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Indigenous adolescent health in Aotearoa New Zealand: Trends, policy and advancing equity for rangatahi Maori, 2001−2019

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Summary

Background Rangatahi Māori, the Indigenous adolescents of Aotearoa New Zealand (NZ), have poorer health outcomes than Pākehā (NZ European /other European/"White") adolescents. We explored the influence of policies for Indigenous youth by presenting health trends, inequities and contrasting policy case examples: tobacco control and healthcare access.

Methods Cross-sectional representative surveys of NZ secondary school students were undertaken in 2001, 2007, 2012 and 2019. Health indicators are presented for Māori and Pākehā adolescents (relative risks with 95% CI, calculated using modified Poisson regression) between 2001−2019 and 2012−2019. Policy examples were examined utilising Critical Te Tiriti Analysis (CTA).

Findings Rangatahi Māori reported significant health gains between 2001 and 2019, but an increase in depressive symptoms (13.8% in 2012 to 27.9% in 2019, RR 2.01 [1.65−2.46]). Compared to Pākehā youth there was a pattern of persistent Māori disadvantage, particularly for racism (RR 2.27 [2.08−2.47]), depressive symptoms (RR 1.42 [1.27−1.59]) and forgone healthcare (RR 1.63 [1.45−1.84]). Tobacco use inequities narrowed (RR 2.53 [2.12−3.02] in 2007 to RR 1.55 [1.25−1.93] in 2019). CTA reveals rangatahi Māori-specific policies, Māori leadership, and political support aligned with improved outcomes and narrowing inequities.

Interpretation Age-appropriate Indigenous strategies are required to improve health outcomes and reduce inequities for rangatahi Māori. Characteristics of effective strategies include: (1) evidence-based, sustained, and

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comprehensive approaches including both universal levers and Indigenous youth-specific policies; (2) Indigenous and rangatahi leadership; (3) the political will to address Indigenous youth rights, preferences, priorities; and (4) a commitment to an anti-racist praxis and healthcare Indigenisation.

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Research in context

Evidence before this study

Rangatahi Māori (Indigenous youth/adolescents) in New Zealand experience inequitable health outcomes compared to Pākehā (NZ European and other European or "White", cultural majority) adolescents. Although Māori health equity is frequently stipulated as a priority for government policy, inequities in health outcomes often remain. It is therefore important to examine public health initiatives and policy changes that occur in tandem with changes in health outcomes for rangatahi Māori.

We searched Ovid Medline on 29 January 2022 using the terms ((Māori or Indigenous) AND ("New Zealand" OR Aotearoa) and (adolescent* OR adolescence or teenager* OR youth OR "young people" OR rangatahi OR taitamariki OR taiohi) AND (health OR wellbeing OR hauora) AND (surveillance OR monitor* OR assess OR measure* OR evaluate OR evaluation OR effectiveness OR efficacy OR trend* OR inequity OR inequities OR inequality OR inequalities) and (intervention* OR programme* OR program OR policy OR policies OR promotion*)).mp. Full-text articles written in English and published between 2000 and 2022 were included. We found 37 published studies and determined 12 directly relevant to this paper after reviewing titles and abstracts. Five studies reported improved health outcomes with an intervention or public health initiative. One study described a national health promotion programme focused on Mātauranga Māori (Māori knowledge systems), which was found to support healthier lifestyles among rangatahi and whānau (extended family networks), an increased desire to participate in school and extracurricular activities, as well as connection to te ao Māori (Māori world view). Most of the remaining studies either did not specifically report rangatahi Māori outcomes or did not consider policy changes or public health initiatives associated with health outcomes for rangatahi Māori over time. Rather, they either reported inequities in health status at one time point or considered the effectiveness of interventions or policy changes that targeted tamariki Māori (Māori children), adult Māori, or all youth in general.

Added value of this study

This study provides an overview of Indigenous youth trends in Aotearoa New Zealand over two decades utilising repeated series of cross-sectional and representative surveys of secondary school students. Health inequities persisted over the 19-year period for rangatahi Māori, when compared to their Pākehā (NZ European /other European/"White") peers, with few exceptions. We highlight the strategies and policies associated with health gains and highlight those where gains have not been made. The reliance on universalist approaches (i.e., improving healthcare access for everyone, without culturally specific strategies, resources, and policy for rangatahi Māori) have failed. The persistent privileging of Western knowledge and healthcare preferences only serves to widen inequity for rangatahi Māori. Strategies that were associated with narrowing of inequity had four major characteristics including: (1) evidence-based, sustained, and comprehensive approaches - using both universal levers and rangatahi Māori-specific policies; (2) Māori and rangatahi leadership; (3) the political will to address rangatahi Māori rights, preferences, and priorities and, (4) a commitment to an anti-racist praxis and indigenisation within healthcare.

Implications of all the available evidence

This study adds evidence that Indigenous and age-appropriate strategies are required to improve health outcomes and reduce inequity for Indigenous youth. Strategies to improve health equity for Indigenous youth include Indigenous leadership to self-determine holistic Indigenous health models, systems, practices, and strategies that are developmentally appropriate, comprehensive, and well-resourced. There is growing evidence that continuing to privilege Western knowledge and preferences will only serve to perpetuate health inequity for Indigenous and other minority populations, and create environments where institutional racism thrives. Indigenising health systems and policies will require radical transformation which will need to place the rights, needs and preferences of Indigenous youth, and their families at the core.

Introduction

Adolescent wellbeing is profoundly shaped by the environments in which they live, grow, and learn.[1] Exposure to poverty, adverse childhood circumstances, unsafe schools and communities are associated with poorer outcomes and increased risk-taking behaviours.[2] Unique to Indigenous peoples are the additional impacts of colonisation to wellbeing.[3] In Aotearoa New Zealand (NZ), colonisation systematically undermines Indigenous self-determination[4] and knowledge systems[5] through intergenerational disconnection from land, language, and culture.[4,6,7] For rangatahi Māori, the Indigenous youth of NZ, this manifests as inequitable health outcomes when compared to their Pākehā (NZ European and other European or "White", cultural majority) peers.[8] Māori constitute 17.1% of the NZ population, with a youthful median age of 25·4 years compared to 41·4 years for the Pākehā population.[9] To improve the health and wellbeing of Māori an explicit focus on addressing the impacts of colonisation and the associated ripples of disadvantage and discrimination is required, alongside specific strategies to protect and nurture rangatahi.

Despite exposure to oppression and structural disadvantage, Māori are strong and resilient people.[10] There have been decades of resistance to colonialism by Māori, including language and cultural revitalisation.[4,7,10] In recent years specific health and social gains for rangatahi include increasing educational success, employment, standards of living, general health status, and large reductions in youth offending rates and unintended pregnancies.[11] Te Tiriti o Waitangi is a treaty signed in 1840 by the Crown and Māori intended to legitimatise settler presence in Aotearoa. However, there are two versions of the Treaty, English and Māori, with discrepancies. The Māori language version never ceded sovereignty to the Crown (the English version did), but rather agreed to governorship, affirmed full and undisturbed possession of lands and treasured possessions, and conferred the same rights and privileges to Māori, as British subjects. The Crown now acknowledges that equitable health outcomes for Māori are a *right*.[12] Te Tiriti o Waitangi has important implications for Māori, including the right to health equity and a health system that accounts for Māori preferences in its policy, design, and delivery.

The Global Collective for Indigenous Adolescent Health and Evidence-Based Action highlighted the precarious health status of Indigenous youth, and the need for advocacy and evidence-based actions to systematically improve outcomes. The current study aims to:

- Report key health trends for rangatahi Māori over a 19-year period.
- Investigate patterns of health inequity for Māori compared to Pākehā adolescents.
- Examine two policy strategies, tobacco control and healthcare access, to highlight Indigenous policy responsiveness against Te Tiriti o Waitangi obligations and identify strategies associated with improved outcomes.

Methods

The Youth2000 survey series are anonymous, cross-sectional, health and wellbeing surveys of New Zealand secondary school students, undertaken in 2001, 2007, 2012 and 2019. Previously reported methods[13,14] are summarised here.

Surveys

The self-report questionnaires were delivered via digital devices using M-CASI technology (text on screen and read aloud with headphones for privacy in English or Māori) during school time. The branching questionnaire design minimised exposure to irrelevant questions. The questionnaires covered demographics, identity, and key health and wellbeing indicators (full questionnaire here https://bit.ly/3MGdD39). Each survey wave was approved by the University of Auckland Human Participants Ethics Committee [Reference Numbers 1999/014(2001), 2005/414(2007), 2011/206 (2012) and 2018/023450(2019)].

Population and sampling methods

Survey populations comprised secondary school students (almost all 13–18 years). Sampling provided sufficient statistical power for ethnicity-specific analyses. All waves used a two-stage clustered sampling design with randomly selected schools and, within these, randomly selected students. In 2001, 2007 and 2012, one-third of secondary schools were selected and, in each participating school of >150 students, 20% of the roll was invited to participate. In schools with fewer students, 30 students were randomised. The last wave (2019) sampled schools from three regions (Auckland, Tai Tokerau and Waikato), which includes >45% of NZ's adolescent population. In each region 50% of schools were randomly sampled and 30% of students on their roll were invited. In 2019, all kura kaupapa Māori (Māori immersion schools) from the regions were also invited. All kura students were asked to participate.

Outcome measures

Table 1 describes the demographic variables and outcome measures used, including question wording, response options, and how measures were derived. Outcome domains were: mental and physical health; health behaviour; family, school and neighbourhood

environment; experience of racism; and health care access. There were low levels of missingness for each item (see Supplementary Table A).

Analyses and national estimates

Analyses were conducted in R using the survey package and tidyverse suite.[15] Tables were prepared using the knitr, kable and kableExtra packages. All analyses accounted for complex sampling. Data were initially weighted using inverse probability of selection (IPS) weights [calculated for each student as: (total number of schools ÷ schools that participated) × (total number of eligible students in the student's school ÷ students from that school that participated)]. Generalised raking[16] was used to correct for non-response and to calibrate the results of each survey wave to the national secondary school population[14] based on school decile (a school-level measure of socioeconomic status), student age, sex, and ethnicity.

The prevalence of each outcome was calculated using complete case analysis (i.e., participants responding to that particular item). Relative risk (using the earliest available year as the reference) was used to examine changes over time in health indicators. We also used relative risk to explore ethnic differences, with Pākeha/European used as the reference group. Relative risks were calculated using Poisson regression with a variance estimator modified to be appropriate for binary outcomes and complex samples.[17] Regression models did not include covariates because we are not attempting to describe the independant effect (i.e. after adjsutment for covariates) of being Māori on health status and outcomes. Analyses that adjusts out the effect of important unmodifiable covariates such as age are of limited usefulness in policy development as differences in age structure between Maori and non-Maori are not modifiable and need to be taken in to account in policy development.

Policy case examples

To provide context to the survey results, and opportunities for lesson-drawing for other Indigenous populations, we selected two policy areas (tobacco control and healthcare access) with contrasting policy approaches and outcomes for Indigenous youth. Tobacco control was seen as an area of improvement for rangatahi Māori, while healthcare access saw no improvement. A timeline of relevant interventions, policies and strategies was developed, and presented alongside observed health outcomes. A Critical Te Tiriti Analysis (CTA) framework was utilised to evaluate the Crown's compliance with Te Tiriti obligations and responsibilities for rangatahi.[18] CTA utilises a five-phase process (orientation, close examination, determination, strengthening practice, Māori final word) for analysing policies and strategies against specified criteria related to Te Tiriti o Waitangi including:

- Māori-led policy development.
- Equitable Māori participation and leadership.
- Inclusion of Māori epistemologies, approaches, and authority.
- Māori exercising citizenship.
- Acknowledging wairuatanga/spirituality (see Tables 5 & 6).

Role of the funding source

The funder, specifically the Health Research Council of New Zealand, had no role in data collection, analysis, interpretation, writing of the manuscript nor the decision to submit.

Results

The combined school and kura response rates for the four waves in 2001, 2007, 2012 and 2019 were 86%, 84%, 73% and 57%. Student response rates were 74%, 74%, 68% and 60%. The declining response was largely due to schools feeling overwhelmed with increasing workloads, industrial action, a measles outbreak and, for some rangatahi Māori, participation in the Ihumatao Indigenous land occupation.[13] Proportions of students by age, sex, school decile, and geographical location across the four waves are reported (Table 2) and were generally representative of students in NZ.[14] (p. 14). Rangatahi Māori are over-represented in low decile (poorer) schools and have a younger age structure compared to Pākehā students.

There was a mixed picture of progress between 2001 and 2019. Approximately 90% of rangatahi Māori reported good or excellent general health, with little change over time (Table 3). Reporting at least one parent caring about them a lot was consistently high for rangatahi Māori (e.g., 89.6% in 2019), and the proportion frequently bullied at school was relatively low (e.g., 6.0% in 2019). Contraception use, for those who were sexually active, was consistently low (51.8% in 2019). Other items varied more over time, with major improvements in some areas (e.g., smoking, binge drinking and risky driving). There was a concerning increase in rangatahi Māori with clinically significant depressive symptoms (13.8% in 2012 to 27.9% in 2019, RR 2.01 [1.65–2.46]).

The results show that experiences of racism and structural disadvantage are commonplace for rangatahi Māori and increased significantly between 2012 and 2019. The proportion of rangatahi Māori who experienced racism increased from 28.8% in 2012 to 37.7% in 2019 (RR, 1.31 [1.17–1.46]) with this proportion rising to almost 60% when 'unsure' responses were included. The proportion accessing healthcare in the past 12 months decreased steadily from 82.4% in 2007 to 74.1% in 2019 (RR 0.90 [0.87–0.93]), and the proportion unable to access healthcare when needed increased from 21.6% in 2012 to 26.9% in 2019 (RR 1.25 [1.08 –1.44]). Indicators of Māori cultural connectedness (e.

Indicator/variable	Question	Derived variable
Age	How old are you? Under 12 years 12 13 14 15 16 17 18 19 Over 19 years	Age selected. Ages 13 and under were grouped together, as were ages 17 and over.
Sex	How do you describe yourself? I am a boy/man I am a girl/woman I identify in another way	Boy/man = male Girl/woman = female In another way = Another way 2019 was the first survey wave in which students were able to report a sex other than male or female. Those who did not report a male or female sex were excluded for comparability with previous surveys, and their health and wellbeing will be reported in other outputs.
Ethnicity	Students reported their ethnicity from the Statistics New Zealand classification[28] (question: which ethnic group do you belong to?) and were able to choose as many ethnicities as applied to them.	Students who selected multiple ethnicities were assigned to a single ethnicity using the NZ Census ethnicity prioritisation method. Any student who selected Māori was defined as Māori ethnic group. Pākehā, New Zealand European or Other European ('White") were those students who selected only those ethnic groups.
School decile	School-level measure of SES based on New Zealand census data on five indicators (household income, proportion of parents on income support benefits, household crowding, parental educational qualifications, and occupational skill level of employed parents). Students from lower decile schools are generally from more socioeconomically disadvantaged neighbourhoods.	Derived from the school decile of participants' school.
Urban/rural location	Residential address	Derived from students' residential address and census meshblock. Classifications are based on Statistics New Zealand definitions. Major urban = 100.000 or more residents, small town = 1,000−9,999 people, rural = fewer than 1,000 people
Good or excellent general health	In general, how would you say your health is? Excellent Very good Good Fair Poor	Students who answered "Excellent", "Very good" or "Good" health were classified as having "Good or excellent general health".
Good emotional wellbeing (WHO-5)	WHO-5 I have felt cheerful and in good spirits I have felt calm and relaxed I have felt active and vigorous I woke up feeling fresh and rested My daily life has been filled with things that interest me	Each response was scored 0 (At no time) to 5 (All of the time), and these scores were summed. Students with a score of at least 13 were classified as having good emotional wellbeing.

Table 1 *(Continued)*

Indicator/variable	Question	Derived variable
Significant depressive symptoms (RADS-SF)	Reynolds Adolescent Depression Scale (Reynolds, 2002)	Students with a score of at least 28 were classified as having significant depressive symptoms. This scale has been validated within New Zealand youth populations (Milfont 2008)
Always use contraception	How often do you, or your partner(s) use contraception (by this, we mean protection against pregnancy)? Responses Always Most of the time Sometimes Never This does not apply to me	This only applies to currently sexually active students. Those who responded "Always" were classified as "Yes", those who responded "Most of the time", "Sometimes", or "Never" were classified as "No". Those who indicated that contraception did not apply were classified as NA.
Smoked cigarettes at least monthly	How often do you smoke cigarettes now? Reponses: Never - I don't smoke now Occasionally Once or twice a month Once or twice a week Most days Daily	Students who responded that they smoke, "Once or twice a month" or more were classified as "Yes" for this indicator.
Binge drank at least once in the last month	In the past 4 weeks, how many times did you have 5 or more alcoholic drinks in one session? Responses: None at all Once in the past 4 weeks Two or three times in the past 4 weeks Every week Several times a week	Students who responded "Once in the past 4 weeks" or more were classified as "Yes".
Vigorous physical activity	In the last 7 days, how many times have you done any exercise or activity that makes you sweat or breathe hard, or gets your heart rate up (such as soccer or rugby, running, swimming laps, fast bicycling etc.)? Responses: I don't exercise Not in the last 7 days 1—3 times 4—6 times 7 or more times	Students who responded "7 or more times" were classified as "Yes".
Passenger driven by a risky driver in the last month	During the last month, did you ride in a car driven by someone. . . Who had been drinking alcohol? Who was high or had been taking drugs? Who was driving dangerously (speeding, racing, burnouts)?	Students who responded "Yes" to any of these questions were classified as "Yes".
Unable to access healthcare in the last 12 months	In the last 12 months, has there been any time when you wanted or needed to see a doctor or nurse (or other health care worker) about your health, but you weren't able to?	Yes
Feel at least one parent care for them lots	How much do you feel the following people care about you? My mum (or someone who acts as your mum), My dad (or someone who acts as your dad), Other	Students who responded "A lot" were classified as "Yes".

Table 1 *(*Continued*)*

Indicator/variable	Question	Derived variable
	family members	
	Responses:	
	Not at all	
	A little	
	Some	
	A lot	
	Does not apply to me	
Family usually wants to know who you are with and where you are	Does your family want to know who you are with and where you are?	Students who responded "Always" or "Usually" were classified as "Yes".
	Responses:	
	Always	
	Usually	
	Sometimes	
	Almost never	
Feel part of school	Do you feel like you are part of your school?	Yes
Bullied at school weekly or more often	In the last 12 months how often have you been bullied in school/course?	Students who responded "About once a week or more" were classified as "Yes".
Experienced any racism	Have you ever been treated unfairly (e.g. treated differently, kept waiting) by a health professional (e.g. doctor, nurse, dentist etc.) because of your ethnicity or ethnic group?	If a student responded "Yes, within the past 12 months" or "Yes, more than 12 months ago" to any of the three questions about being treated unfairly, or they had been bullied because of their ethnicity, they were classified "Yes".
	Have you been treated unfairly (picked on, hassled, etc.) by the police because of your ethnic group?	If they were not classified "Yes" and responded, "I don't know/unsure" to any of the three questions, they were classified as "Unsure".
	Have you ever been treated unfairly (e.g. treated differently) by a teacher/tutor because of your ethnic group?	If students answered all questions "No", they were classified "No". Remaining students with some missing responses were classified "NA".
	Responses:	
	Yes, within the past 12 months	
	Yes, more than 12 months ago	
	No	
	I don't know/unsure	
	What was the reason you were bullied?	
	Responses:	
	I was bullied because of my ethnic group or culture	
	I was bullied because of my religion	
	I was bullied because of my size or body shape	
	I was bullied because I am lesbian, gay, bisexual or gender diverse, or because people thought I was	
	I was bullied because of my disability or health issue	
	Other or I don't know why I was bullied	
Always safe in neighbourhood	Do you feel safe in your neighbourhood?	Those who responded "All the time" were classified as "Yes".
	Responses:	
	All the time	
	Sometimes	
	Not often	
	Never	
Accessed healthcare in the last 12 months	When was the last time you went for health care (excluding looking online)?	Those who responded "0–12 months ago" were classified as "Yes".
	Responses:	
	0–12 months ago	
	13–24 months ago	
	More than 2 years ago	

***Table 1*: Demographic variables and outcome indicators.**

	2001				2007			
	Māori		Pākehā		Māori		Pākehā	
Demographic	*n*	% [95% CI[f]]	*n*	% [95% CI]	*n*	% [95% CI]	*n*	% [95% CI]
Total	2335		5402		1702		4797	
Age								
13 and under	576	22.3 [20.3–24.3]	1102	18.3 [17.6–18.9]	414	22.1 [19.8–24.5]	959	17.9 [16.9–18.9]
14	661	28.0 [25.7–30.3]	1218	21.4 [20.7–22.0]	434	24.5 [22.6–26.4]	1139	22.7 [22.0–23.5]
15	540	22.8 [21.1–24.5]	1248	21.4 [20.8–22.0]	387	23.1 [21.6–24.6]	1031	21.8 [21.2–22.5]
16	359	15.2 [13.8–16.7]	1049	19.4 [18.9–20.0]	268	16.3 [14.9–17.8]	932	19.4 [18.7–20.0]
17 and over	199	11.6 [9.9–13.4]	785	19.5 [18.7–20.4]	199	13.9 [12.2–15.6]	736	18.1 [17.2–19.1]
Sex								
Female	1235	47.4 [40.8–54.0]	2931	50.7 [48.4–52.9]	820	52.3 [48.1–56.4]	2166	48.7 [46.3–51.1]
Male	1100	52.6 [46.0–59.2]	2471	49.3 [47.1–51.6]	882	47.7 [43.6–51.9]	2631	51.3 [48.9–53.7]
School decile								
1-2	401	22.0 [12.8–31.2]	100	3.0 [0.9–5.1]	218	20.4 [16.3–24.6]	98	3.3 [1.4–5.1]
3-4	525	29.2 [18.5–39.9]	680	17.6 [12.7–22.5]	523	26.1 [20.1–32.1]	647	12.1 [9.3–14.9]
5-6	661	23.5 [15.7–31.3]	1576	27.2 [20.8–33.6]	436	20.9 [17.5–24.2]	1485	27.0 [24.5–29.5]
7-8	478	15.4 [9.3–21.6]	1599	25.3 [18.4–32.1]	228	18.5 [15.7–21.2]	880	28.1 [25.9–30.2]
9-10	270	9.9 [5.8–13.9]	1447	26.9 [21.7–32.1]	272	14.1 [11.3–16.9]	1448	29.6 [26.1–33.0]
Location								
Major urban					1181	74.7 [66.1–83.2]	3183	69.2 [62.8–75.6]
Small town					198	10.6 [5.5–15.7]	440	9.1 [5.3–12.8]
Rural					267	14.8 [10.3–19.2]	1035	21.7 [17.7–25.8]

	2012				2019			
	Māori		Pākehā		Māori		Pākehā	
Demographic	*n*	% [95% CI]	*n*	% [95% CI]	*n*	% [95% CI]	*n*	% [95% CI]
Total	1697		4018		1188		3053	
Age								
13 and under	413	19.2 [17.5–20.9]	840	16.7 [15.7–17.7]	257	18.7 [15.9–21.5]	578	17.7 [16.6–18.8]
14	434	25.1 [23.2–27.0]	881	20.8 [19.9–21.7]	292	22.1 [19.1–25.1]	689	19.8 [18.9–20.7]
15	354	22.0 [20.4–23.6]	821	20.7 [20.1–21.4]	286	23.6 [21.3–25.9]	654	19.1 [17.8–20.4]
16	278	17.3 [15.4–19.1]	778	20.0 [19.1–20.9]	187	16.0 [14.1–17.9]	605	21.0 [19.9–22.1]
17 and over	218	16.4 [14.5–18.4]	698	21.8 [20.6–23.0]	166	19.6 [17.0–22.3]	527	22.4 [20.6–24.2]
Sex								
Female	896	47.8 [42.9–52.6]	2229	51.0 [48.0–53.9]	632	46.2 [41.1–51.2]	1670	51.8 [47.2–56.4]
Male	801	52.2 [47.4–57.1]	1789	49.0 [46.1–52.0]	556	53.8 [48.8–58.9]	1383	48.2 [43.6–52.8]
School decile								
1–2	337	19.1 [13.9–24.4]	79	2.3 [1.0–3.6]	247	20.5 [15.2–25.8]	45	1.8 [0.3–3.2]
3–4	436	23.9 [18.8–29.0]	550	12.0 [9.0–15.1]	298	24.6 [18.3–30.8]	329	9.9 [6.7–13.1]
5–6	380	24.3 [20.5–28.0]	945	25.0 [22.3–27.8]	244	27.7 [22.8–32.7]	479	25.4 [22.8–28.1]
7–8	358	19.8 [16.7–22.9]	1340	27.7 [25.0–30.3]	193	14.9 [10.8–19.0]	774	27.8 [24.2–31.5]
9–10	186	12.9 [10.6–15.2]	1104	33.0 [30.0–35.9]	204	12.2 [9.1–15.3]	1417	35.1 [30.8–39.4]
Location								
Major urban	1194	71.4 [61.5–81.3]	2850	72.6 [64.9–80.2]	661	58.2 [48.7–67.8]	1829	63.9 [57.5–70.4]
Small town	180	11.7 [6.2–17.3]	280	7.7 [3.3–12.1]	145	17.5 [11.7–23.3]	289	12.5 [8.6–16.5]
Rural	289	16.8 [11.5–22.2]	812	19.7 [14.8–24.5]	274	24.3 [17.3–31.3]	695	23.5 [18.8–28.2]

***Table 2*: Māori and Pākehā secondary school student participants in waves 2001, 2007, 2012 and 2019.**

[a]Totals for each variable (not shown) are different to the overall total number of participating students due to different numbers of missing data for each. Other ethnic groups are excluded from this table.

[b]Sex is reported by male and female. 2019 was the first survey in which students were able to report a sex other than male or female. A total of 63 students did not report a male or female sex in 2019. Their health and wellbeing will be reported in other outputs where contexts can be explored more fully.

[c]Ethnicity was assigned on the basis of prioritised ethnicity, using the NZ Census ethnicity prioritisation method.

[d]School decile is school level measure based on 5 indicators: household income, household crowding, parental educational qualifications, proportion of students on income support benefits, and parental occupation skill level. Low decile schools generally refer to schools in poorer communities.

[e]Location is based on census meshblock address. Major urban = 100,000 or more residents, small town = 1000–9999 people, rural = fewer than 1000 people

[f] CI = Confidence interval.

Indicator[a]	2001		2007		2012		2019		Relative Risk	
by ethnicity	n (N)	%[95% CI]	n (N)	%[95% CI]	n (N)	%[95% CI]	n (N)	%[95% CI]	2001[b] to 2019	2012 to 2019
Good or Excellent general health										
Māori	2099 (2317)	90.6 [89.3–92.0]	1487 (1666)	89.1 [87.6–90.7]	1511 (1687)	89.3 [87.4–91.1]	1037 (1164)	89.1 [87.6–90.7]	0.98 [0.96–1.01]	1.00 [0.97–1.03]
Pākehā	5024 (5388)	93.2 [92.5–93.9]	4409 (4697)	93.8 [93.2–94.4]	3736 (4011)	93.0 [92.1–93.9]	2785 (3040)	91.6 [90.2–93.1]	0.98 [0.97–1.00]	0.99 [0.97–1.00]
Good emotional wellbeing (WHO-5)[c]										
Māori			1259 (1614)	77.6 [75.7–79.4]	1233 (1640)	75.3 [73.2–77.4]	733 (1103)	67.1 [64.3–70.0]	0.87 [0.82–0.91]	0.89 [0.85–0.94]
Pākehā			3651 (4614)	78.8 [77.7–80.0]	3053 (3972)	76.4 [75.1–77.7]	2075 (2988)	69.4 [67.4–71.4]	0.88 [0.85–0.91]	0.91 [0.88–0.94]
Significant depressive symptoms (RADS-SF)[d]										
Māori	345 (2229)	14.9 [13.3–16.5]	180 (1584)	11.3 [10.0–12.6]	227 (1608)	13.8 [11.4–16.3]	336 (1107)	27.9 [25.4–30.3]	1.87 [1.63–2.16]	2.01 [1.65–2.46]
Pākehā	548 (5299)	10.1 [9.2–11.0]	461 (4563)	10.4 [9.6–11.2]	486 (3934)	12.4 [11.4–13.5]	637 (2988)	19.6 [18.1–21.1]	1.93 [1.72–2.18]	1.58 [1.40–1.77]
Always use contraception										
Māori	352 (691)	50.7 [45.7–55.6]	278 (534)	52.0 [47.1–56.8]	204 (419)	47.8 [42.0–53.7]	83 (168)	51.8 [45.8–57.9]	1.02 [0.88–1.19]	1.08 [0.92–1.28]
Pākehā	642 (923)	69.7 [67.1–72.4]	657 (962)	70.0 [66.6–73.3]	486 (694)	69.3 [65.8–72.8]	203 (325)	61.6 [56.9–66.2]	0.88 [0.81–0.96]	0.89 [0.81–0.97]
Smoked cigarettes at least monthly										
Māori	574 (2080)	27.9 [25.4–30.3]	287 (1526)	19.6 [17.0–22.3]	163 (1602)	10.0 [8.4–11.6]	78 (1057)	6.7 [5.5–7.9]	0.24 [0.20–0.29]	0.67 [0.53–0.85]
Pākehā	793 (5160)	15.6 [14.3–17.0]	336 (4489)	7.8 [6.8–8.7]	180 (3954)	4.7 [4.0–5.5]	99 (2971)	4.3 [3.7–5.0]	0.28 [0.23–0.33]	0.91 [0.73–1.13]
Binge drank at least once in the last month										
Māori	1012 (1991)	51.9 [49.3–54.6]	762 (1501)	51.8 [48.5–55.2]	517 (1590)	34.8 [32.1–37.5]	291 (1033)	28.4 [25.2–31.6]	0.55 [0.48–0.62]	0.82 [0.71–0.94]
Pākehā	2090 (5093)	42.8 [41.0–44.6]	1589 (4480)	36.7 [34.8–38.6]	980 (3945)	26.8 [24.8–28.9]	657 (2946)	24.3 [21.9–26.7]	0.57 [0.51–0.63]	0.91 [0.80–1.03]
Vigorous physical activity 7 or more times in the last week										
Māori	545 (2258)	24.8 [22.6–27.0]	315 (1602)	18.9 [16.1–21.7]	341 (1641)	20.5 [18.7–22.2]	202 (1075)	21.5 [19.2–23.8]	0.87 [0.75–0.99]	1.05 [0.92–1.21]
Pākehā	1109 (5345)	21.0 [20.0–22.0]	869 (4615)	18.3 [17.0–19.6]	707 (3963)	18.1 [16.9–19.3]	497 (3001)	15.7 [14.8–16.5]	0.75 [0.69–0.80]	0.87 [0.79–0.94]
Passenger in a car driven by a risky driver in the last month										
Māori	1049 (2289)	46.1 [43.0–49.1]	545 (1655)	32.0 [29.5–34.5]	399 (1678)	24.2 [22.1–26.2]	214 (1005)	22.7 [20.3–25.0]	0.49 [0.44–0.56]	0.94 [0.82–1.07]
Pākehā	2122 (5371)	41.0 [39.5–42.5]	1111 (4699)	23.6 [22.4–24.8]	701 (3992)	18.1 [16.9–19.3]	487 (2899)	17.9 [15.9–20.0]	0.44 [0.39–0.49]	0.99 [0.87–1.13]
Foregone healthcare in the last 12 months[e]										
Māori			373 (1651)	23.1 [20.6–25.5]	367 (1669)	21.6 [19.6–23.6]	292 (1106)	26.9 [23.9–30.0]	1.17 [1.00–1.36]	1.25 [1.08–1.44]
Pākehā			642 (4674)	13.9 [13.0–14.8]	622 (4007)	15.3 [14.3–16.4]	521 (3006)	16.5 [15.3–17.7]	1.19 [1.07–1.31]	1.08 [0.97–1.19]
Accessed healthcare in the last 12 months[e]										
Māori			1355 (1646)	82.4 [80.8–83.9]	1298 (1659)	79.1 [76.9–81.4]	855 (1120)	74.1 [72.2–76.1]	0.90 [0.87–0.93]	0.94 [0.90–0.97]
Pākehā			4020 (4671)	86.1 [84.9–87.2]	3308 (3995)	83.5 [82.3–84.8]	2441 (3002)	81.1 [79.8–82.4]	0.94 [0.92–0.96]	0.97 [0.95–0.99]
Know Iwi[g]										
Māori	1402 (2325)	62.4 [59.0–65.8]	1290 (1692)	77.5 [75.2–79.8]	1300 (1696)	76.6 [74.2–79.0]	829 (1182)	70.1 [67.5–72.6]	1.12 [1.05–1.20]	0.91 [0.87–0.96]
Can speak te reo Māori										
Māori	709 (2302)	31.0 [27.4–34.5]	529 (1685)	32.6 [30.2–35.0]	529 (1694)	29.4 [27.2–31.7]	298 (1175)	23.1 [21.0–25.2]	0.75 [0.65–0.86]	0.79 [0.70–0.89]
Understand te reo Māori										
Māori	899 (2305)	38.8 [35.8–41.9]	629 (1688)	38.8 [36.1–41.5]	785 (1695)	44.7 [42.3–47.1]	411 (1179)	34.2 [31.2–37.2]	0.88 [0.78–0.99]	0.76 [0.69–0.85]
Feel at least one parent cares for them lots										
Māori	2071 (2302)	89.5 [87.8–91.2]	1457 (1666)	87.9 [86.4–89.4]	1538 (1672)	92.2 [90.7–93.6]	975 (1081)	89.6 [87.5–91.8]	1.00 [0.97–1.03]	0.97 [0.94–1.00]
Pākehā	5069 (5364)	94.4 [93.8–95.1]	4370 (4718)	92.4 [91.6–93.2]	3753 (3972)	94.5 [93.8–95.3]	2561 (2692)	95.1 [94.5–95.7]	1.01 [1.00–1.02]	1.01 [1.00–1.02]
Family usually wants to know who you are with and where you are										
Māori	1796 (2326)	76.2 [74.2–78.2]	1444 (1678)	86.3 [84.7–87.9]	1513 (1696)	88.8 [87.1–90.6]	1063 (1181)	88.9 [87.1–90.7]	1.17 [1.13–1.21]	1.00 [0.97–1.03]
Pākehā	4631 (5391)	85.2 [84.1–86.2]	4346 (4737)	91.9 [91.1–92.7]	3664 (4015)	90.8 [89.9–91.6]	2841 (3047)	92.7 [90.8–94.6]	1.09 [1.06–1.11]	1.02 [1.00–1.04]
Feel part of school										
Māori	1850 (2279)	81.7 [80.0–83.4]	1480 (1674)	89.2 [87.8–90.6]	1471 (1693)	86.3 [84.5–88.1]	969 (1154)	82.9 [80.8–85.0]	1.01 [0.98–1.05]	0.96 [0.93–0.99]
Pākehā	4374 (5347)	82.0 [80.8–83.3]	4135 (4712)	87.6 [86.6–88.7]	3483 (4011)	86.6 [85.4–87.7]	2537 (2999)	84.6 [83.2–86.1]	1.03 [1.01–1.06]	0.98 [0.96–1.00]
Bullied at school weekly or more often										
Māori	147 (2216)	6.3 [5.1–7.5]	83 (1665)	4.8 [4.0–5.6]	92 (1680)	5.3 [4.3–6.3]	69 (1141)	6.0 [4.8–7.2]	0.96 [0.72–1.27]	1.14 [0.86–1.51]
Pākehā	422 (5297)	7.7 [7.0–8.4]	327 (4709)	6.9 [6.0–7.8]	305 (4003)	7.4 [6.5–8.2]	200 (3024)	6.7 [5.0–8.5]	0.87 [0.66–1.15]	0.91 [0.69–1.21]

Table 3 *(Continued)*

Indicator[a]	2001		2007		2012		2019		Relative Risk	
by ethnicity	n (N)	%[95% CI]	n (N)	%[95% CI]	n (N)	%[95% CI]	n (N)	%[95% CI]	2001[b] to 2019	2012 to 2019
Experience any type of racism – Yes[f]										
Māori					458 (1626)	28.8 [26.4–31.2]	429 (1106)	37.7 [35.0–40.3]	1.31 [1.17–1.46]	1.31 [1.17–1.46]
Pākehā					456 (3934)	11.6 [10.7–12.5]	500 (2952)	16.6 [15.5–17.7]	1.43 [1.29–1.59]	1.43 [1.29–1.59]
Experience any type of racism – Unsure[f]										
Māori					363 (1626)	21.6 [19.7–23.4]	253 (1106)	21.6 [19.4–23.7]	1.00 [0.88–1.14]	1.00 [0.88–1.14]
Pākehā					490 (3934)	11.7 [10.7–12.8]	419 (2952)	13.8 [12.7–14.8]	1.17 [1.04–1.31]	1.17 [1.04–1.31]
Always feel safe in neighbourhood										
Māori	950 (1966)	49.0 [46.2–51.7]	700 (1507)	45.5 [42.7–48.4]	850 (1516)	55.8 [53.0–58.5]	589 (1045)	56.8 [53.0–60.5]	1.16 [1.06–1.26]	1.02 [0.94–1.11]
Pākehā	2200 (5136)	43.2 [40.9–45.6]	1829 (4496)	40.4 [38.6–42.2]	2216 (3872)	57.8 [56.0–59.7]	1853 (2977)	62.1 [60.4–63.8]	1.44 [1.35–1.53]	1.07 [1.03–1.12]

***Table 3*: Prevalence and trends for key health indicators.**

[a] For indicator questions and derivations, see Table 1.

[b] When data from 2001 were not available, the earliest year with data was used as the baseline.

[c] Good emotional wellbeing is defined as scoring at least 13 on the WHO-5 Wellbeing Index. These questions were not asked in 2001.

[d] Depressive symptoms at least 28 on the Reynolds Adolescent Depression Scale – Short Form.

[e] Questions about foregoing and accessing healthcare were not asked in 2001.

[f] Questions about experience of racism was not asked in 2001 and only some questions were asked in 2007, hence data in only available for 2012 and 2019.

[g] Iwi refers to tribal group affiliation and was only asked of Māori students, as were the questions about speaking and understanding Māori.

g., know Iwi/tribe) improved in earlier waves but decreased in the 2012–2019 period (RR 0.91 [0.87–0.96]).

Inequities appear to have remained largely stable over the 19-year period (Table 4). There were two statistically significant changes for Māori compared to Pākehā from 2001 to 2019: Māori reported an overall increase in parental monitoring (parents wanting to know where their children are and who they are with) resulting in a narrowing of inequity for this indicator (RR 0.89 [0.87–0.92] in 2001, to RR 0.96 [0.93–0.98] in 2019). Māori reported a decrease in feeling safe in their neighbourhood relative to Pākehā, losing the previous advantage they had on this indicator (RR 1.13 [1.06–1.21] in 2001 to RR 0.91 [0.86–0.97] in 2019). For self-rated general health, mental wellbeing, and sense of belonging at school, ethnic differences were minor. Prevalence of physical activity was generally higher in rangatahi Māori than Pākehā (RR 1·37 [1.20–1.57] in 2019), and Māori were less likely to report being frequently bullied at school (RR 0.89 [0.64–1.25] in 2019), although confidence intervals included the null in some waves.

For all other indicators, there was a pattern of persistent Māori disadvantage. The largest ethnic difference was for experience of racism, which was much more common among Māori (RR 2.27 [2.08–2.47] in 2019). Māori were also more likely to report forgone healthcare (RR 1.63 [1.45–1.84] in 2019), and less likely to report accessing healthcare (RR 0.91 [0.89–0.94] in 2019). For some indicators ethnic differences have fluctuated, e.g., for depressive symptoms inequity narrowed between 2001 and 2007 (RR 1.09 [0.95–1.26] compared to RR 1.47 [1.27–1.70] in 2001), but then increased (RR 1.42 [1.27–1.59] in 2019). For smoking, binge drinking, and risky driving – behaviours that declined markedly in both ethnic groups – the pattern of results suggests a lag for Māori relative to Pākehā, with a recent narrowing of inequity for tobacco use (RR 2.53 [2.12–3.02] in 2007 to RR 1.55 [1.25–1.93]).

Case example 1: Tobacco control

Aotearoa's tobacco control history is linked to the prevailing ideology of the government in each period and the way this manifested in their policy agenda and engagement with Māori. Key milestones are highlighted in the tobacco control timeline (Figure 1), and CTA findings are summarised in Table 5. Tobacco control measures introduced before 1993 took a universal (untargeted) approach, and there was no clear evidence of Māori input into policymaking. While some universal policy measures (e.g., Smokefree workplaces and a ban on tobacco advertising) would have benefited Māori, public education campaigns were largely ineffective at reaching Māori communities.[19,20] In the 1980s and

90s Māori had the highest lung cancer rates in the world, with smoking a major contributor to the health gap between Māori and non-Māori.[21] Daily smoking among adolescents (14–15 years) increased during the 1990s and peaked at 31% among rangatahi Māori in 2000, compared with 12% for non-Māori.[22]

From 1993 initiatives designed by and for Māori were publicly funded for the first time, and youth-specific policies and programmes were introduced. The 1999–2008 period was one of significant Māori leadership and important policy gains in tobacco control (e.g., Smokefree bars and schools, graphic pictorial warnings, and 'Smoking, not our future' campaign), with rangatahi Māori identified as a priority population. This period saw a rapid decrease in regular smoking among adolescents, including among rangatahi Māori (Figure 1). However, in the mid-2000s there was a move away from explicit references to Te Tiriti o Waitangi in government policies.

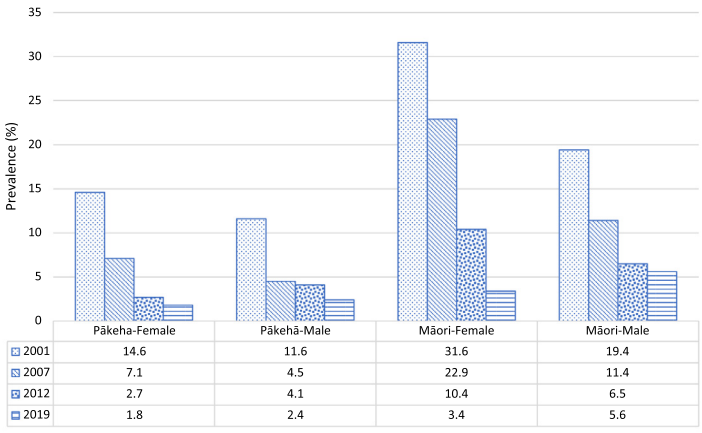
During 2008–2017 the Māori Party entered government in coalition with the centre-right National Party and staked political capital on making tobacco control-related gains. The Government's adoption of the Smokefree 2025 endgame goal in 2011 (defined as minimal tobacco availability and smoking prevalence in all demographic groups) followed a Māori Affairs Select Committee inquiry[23] the previous year and was a major achievement. However, it coincided with sizable disinvestment in tobacco control action, and few of the Committee's recommendations were implemented.[24] A 2015 'realignment' of the tobacco control sector greatly reduced advocacy, resources and coordination of the sector whist boosting cessation services. Some policy gains were achieved including annual 10% excise tax increases for tobacco and a point-of-sale display ban, which may have helped put tobacco out of sight and out of financial reach of youth. Adolescent smoking decline continued during this period, particularly among Māori girls (Figure 1).

Between 2007 and 2019 the gap between Māori and Pākehā adolescent smoking rates narrowed markedly in absolute terms. The success in reducing rangatahi Māori smoking is tempered by the fact that, in relative terms, rangatahi Māori smoking prevalence remains significantly higher than that of Pākehā (Table 4). Although equity has not yet been achieved in this example, the future is promising. Aotearoa's world leading Smokefree 2025 Action Plan, published in late 2021, fulfils the vision set out in the 2010 Māori Affairs Select Committee report: that "... innovations in tobacco control should place more financial, ethical, and legal pressure on the tobacco industry, rather than on smokers." [23] (p. 14) The Action Plan aims to eliminate inequities in smoking rates and

	Year			
Indicator	2001 RR[b] [95% CI[c]]	2007 RR [95% CI]	2012 RR [95% CI]	2019 RR [95% CI]
Good or excellent general health	0.97 [0.96–0.99]	0.95 [0.93–0.97]	0.96 [0.94–0.98]	0.97 [0.95–0.99]
Good emotional wellbeing (WHO-5)[d]		0.98 [0.95–1.01]	0.99 [0.95–1.02]	0.97 [0.92–1.02]
Significant depressive symptoms (RADS-SF)[e]	1.47 [1.27–1.70]	1.09 [0.95–1.26]	1.11 [0.92–1.35]	1.42 [1.27–1.59]
Always use contraception	0.73 [0.65–0.81]	0.74 [0.67–0.83]	0.69 [0.61–0.79]	0.84 [0.74–0.96]
Smoked cigarettes at least monthly	1.78 [1.58–2.01]	2.53 [2.12–3.02]	2.10 [1.71–2.59]	1.55 [1.25–1.93]
Binge drank at least one in the last month	1.21 [1.14–1.30]	1.41 [1.31–1.52]	1.30 [1.18–1.42]	1.17 [1.00–1.37]
Vigorous physical activity 7 or more times in the last week	1.18 [1.07–1.31]	1.03 [0.89–1.20]	1.13 [1.02–1.26]	1.37 [1.20–1.57]
Passenger in a car driven by a risky driver in the last month	1.12 [1.04–1.21]	1.35 [1.23–1.49]	1.34 [1.21–1.48]	1.27 [1.08–1.49]
Foregone healthcare in the last 12 months[f]		1.66 [1.48–1.85]	1.41 [1.25–1.59]	1.63 [1.45–1.84]
Accessed healthcare in the last 12 months[f]		0.96 [0.94–0.98]	0.95 [0.92–0.98]	0.91 [0.89–0.94]
Feel at least one parent cares for them lots	0.95 [0.93–0.97]	0.95 [0.93–0.97]	0.98 [0.96–0.99]	0.94 [0.92–0.97]
Family usually wants to know who you are with and where you are	0.89 [0.87–0.92]	0.94 [0.92–0.96]	0.98 [0.96–1.00]	0.96 [0.93–0.98]
Feel part of school	1.00 [0.97–1.02]	1.02 [1.00–1.04]	1.00 [0.97–1.02]	0.98 [0.95–1.01]
Bullied at school weekly or more often	0.81 [0.66–1.00]	0.69 [0.57–0.84]	0.71 [0.60–0.86]	0.89 [0.64–1.25]
Experience any type of racism – Yes[g]			2.48 [2.23–2.76]	2.27 [2.08–2.47]
Experience any type of racism – Unsure[g]			1.84 [1.62–2.08]	1.57 [1.40–1.76]
Always feel safe in neighbourhood	1.13 [1.06–1.21]	1.13 [1.05–1.21]	0.96 [0.92–1.01]	0.91 [0.86–0.97]

***Table 4*: Relative risks for Māori compared to Pākehā, by year.**

[a] Pākehā are the reference group.
[b] RR = relative risk.
[c] CI = confidence interval.
[d] Good emotional wellbeing is defined as scoring at least 13 on the WHO-5 Wellbeing Index. These questions were not asked in 2001.
[e] Depressive symptoms at least 28 on the Reynolds Adolescent Depression Scale – Short Form.
[f] Questions about foregoing and accessing healthcare were not asked in 2001.
[g] Questions about experience of racism was not asked in 2001 and only some questions were asked in 2007, hence data in only available for 2012 and 2019.



	Pākeha-Female	Pākehā-Male	Māori-Female	Māori-Male
2001	14.6	11.6	31.6	19.4
2007	7.1	4.5	22.9	11.4
2012	2.7	4.1	10.4	6.5
2019	1.8	2.4	3.4	5.6

Tobacco control timeline

1984: NZ's comprehensive tobacco control programme begins with public education, taxation, quit support, and on-pack health warnings.

1990 - 1995: Smokefree Environments Act is implemented including tobacco advertising ban, tobacco sponsorship phaseout, indoor smoking ban in cafes, public transport & most workplaces

1993 -1995: Ministry of Health contracts Māori organisation Te Hotu Manawa Māori to coordinate and strengthen tobacco control among Māori.

1994: Auahi Kore ('Smokefree') programme is launched by the Health Sponsorship Council and Te Hotu Manawa Māori

1996-1998: 'Why start?' mass media campaign targeting adolescents

1997: Minimum age of purchase raised from 16 to 18 years

1998: Apārangi Tautoko Auahi Kore (ATAK, later renamed Te Reo Marama) Māori Smokefree Coalition is established, to co-ordinate Māori-led tobacco control advocacy

2000 - 2002: 'It's about whānau' – Indigenous smoking cessation mass media campaign

2004: Smokefree bars and schools are introduced, accompanied by a mass media campaign about second hand smoke

2007: 'Smoking, not our future' national campaign features youth role models including Māori musicians, sports stars

2008: Graphic pictorial warnings introduced

2010-2020: Annual 10% increase in tobacco excise tax (above inflation)

2010: Māori Affairs Select Committee inquiry into the tobacco industry in Aotearoa and the consequences of tobacco use for Māori.

2011: Government adopts Smokefree 2025 goal

2012: Point of sale display ban. Tobacco must be out of sight in shops

2014: 'Stop before you start' mass media campaign launched, targeting youth

2018: Plain packaging introduced

2021: Smokefree cars implemented, banning smoking in vehicles where children are present

2021: Smokefree Aotearoa 2025 Action Plan published in December

Figure 1. Tobacco control timeline and prevalence of cigarette smoking (weekly or more often) in adolescents (13–18 years), Aotearoa New Zealand, 2001–2019.

smoking-related illnesses and the first of the six action areas is to 'ensure Māori leadership and decision making at all levels.'

Case example 2: healthcare access

In 2019, compared to Pākehā, a lower proportion of rangatahi Māori reported accessing healthcare, and a higher proportion reported forgone healthcare (they were unable to get the healthcare they required) (Figure 2). From 2012, healthcare access declined among rangatahi Māori, with steeper declines among young Māori females than other groups. Over the same period, the proportions of forgone healthcare for rangatahi Māori increased, particularly among Māori males,

Table 5: Critical Te Tiriti Analysis for Tobacco control

Successful tobacco control has relied on the synergistic effects of a comprehensive range of policies and programmes at many levels over decades. Therefore, focusing on a small number of individual policies/programmes is not appropriate and instead we have applied CTA to tobacco control as a whole, looking at different eras.

1. **Pre-1993.** Universalist era, no acknowledgement of Te Tiriti. No mention of 'Māori', 'equity' or 'Treaty' in ground-breaking 1990 Smokefree Environments Act. No major Māori-specific tobacco control action.
2. **1993-2008.** Publicly-funded Māori-led action begins. Major youth-relevant policy gains (e.g. raising age of purchase to 18 years, Smokefree schools) and influential campaigns ('Why start?', 'Smoking, not our future') with Māori input. Rangatahi Māori identified as a priority population.
3. **2008-2017.** Māori party/National party coalition government era.
4. **2017-2022.** Centre-left Labour government era. Launch of Smokefree 2025 Action Plan in 2021 again put Aotearoa at the forefront of Tobacco Control globally, this time with recognition of the need for Māori leadership.

Indicators	Poor	Uncertain	Fair	Good	Excellent
Māori lead in policy development	1			2,3,4	
Equitable Māori participation/leadership	1, 3			2,4	
Evidence of inclusion of Māori epistemologies, approaches and authority	1	3	2	4	
Māori exercising their citizenship		1,3	4	2	
Acknowledgment of wairuatanga/ spiritual wellbeing	1	2,3,4			

***Table 5*: Critical Te Tiriti Analysis (CTA) determination against rangatahi Māori tobacco control in various eras.**

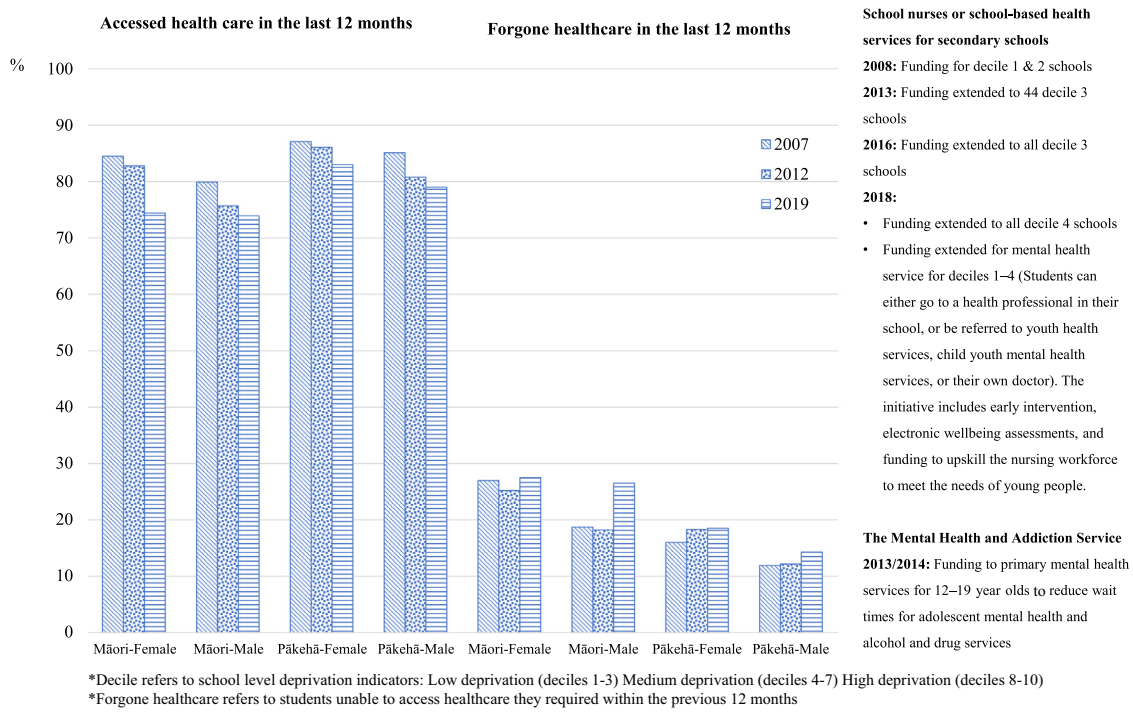


Figure 2. Youth healthcare delivery timeline and prevalence of healthcare access and forgone healthcare in adolescents (13–18 years), Aotearoa New Zealand, 2007–2019.

removing the previous gender benefits reported in 2007 and 2012. CTA findings for healthcare access policies are summarised in Table 6.

In contrast to tobacco control initiatives, which progressively benefited from Māori leadership and Māori-specific strategies, healthcare access interventions have not seen the same levels of devolution, opportunities for leadership, and associated accountability, and resourcing. For instance, while a range of whole-Māori population health improvements and access strategies were developed, rangatahi Māori were only identified as a priority in some of these documents (i.e., He Korowai Oranga 2002)[25] and only two funded youth-specific interventions (i.e., smoking cessation and improved nutrition and physical exercise) are identifiable.[26] There is a clear dearth of rangatahi-specific healthcare access interventions and policy in the general Māori health response.

There is a corresponding lack of explicit focus on rangatahi Māori as a priority population for healthcare access among whole-youth population interventions. For instance, when funding for school-based health services for lower and mid-decile schools was introduced, at no stage was specific funding for rangatahi Māori tagged in these investments. Although rangatahi Māori were named as a priority population in the service specifications for school-based health services,[27] this was not reflected in specific rangatahi policy, actions, or monitoring.

We were struck by the profound lack of rangatahi Māori-specific policy, and subsequent national initiatives, that could be identified over this period, despite the known inequities. A universalist approach to provide services for all young people experiencing deprivation, with the proxy expectation that this would improve rangatahi Māori healthcare access, has not been successful. This lack of inclusion and prioritisation of needs is reflected in the framework for continuous quality improvement for school-based health services.[28] The framework was produced from funding specifically designed to address the youth mental health crisis at the time, which again noted health inequities for rangatahi Māori. However, the framework, while naming "accessibility" as the second of seven principles for quality school-based health services, only referenced the English version of Te Tiriti o Waitangi as the fifth principle for improvement, despite Te Tiriti serving as a key driver for Māori equity, continuing the pattern of naming rangatahi Māori as a priority, but failing to prioritise them in response.

Discussion

In this cross-sectional, representative series of surveys over two decades in NZ, we see patterns of persistent

Table 6: Critical Te Tiriti Analysis - Healthcare access

Indicators	Poor	Uncertain	Fair	Good	Excellent
Māori lead in policy development	1,2,3				
Equitable Māori participation/leadership	1,2	3			
Evidence of inclusion of Māori epistemologies, approaches and authority	1,2,		3		
Māori exercising their citizenship			1,3		
Acknowledgment of wairuatanga/ spiritual wellbeing	1,2		3		

***Table 6*: Critical Te Tiriti Analysis (CTA) determination against strategies for improving rangatahi Māori healthcare access.**
Examining funded activities as the *strategy* (given that there is not a named strategy for rangatahi youth health - rather general Māori health strategies with passing references to rangatahi as a priority or youth/mental health strategies with reference to rangatahi) then the initiatives we are focussing on in this article are:
Initiative 1: 2008-2018 School nurses or school-based health services for secondary schools extended from deciles 1 & 2 to all decile 4 schools.
Initiative 2: Primary mental health services funding increased to reduce wait times for 12–19-year-olds.
Initiative 3: Youth Health Care in Secondary Schools: A framework for continuous quality improvement produced.

Initiative 1 was ranked poor, as policy for these three initiatives were driven out of the New Zealand Health Strategy (2000) and the Primary Health Care Strategy (2001) (Denny et al, 2014). Previous CTA analysis (Came, O'Sullivan, & McCreanor, 2020) of the Primary Health Care Strategy (2001) rated it as poor for indicators 1, 2, 3 and 5. This supported by Figure 2 and Tables 3 & 4 that demonstrate worsening access to health services for rangatahi Māori. The Youth Mental Health Package (YMHP) (2008) which extended SBHS to more schools and also funded *initiatives 2 and 3* was also rated as poor for indicator 1. While stating that "Maori and Pacific young people have comparatively high rates of mental illness and services are not always working well for these groups" (http://www.beehive.govt.nz/sites/default/files/Youth_Mental_Health_project-Family_and_Community.pdf), there is no mention of Te Tiriti, or even the English version of the Treaty, in the launch materials for the YMHP (https://www.beehive.govt.nz/release/pm-unveils-youth-mental-health-package). The YMHP was driven from the office of the Prime Minister John Key, and there was no evidence that the YMHP involved equitable Māori participation and leadership, nor inclusion of Māori epistemologies, authority, or spiritual wellbeing.
In relation to *initiative 3*, the membership of the consultative committee for the Framework is listed, but Māori involvement is not made visible, suggesting that equitable Māori participation and leadership were not prioritised. *Initiative 3* scored higher on indicators 3 and 5 due to a 2-page section in the 29-page document that addressed the English version of the Treaty, and bracketed Te Tiriti, and included exhortations to engage with Māori epistemologies, approaches, and authority, including spiritual practices. Despite these inclusions, initiative 3's effectiveness was rated as Fair as despite the rhetoric, it was only a 'voluntary' Framework, constructed as a "useful tool" (p.2) for self-evaluation, and was not sufficient to provide the needed resourcing or accountability to address these indicators.

health inequity for rangatahi Māori compared to Pākehā. Despite the clear needs of rangatahi Māori, efforts to improve healthcare access have been unsuccessful. CTA[18] found evidence that policies and strategies to improve healthcare access had failed to account for Te Tiriti o Waitangi, and instead focused on universalist strategies that ignored the specific needs and preferences of rangatahi Māori. Conversely, tobacco use among rangatahi Māori has substantially reduced, with inequity narrowing. When exploring the characteristics of more effective policy strategies, in this case tobacco control, we found comprehensive and incremental strategies, Māori leadership, rangatahi-Māori-specific policies, campaigns utilising mātauranga Māori (Indigenous knowledge systems) and preferences, self-determined solutions, and the political will to support these actions — which were associated with a narrowing of inequity. Sustained policies over time are required to reduce inequity, for example tobacco control strategies span multiple decades. Adding to this complexity, the time lag between policy implementation and improved outcomes, can be obscured by political positioning and agendas of the day. These findings have important implications for Indigenous service delivery, public health programmes, and policy.

The current Western health system is failing rangatahi Māori. The persistent pattern of inequity is entrenched, despite a range of efforts. Of considerable concern, is the rapid deterioration of mental health among rangatahi Māori between 2012 and 2019.[29] These factors, in tandem with increasing racism and inequitable healthcare access signals a health system ill-equipped to respond. Compartmentalised and competitive healthcare funding and contracting does not serve rangatahi Māori well, failing to recognise that wellbeing is multifaceted, requiring cooperation and connection. A common policy response to inequity is targeting poor communities, with the prevailing assumptions that funding for these communities will, by proxy, improve outcomes for rangatahi Māori. This study found a focus on poverty alone was not effective in reducing inequity for Māori. Instead, healthcare access inequalities for rangatahi Māori, along with other inequalities we mention, have roots deeper than financial deprivation.[30,31] The intergenerational effects of colonisation have eroded Māori agency and connection to cultural ways of knowing and being, supplanting a rich cultural landscape with racist narratives of Māori inferiority.[4,6] Monitoring of rangatahi wellbeing and holding the Crown to account over the health system's performance is vital to help to determine priorities and signal areas of further investment and resource.

There is hope, as there are some proposed transformative health reforms, strategies and policies being implemented through the Pae Ora Healthy Futures Bill.[12] There is also growing political recognition and

evidence that improving Indigenous wellbeing requires culturally specific strategies. The findings from this paper support Indigenisation of the health system, like the new Māori Health Authority.[32] Health reform is an excellent opportunity to progress equity for rangatahi Māori, however, these policies are also likely to be the source of significant political scrutiny. Western mainstream health services are resistant to change, and policies that seek to increase Indigenous decision-making and move power away from Western preferences are intensely debated in the media, despite evidence of their effectiveness.[33] There is significant risk that Eurocentrism will be maintained if transformative and brave leadership is not leveraged to address inequities for Indigenous peoples in NZ. Future research should focus on rangatahi mental health and identifying effective policy strategies and antiracism praxis as areas of priority.

Limitations

The Youth2000 survey series includes the largest sample of rangatahi Māori self-reported health and wellbeing data in NZ. However, our results are based on cross-sectional surveys, so causality cannot be assumed. Surveys included students who attended school and consented to participate, hence likely under-report the experiences of those absent or unwilling to participate. Survey response rates have decreased over the various waves of the surveys, increasing the possibility of selection bias in more recent survey waves. The 2019 survey was regional, rather than national. National estimates were calculated for all survey waves to allow comparison over time, but comparisons between 2019 and earlier waves could be biased by regional differences over and above demographic differences.[14] Although survey questions were available in Māori, key questions largely focused on personal health and wellbeing issues considered important in a Eurocentric context. Critiques of mainstream policies and strategies are not a reflection of ongoing efforts by youth organisations, and Māori providers and organisations, who continue to innovate and push the boundaries on culturally safe services for rangatahi Māori. Finally, these data were collected prior to COVID-19, hence these findings are likely to overestimate current rangatahi Māori wellbeing.

Conclusion

Despite more than two decades of policies purporting to prioritise Indigenous Māori wellbeing and equity, rangatahi Māori continue to carry the disproportionate burden of poor health outcomes, with limited evidence of narrowing inequities. Dismantling the structural racism that maintains the status quo in Eurocentric health services, systems and policies must be an urgent priority to improve health equity for rangatahi Māori.

Contributors

TC, JB, TF, JF, BD, JLG, RPJ and SC designed, planned and led the writing of the paper. TC designed the conceptual framework for the paper. BD, TC, SL and CRR contributed to the data extraction and developed the analysis plan. BD conducted the data analyses with oversight by TC and SC who verified the data. AS led the literature review for the evidence before the study with support from TC, KS, LG. JLG, RPJ, LB. TC, TF, JB, RPJ, SL, AS, SC, KS, ML, LB, LG, ML, JLG were involved in planning of the Youth2000 surveys, secured funding, planned and conducted the surveys. TC, JB, JLG, TF, ML drafted the introduction. TC, AS, JB, ML, LB drafted the research in context section. Methods were drafted by TC, BD, JB, SL, CRR, TF, KS, JB, RPJ and JF. Quantitative results were described by JB, TC, JF, TF, SC, BD, LB and SL. CTA analysis was completed by JF, AW, JB, RPJ and TC. The discussion was drafted by TC, JB, JF, TF, SC, JLG, RPJ, KS, SL, ML, LB, LG and AW. References were managed by KS. TC, JB, SC, TF, BD, JF, AW and ML edited the final versions, final figures, tables and supplementary information. All authors checked the final versions and could access the data reported.

Data sharing statement

Individual participant data collected for the study will not be made available as per the Adolescent Health Research Group (NZ) data access policy (https://www.fmhs.auckland.ac.nz/en/faculty/adolescent-health-research-group/collaborations-and-access-to-datasets.html). The data dictionary defining each field in the set is available (https://www.youth19.ac.nz/projects).

Declaration of interests

Cure Kids funds of the lead author's (TC's) Professorial Chair. *Cure Kids* had no role in data collection, analysis, interpretation, writing of the manuscript nor the decision to submit. SC receives board fees from Interim Māori Health Authority and WellSouth Primary Health Network.

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Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.lanwpc.2022.100554.

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