“Tall, active, and well made”? Māori and Pākehā health inequalities in New Zealand in long-term perspective

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Background

World, the First Voyage Around the.

“The Natives of this Country are a strong raw boned well made Active people rather above than under the common size especially the men. They seem to enjoy a good state of health and many of them live to a good old age.”

Captain James Cook during the First Voyage Around the World, 26 March 1770.

Māori health and mortality after 1840

The Māori population of New Zealand halved after British colonization in 1840. Despite rapid population recovery in the twentieth century, health disparities remain significant.

The health of living Māori is poorly documented before the mid-twentieth century.

Stature as a long-term measure of living standards

Stature can provide evidence on long-term trends in health

- Changes in average stature of a population reflects net nutrition during growth period (0-20 yrs, especially 0-5 years)
- Changes in net nutrition can come from:
  - Food consumption, e.g. price of food/protein changes
  - Physical exertion e.g. children working during adolescence
  - Disease exposure (particularly infectious, dysentry)

Sources for studying stature in New Zealand, c. 1500-1990

<table>
<thead>
<tr>
<th>Birth cohort</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>c. 1500 – 1800</td>
<td>Modern anthropological studies of skeletons</td>
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<tr>
<td>c. 1810 – 1830</td>
<td>147 men described in Journal of the Royal Statistical Society article by A.S. Thomson in 1851</td>
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<td>c. 1830 – 1890</td>
<td>Armed Constabulary 1860s-1880s, Militia 1882-1900, South African War 1899-1902</td>
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<td>c. 1830 – 1950</td>
<td>Prisons</td>
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<tr>
<td>c. 1870 – 1900</td>
<td>World War I enlistment</td>
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<tr>
<td>c. 1890 – 1925</td>
<td>World War II enlistment</td>
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Example of principal data sources

Military enlistment forms recorded socio-economic, demographic, and anthropometric information. Similar information was recorded in prison registers. We collected:

- all extant prison registers
- 20% sample of WWI
- 8% sample of WWII

Māori and Pākehā stature in prison and military records

Stature convergence for recent generations suggests the cardiovascular mortality gap could narrow for Māori men born in the 1970s. The gap in stature between Māori and Pākehā began to close after World War II, coincident with population growth.

Decline is consistent with morbidity and mortality evidence from the inter-war period, but occurred at a time of rapid Māori population growth.

Early twentieth century divergence persisted until the generation born in the 1970s. The gap in stature between Māori and Pākehā began to close after World War II, coincident with rapid urban migration of the Māori population and fertility decline.

Our research shows that the demographic consequences of colonization occurred over multiple generations, and took several generations to close.

Cardiovascular and ischaemic heart disease mortality (correlated with short stature) is elevated in older Māori men. Stature convergence for recent generations suggests the cardiovascular mortality gap could narrow for Māori men born since the 1970s.

Conclusions

- Nineteenth century Māori and Pākehā were relatively tall compared to European and Americans.
- No evidence Māori are genetically predisposed to shortness.
- Some evidence of modest Māori stature decline during the 19th century, of surprisingly low magnitude given significant population decline. In the nineteenth century Māori stature decline was coincident with Pākehā stature decline.
- In the first half of the twentieth century Māori male stature declined both absolutely and, compared to Pākehā. Stature decline is consistent with morbidity and mortality evidence from the inter-war period, but occurred at a time of rapid Māori population growth.
- Early twentieth century divergence persisted until the generation born in the 1970s. The gap in stature between Māori and Pākehā began to close after World War II, coincident with rapid urban migration of the Māori population and fertility decline.

Statue decline was coincident with Pākehā stature decline.

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