7 (25.6–75.4)	60.3 (39.0–89.1)

Source: New Zealand Health Information Service, Ministry of Health

Table A4-10: Age-standardised rate (per 100) of uptake of cervical screening, by Asian ethnic group

Cervical smear coverage (%)				
Age	Chinese	Indian	Other Asian	Total population
20–69 years	51.9	62.6	43.6	73.1

Source: National Screening Unit, Ministry of Health

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