

# Racism and health in Aotearoa New Zealand: a systematic review of quantitative studies

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## ABSTRACT

**BACKGROUND:** Racism is an underlying cause of ethnic health inequities both in Aotearoa New Zealand and internationally. It is timely to synthesise racism and health research within New Zealand particularly given the current policy environment and shift towards addressing the health effects of racism.

**AIM:** To review quantitative research examining self-reported experiences of racial discrimination and associations with measures of health (health conditions, health risk, health status and healthcare) in New Zealand.

**METHODS:** MEDLINE, PsycINFO, Web of Science and CINAHL databases were searched for studies reporting on associations between experiences of racism and health.

**RESULTS:** The systematic review identified 24 quantitative studies reporting associations between self-reported racial discrimination across a wide range of health measures including mental health, physical health, self-rated health, wellbeing, individual level health risks, and healthcare indicators.

**CONCLUSIONS:** Quantitative racism and health research in New Zealand consistently finds that self-reported racial discrimination is associated with a range of poorer health outcomes and reduced access to and quality of healthcare. This review confirms that experience of racial discrimination is an important determinant of health in New Zealand, as it is internationally. There is a pressing need for effectively designed interventions to address the impacts of racism on health.

Racism has been firmly established as an important determinant of health and an underlying cause of ethnic health inequities in Aotearoa New Zealand and internationally.<sup>1-3</sup> Racism is an organised system of oppression involving the social construction and valuing of racial/ethnic groups based on ideologies of superiority (and inferiority), which serves to privilege some groups over others.<sup>4-6</sup> In its institutional and cultural forms, racism has been, and continues to be, a major contributor to the creation and sustaining of racial/ethnic inequities across a range of societal outcomes combining to create inequities in health.<sup>1,2</sup>

Racism operates at multiple levels with various pathways to health.<sup>7</sup> These levels have been conceptualised by some scholars

as internalised (or intrapersonal), interpersonal (personally-mediated) and systemic (structural or institutional).<sup>2,6,7</sup> Internalised racism involves attitudes, beliefs or ideologies often founded on understandings of supposedly innate superiority and inferiority that may be held by members of dominant social groups and/or oppressed ones.<sup>2</sup> Interpersonal racism refers to racism between people, with varying degrees of frequency and intensity, including manifestations from racially motivated assault to verbal abuse, ostracism and exclusion.<sup>2</sup> Systemic, structural or institutional racism involves the production, control and access to material, informational and symbolic resources within societal institutions, laws, policies and practices.<sup>2</sup>

It has been posited that structural racism is the most powerful way that racism impacts on population health.<sup>7</sup> This view acknowledges how deeply embedded social structures in society are and how they ultimately determine the inequities arising from unequal access to the wide range of factors that drive health.<sup>5</sup> Interpersonal racism reflects the direct experience of individuals within the organised system of racism that operates within a colonised society. Interpersonal racism can impact negatively on health in multiple ways such as a chronic stressor, and experience of unfair treatment.<sup>5,6,8</sup>

In New Zealand there is a long standing body of qualitative research<sup>8-11</sup> as well as a large and growing research base examining peoples' experiences of racism and potential impacts on health by ethnicity, particularly in the last decade. The majority of this evidence has centred around measures of self-reported experiences of racial/ethnic discrimination. Research shows a consistent link between experience of racism and a range of negative health measures (such as mental and physical health, and individual level factors such as smoking) that may impact on racial/ethnic health inequities<sup>1,12</sup> and negatively impact on access to healthcare and experiences of healthcare interactions.<sup>13</sup> Unsurprisingly, research consistently shows that non-European ethnic groups, including Māori, Asian and Pacific, have higher prevalence of reporting experience of racism than European ethnic groups.<sup>1,12</sup> A strength of the New Zealand-based studies has been the focus on inequity analyses, which centre Māori and often conceptualise racism as a determinant of health within a context of the enduring and harmful impacts of colonisation.<sup>14</sup>

International systematic reviews show strong and consistent associations when examining the links between racial/ethnic discrimination and health, particularly for mental health indicators.<sup>3,5,15</sup> Systematic reviews have examined experience of racism and dimensions of the health and disability system such as service utilisation<sup>16</sup> and specific population groups such as children and young people.<sup>17</sup> However, these reviews are largely dominated by studies undertaken in the US.

Recently, the New Zealand policy environment has begun to acknowledge the impacts of racism and relationships to health, particularly the role of institutional racism.<sup>18-22</sup> Given the current environment and the opportunity to inform emerging policy and intervention development, it is timely to collate and synthesise the available body of quantitative racism and health research within New Zealand.

This paper seeks to investigate and report on the quantitative association between self-reported experience of racial/ethnic discrimination and health within a New Zealand setting. It draws upon systematic review methods used in previous reviews set within an international scope<sup>3,16</sup> in order to provide an overview for New Zealand on the range of health indicators that racism has been linked to and the consistency and strength of these associations.

## Methods

This systematic literature review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guideline. The Medline, Web of Science, CINAHL and PsycINFO databases were searched systematically to identify articles published before May 2019 (no lower date limit was specified). Search terms were based on terms from previous international systematic reviews and the thesaurus for each database, utilising MeSH terms where possible. A copy of the Medline search strategy is provided in Appendix Table 1. An additional step to the PRISMA process was the addition of three articles sourced via database alerts (between May and October 2019) and assessed as meeting the pre-set criteria and, therefore, included in the final dataset.

### Study selection

Articles were included if they were a) undertaken in New Zealand, b) reported empirical, quantitative study findings **and** c) reported an association between self-reported experience of racial/ethnic discrimination and one or more health-related measures. Self-reported experience of racial/ethnic discrimination included experience of racism on the basis of race, ethnicity and/or skin colour. Studies were excluded if

**Table 1:** Summary of characteristics of studies of self-reported experiences of racial/ethnic discrimination and health in New Zealand.

	Number of studies	% of total studies n=24
<b>Publication year</b>		
2005–2007	1	4.2%
2008–2010	0	
2011–2013	5	20.8%
2014–2016	6	25.0%
2017–2019	12	50.0%
<b>Study location</b>		
National	19	79.2%
Regional	4	16.7%
Local (eg, study clinic)	1	4.2%
<b>Study type*</b>		
Cross-sectional	21	87.5%
Longitudinal	5	20.8%
<b>Sample size</b>		
<100	1	4.2%
100–199	0	
200–499	1	4.2%
500–999	2	8.3%
1,000–4,999	5	20.8%
5,000–9,999	7	29.1%
>10,000	8	33.3%
<b>Study populations</b>		
<b>Ethnicity</b>		
Māori	22	91.7%
Pacific	17	70.8%
Asian	15	62.5%
NZ European	8	33.3%
NZ European/Other	9	37.5%
Middle Eastern, Latin American and African	1	4.2%
Other	1	4.2%
<b>Age of study populations</b>		
Infants (first 12 months)	3	12.5%
Children (0–14 years)	2	8.3%
Adolescents (13–18 years)	5	20.8%
Adults (15 years or over)	18	75.0%
Aged 80+	1	4.2%
<b>Gender of participants</b>		
Female and male	21	87.5%
Female only	3	12.5%
Male only	0	
<b>Specific population groups</b>		
Caregivers	2	8.3%
Secondary school students	5	20.8%
Immigrant	1	4.2%

**Table 1:** Summary of characteristics of studies of self-reported experiences of racial/ethnic discrimination and health in New Zealand (continued).

<b>Racism exposure measurement</b>		
<b>Exposure scales</b>		
NZ Health Survey racism module questions (five items)	11	45.8%
Growing up in New Zealand study questions	3	12.5%
General social survey two-step questions	2	8.3%
Youth survey (bullying, unfair treatment measure)	5	20.8%
Perceived discrimination single item (NZAVS)	4	16.7%
Everyday discrimination scale	1	4.2%
<b>Timeframe of exposure</b>		
Last 12 months	2	8.3%
Ever	7	29.2%
Mixed (last 12 months and ever)	6	25.0%
Not reported/specified	9	37.5%
<b>Single-item or multi-item measures</b>		
Single-item measure	6	25.0%
Multi-item measure	18	75.0%
<b>Exposure setting</b>		
Healthcare setting only	2	8.3%
General and healthcare	17	70.8%
General only	5	20.8%
<b>Method of administration</b>		
Self-administered	9	37.5%
Interviewer-administered	15	62.5%
<b>Missing racism data identified/discussed</b>		
Yes	4	16.7%
No	20	83.3%

\*Thayer<sup>23</sup> and Stronge<sup>24</sup> incorporated both cross-sectional and longitudinal study elements and are included in both categories.

they were not published quantitative studies and/or did not report on a direct association between experience of racial/ethnic discrimination and a health outcome.

In total, 436 articles were initially identified across the four databases, with a number of duplicates (n=107). A further article was located through other sources as it was known to the investigators due to their involvement in the study. Three articles were sourced via database alerts (from the same search terms) in the four months following the initial database search. After removing duplicates and reading through titles and abstracts, 59 articles were identified for retrieval. Retrieved articles were reviewed via full text screening to ascertain relevance and fit with inclusion criteria, and a further 35 articles excluded. One investigator initially screened all the abstracts retrieved from database searching where exclusions were

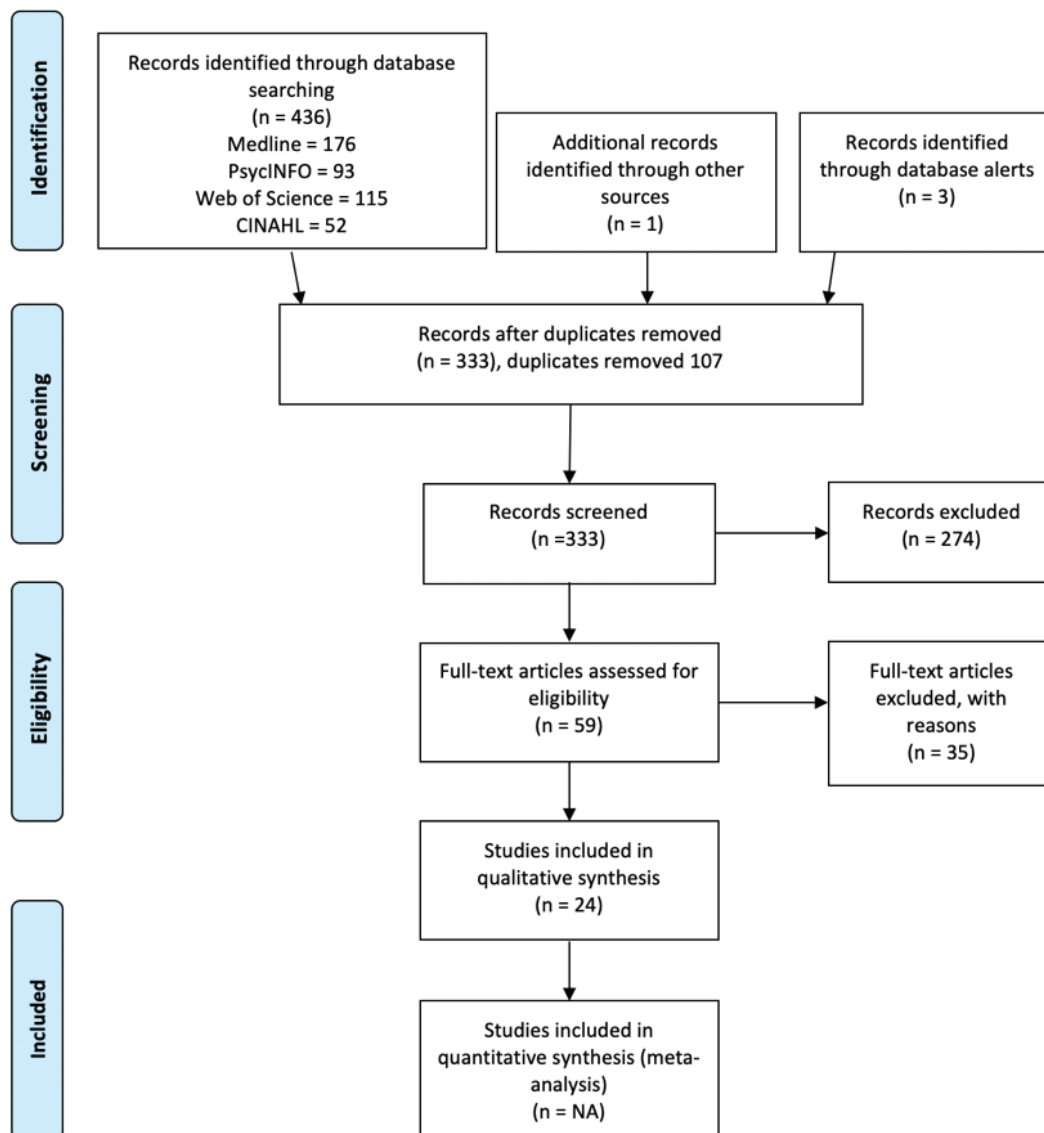
clear. Article abstracts that were unclear were then reviewed with two other investigators and consensus obtained on exclusions and inclusions. Full text screening review included discussion and decision making with two other investigators regarding the inclusion of particular studies. These studies were independently screened by the two other investigators and a consensus agreement made on the final dataset.

### Data extraction and appraisal

The final dataset was made up of 24 studies (Figure 1).

Each paper in the final dataset was reviewed and associations between racism and health assessed via the strength of evidence presented in analysis. Relevant information was entered into Microsoft Excel™ based on pre-determined categories (eg, sample size, study approach) by one investigator. A meta-analysis was not undertaken for this systematic review due to the

Figure 1: PRISMA guideline flow diagram.



broad range of outcome measures across the studies. Of note, however, is that some individual studies used meta-analytic methods to pool data across multiple surveys of the same survey to increase precision of estimates.<sup>1,12</sup>

Associations between self-reported experience of racial/ethnic discrimination and health were grouped into broad health indicator categories (eg, mental health, physical health) based on the studies in this review and informed by previous systematic reviews.<sup>3,16</sup> Study characteristics are presented in the findings, using a qualitative approach to synthesis.

## Results

### Characteristics of included studies

Table 1 displays the characteristics of the 24 studies included. The volume of published studies has increased steadily since 2010, with most studies being published from 2014 (n=18). Over half of the studies had sample sizes of over 5,000 people (15, 63% of studies). The majority of studies were conducted at a national level (19, 79%) and cross-sectional in study design (21, 88%). Three studies were longitudinal in design using the Growing up in New Zealand (GUINZ) study data.<sup>25-27</sup>

Two studies<sup>23,24</sup> utilised both longitudinal and cross-sectional analyses and therefore feature in both categories.

Studies undertaken with adult populations generally included all genders. A few studies focused on maternal health.<sup>23,27,28</sup> Some focused on a specific population group, eg, infants,<sup>28</sup> caregiver's experiences of racism linked with children's health,<sup>29,30</sup> adults aged 80 years and over,<sup>31</sup> and immigrant status among secondary school students.<sup>32</sup>

### Measurement of racial/ethnic discrimination

An analysis of the exposure scales used in the studies showed that 11 studies (46% of all studies) used the New Zealand Health Survey (NZHS) racism questions. The NZHS questions, which feature multiple times in the NZHS since 2002/03, have provided the ability to explore experience of racism (using five items) and health for various health conditions, outcomes and settings, including two studies exploring the association of racism and health over time.<sup>1,12</sup> The questions informed development of racism questions in other studies such as GUINZ and The National Youth Health and Well-being Survey (Youth 2000).

The majority of studies presented experience of racism data that was self-reported and represented a direct experience for participants. The exception to this was the investigation into vicarious racism experience for children, where caregivers' experience of racism and resulting impact on their children's health was examined.<sup>29,30</sup>

The exposure setting for the majority of the studies were 'both general and healthcare related' reflecting the multi-item nature of many of the measures.

The timeframe within which exposure to racism was examined varied across studies. Excluding those studies (n=9) which did not report or specify a timeframe, most studies used an 'ever' or 'mixed' (last 12 months and ever) timeframe (n=13). Two studies used a timeframe of last 12 months.<sup>1,33</sup>

Most studies used a multi-item measure to assess experience of racial/ethnic discrimination (eg, examination across a number of items and settings). Six studies used a single-item measure to assess racial/ethnic discrimination either by examining one dimension of experience of racism,

eg, unfair treatment by a health professional,<sup>26,34</sup> or a broader question exploring participants' response to a single question of feeling discriminated against because of ethnicity.<sup>24,35,36</sup>

Over half (n=15, 63%) of the studies used interviewer-administered data sources, largely reflecting the sizeable body of work that utilises the NZHS racism question set, as well as GUINZ studies,<sup>25,27,28</sup> Life and living in advanced age: a cohort study (LiLACS) data<sup>31</sup> and a small-scale study conducted in a health clinic.<sup>23</sup> Self-administered data was sourced via surveys that were either postal (eg, New Zealand Attitudes and Values Study, NZAVS) or via electronic data collections (eg, Youth 2000).

### Categorisation of racism variables

Many studies used data from multi-item experience of racism questions and created dichotomous or composite variables for analysis.<sup>31,37,38</sup> A number of studies explored experience of racial/ethnic discrimination from multiple items, examining a dose-response relationship with health measures.<sup>25,29,30,39,40</sup>

### Ethnicity

Ethnicity is a key variable in understanding the risk of experiencing racial/ethnic discrimination. Most studies provided detail on ethnicity data and are categorised using the Statistics New Zealand Census question and/or classification that allows for self-identification of ethnicity. Six studies focused on the Māori population only.<sup>24,31,35,36,38,41</sup> Two studies presented analysis focusing specifically on Pacific.<sup>34,42</sup> Remaining studies included analysis across the major ethnicity population groupings in New Zealand (eg, Māori, Pacific, Asian, New Zealand European) with nearly all studies including Māori as a study population (22, 92%). Of note, with the exception of Māori, ethnic groupings were an aggregate of multiple ethnic groups. When measured within the body of racism and health research in New Zealand the prevalence of experience of racism was consistently highest among Māori, Pacific and Asian populations.

### Missing racism data

A qualitative assessment of missing racism data was undertaken to obtain a sense of the quality of the major exposure



being tested. Only a few studies examined missing racism data in any detail. Harris<sup>12,43</sup> identified missing data numbers of 116 (0.93% of participants) in the 2002/03 NZHS, eight (0.06% of participants) in the 2006/07 NZHS and 165 (1.3% of participants) in the 2011/12 NZHS.

### Covariates

Many of the studies adjusted for age, gender and socioeconomic variables when examining associations between racism and health. Some of these studies explicitly considered socioeconomic position (SEP) as a marker of institutional racism given entrenched ethnic inequities by SEP in New Zealand.

### Associations between self-reported experience of racial/ethnic discrimination and health

Table 2 summarises the associations between self-reported experience of racial/ethnic discrimination and health measures reported in the studies.

Associations are grouped into broad health outcome categories (studies can feature multiple times).

### Mental health

An association between experience of racism and negative mental health was found across six studies that examined depression (including pre-natal/post-natal), stress, psychological distress and diagnosed mental health conditions.<sup>12,25,35,37,38,42</sup> Using longitudinal data, Bécaries<sup>25</sup> found strong associations between experiences of ethnically-motivated interpersonal attacks and unfair treatment on maternal mental health among Māori, Pacific and Asian women. Studies also found a negative association for lower scoring on SF12/36 mental health scales,<sup>1,12,33,39</sup> feelings of control<sup>35</sup> and previous suicide attempt.<sup>38</sup>

### Wellbeing/overall health

A number of studies explored experience of racial/ethnic discrimination and resulting impact on self-rated health—with associations with poorer health confirmed in all studies.<sup>1,12,23,33,35,37,39</sup> Experience of racism was associated with negative life satisfaction in five studies,<sup>1,24,33,35,42</sup> with one study using longitudinal data.<sup>24</sup> Other indicators of wellbeing that also showed an association between experience of racism and negative outcomes were overall wellbeing, quality

of life measures, happiness, self-esteem, subjective evaluation of health and body satisfaction.<sup>30,31,35,38,42,44</sup>

### Physical health

A few studies explored the association between racism and physical health measures. Harris<sup>12,39</sup> found a negative health association for CVD and SF36 physical health scale scoring. Hobbs,<sup>28</sup> using longitudinal data linked to national hospitalisations, found that maternal experience of healthcare-based racism was associated with increased infectious disease hospitalisations for Māori infants. In a study of caregiver experiences of racism and child health outcomes, no association was found between experience of vicarious racism and medicated asthma for children.<sup>30</sup>

### Health related behaviours

The association of experience of racism was less clear when examining health-related behaviours. Associations between experience of racism and factors linked to increased health risk were found in four studies examining cigarette smoking,<sup>12,32,37,39</sup> and four studies that analysed hazardous or binge drinking.<sup>12,32,37,41</sup> Muriwai,<sup>36</sup> in an examination of perceived appearance and smoking status, found an unexpected lack of association between perceived ethnic discrimination and smoking status among Māori. Ethnic discrimination was considered a covariate in this analysis and it is possible that the perceived appearance variable also partly captured experience of racism, potentially over-adjusting for racism. No relationship was demonstrated between experience of racism and hours of watching TV, exercise<sup>35</sup> and body size.<sup>12</sup>

### Healthcare

Five studies examined healthcare measures and relationships to experience of racial/ethnic discrimination.<sup>1,13,29,34,35</sup> Healthcare measures included unmet need, access to services, patient satisfaction and patient experience with healthcare services. In all but one study, experience of racism was associated with negative healthcare measures, however the association with lower cancer screening (breast and cervical) was only significant for Māori women.<sup>13</sup> No association was found between vicarious racism and children not having a usual healthcare provider.<sup>29</sup>

**Table 2:** Associations between experience of racial/ethnic discrimination and health.

Health indicators	Association with negative health	Association with positive health	No association	Studies
<b>Mental health</b>				
Pre-natal/post-natal depression	1			25
Depressive symptoms	2			37,38
Pre-natal perceived stress	1			25
Psychological distress	3			12,35,42
Diagnosed mental health condition	1			12
Suicide attempts	1			38
SF 12/36 mental health	4			1,12,33,39
Feelings of control over life	1			35
<b>Wellbeing/overall health</b>				
Self-rated health	7			1,12,23,33,35,37,39
Life satisfaction	5			1,24,33,25,42
Overall wellbeing	2			38,42
Quality of life	2			30,31
Happiness	1			44
Self esteem	2			35,42
Subjective evaluation of health	1			42
Body satisfaction	1			35
<b>Physical health</b>				
Childhood asthma (medicated)			1	30
Cardiovascular disease	2			12,39
SF36 physical health	2			12,39
Infectious disease hospitalisations (first year of life)	1			28
<b>Health related behaviours</b>				
Cigarette smoking	4		1	12,32,36,37,39
Marijuana use	1			32
Alcohol use (hazardous or binge)	4			12,32,37,41
Watching TV			1	35
Exercise			1	35
Body size (BMI, waist circumference)			1	12
<b>Healthcare</b>				
Patient experience	1			13
Unmet need	2			29,43
Satisfaction with health care service	2			29,43
Access to healthcare service	2		1	29,34,35
Cancer screening (breast and cervical)	1*		1	13
<b>Maternal health</b>				
Morning maternal cortisol levels	1		1	23
Evening maternal cortisol levels				23
Maternal diurnal cortisol decline	1		1	23
Infants higher cortisol reactivity at six weeks				23
Birth weight	1*	1#	1^	27
Gestation length	1*			27
<b>Other health indicators</b>				
Feeling safe in neighbourhood	1			37
Sleep disturbance/poorer sleep	2			35,40
Fatigue	1			35
Relationship dissatisfaction/conflict			1	35

\* association found for Māori women only.  
 # association found for Asian women only.  
 ^ association found for Pacific women only.



## Maternal health indicators

Thayer & Kuzawa,<sup>23</sup> using cross-sectional and longitudinal methods, focused on cortisol levels (as an indicator of stress in pregnancy and infants soon after birth) with a small sample of pregnant women (n=55) and found associations with higher maternal evening cortisol and higher cortisol reactivity for a sub-set of infants at six weeks of age (n=19). Experience of racism had no association with maternal levels of morning cortisol and diurnal cortisol. A study using GUINZ longitudinal data explored maternal experiences of ethnic discrimination and birth outcomes and found that for Māori women there was an association with lower birth weight.<sup>27</sup> For Pacific women, no association was found and for Asian women experience of racism was associated with higher birth weight (often categorised as a positive health). Discussing the unexpected finding, the authors noted that Asian women had the lowest birth weights out of all ethnic groups and postulated that it was possible that higher birth weight may actually represent a less healthy birth weight.<sup>27</sup>

## Other health indicators

Experience of racism was associated with negative health measures in two studies that examined racism and sleep disturbance<sup>40</sup> or poorer sleep.<sup>35</sup> Houkamau<sup>35</sup> also found that experience of racism was associated with fatigue, however experience of racial/ethnic discrimination had no association with relationship dissatisfaction and conflict. In a study of secondary school students, Crengle<sup>37</sup> found that experience of racism had a negative effect on feeling safe in your neighbourhood.

The majority of associations between experience of racism and health outcomes were based on self-reported outcome data. The exceptions to this were indicators reported in three studies including: Hobbs<sup>28</sup> who utilised data linkage from a longitudinal data set with a national database of hospitalisations; Thayer<sup>23</sup> who reported on measured cortisol levels in mothers and infants; and Harris<sup>12</sup> who used BMI and waist circumference measurements.

Overall, the patterning of associations shows a fairly consistent relationship between experience of racism and poorer health outcomes. This is particularly marked

for mental health and wellbeing measures and is consistent with international literature.<sup>15</sup> The majority of studies demonstrate the disproportionate exposure to experience of racism for the Māori population and other minoritised ethnic groups (namely, Pacific and Asian peoples). Some studies found experience of racism as a predictor for negative health outcomes for the Māori population only while an association was not found for other population groups.<sup>13,27</sup> Studies examined a broad range of health outcomes (41 indicators across 24 studies) with associations between racism and negative health measures demonstrated for 34 indicators.

## Discussion

This systematic review confirms that quantitative research on racism and health in New Zealand generally shows experience of racial/ethnic discrimination to be linked to poorer health outcomes. These findings are consistent with evidence internationally, which also demonstrate relationships between experience of racism and a range of health outcomes, with particularly strong and consistent associations for mental health.<sup>3,15</sup> In alignment with international studies,<sup>16</sup> New Zealand studies also demonstrated how experience of racial/ethnic discrimination was associated with more negative primary healthcare experiences, unmet need or lower healthcare utilisation, signifying the impact that experience of racism has in the context of health system design, functioning and quality of care. The studies included a range of population groups by age, ethnicity, gender and role (eg, caregivers). Of note, however, is the lack of quantitative analysis which further explores what is happening for social groups within the broader ethnic groupings (eg, disability and rainbow communities).

An advantage of this systematic review is that it is not limited or restricted to particular health conditions or outcomes and populations and can be regarded as a comprehensive overview of the available quantitative evidence. A further strength was that most studies provided a clear understanding and definition of their experience of racism measure as well as measurement of ethnicity, which is

important considering that studies demonstrate racial/ethnic discrimination is disproportionately experienced by non-European ethnic groups.

A major strength for New Zealand is that national surveys such as the NZHS and the GSS have included experience of racial/ethnic discrimination measures multiple times since 2002/03, acknowledging the significance of racism as a health determinant and social wellbeing indicator. The NZHS, a health survey which collects information to monitor population health and provide evidence for health policy<sup>45</sup> uses a one-step questionnaire on experience of racial/ethnic discrimination across five items—experience of ethnically-motivated physical and/or verbal attack, unfair treatment because of ethnicity in health, housing or in work. Experience of racism questions can be measured ‘in the last 12 months’ or ‘ever’ if more than 12 months ago. The GSS collects data on experience of racism via a two-step question, also allowing for the monitoring of other forms of discrimination. Other significant surveys in New Zealand that collect experience of racism data include the Youth 2000 survey series and the NZAVS. The longitudinal study GUiNZ is an important source of racism and health data in New Zealand and strengthens the research base with regards to longitudinal analyses.

Limitations to this systematic review is that only quantitative research evidence found in published peer reviewed journals have been included. Unpublished research is not included, which may lead to publication bias. There is also the possibility that despite conducting a systematic review process, not all relevant studies were identified. The studies included in this review are focused on individual experiences of racism and do not involve group experience of racism or explore institutional forms of racism.

There are a number of related New Zealand studies that did not meet the inclusion criteria. These include studies that explored experience of racial/ethnic discrimination and associations with deprivation on ethnic inequalities,<sup>46</sup> ethnic consciousness,<sup>47</sup> ethnic density,<sup>48</sup> perceived religious discrimination<sup>49</sup> and how others perceive your ethnicity (socially assigned ethnicity).<sup>50,51</sup> A developing body of work centres on racism

among the medical workforce, exploring ethnic bias among medical students.<sup>52,53</sup>

There is a significant body of qualitative health research that has also explored experiences of racial/ethnic discrimination in New Zealand.<sup>8–11</sup> Research focused on institutional racism and health is also emerging within New Zealand-based literature.<sup>54–56</sup> This work is reinforced by recent findings from the Waitangi Tribunal where the need to address institutional racism is clearly laid out.<sup>22</sup>

The majority of studies in New Zealand are cross-sectional in design with a need for further research to incorporate longitudinal design that could add considerably to the strength of evidence on racism and health. Longitudinal research can examine multiple dimensions of racism and mechanisms to understand where and how to intervene, as well as explore dimensions of disease and use life course analysis to assess the impact and exposure of racism across developmental stages and pathways to health and potentially assess key periods of increased risk.

There is also a need for further research that would explore the evidence around anti-racism strategies and interventions. Interventions to address the health impacts of racial/ethnic discrimination need to address racism at all levels. In New Zealand, while the monitoring of racism as a health determinant is included in national level surveys such as the NZHS (although always needing to be advocated for), and the evidence base is robust and growing, there is limited research in New Zealand on effective interventions and system change to address the negative impact of racism on health. There is a pressing need to research and implement effective health interventions which address and dismantle racism.<sup>2</sup>

The evidence is clear that experience of racism is a determinant of health that has a negative impact across a broad range of health outcomes in New Zealand. Additionally, Indigenous and minoritised ethnic groups are significantly more likely to experience racial/ethnic discrimination than the dominant New Zealand European group, and therefore, are disproportionately affected by the impacts of racial/ethnic discrimination on health outcomes. As such, there is a need to continue to understand and explore the relationship of experience of racism, particularly for those groups most

affected. Continued attention needs to focus on how the many manifestations of racism impact health with ongoing and expanded research using multiple methods and within the context and understanding of racism as

a system operating at multiple levels. Now is the time for action in identifying and implementing policy initiatives/interventions to address the irrefutable negative impact racism has on health.<sup>2</sup>

## Appendix

**Appendix Table 1:** Example Search Strategy Medline (adapted for other databases as required).

Search statement	Results
1	exp "health care (non mesh)"/ or "delivery of health care"/
2	exp "diseases (non mesh)"/
3	exp "psychiatry and psychology (non mesh)"/
4	(well-being or wellbeing).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
5	1 or 2 or 3 or 4
6	(discrim* or bias or prejud* or hostil* or harrass* or bully* or (unfair and treat*) or oppress* or racis*).ti,ab,kf.
7	(rac* or ethnic* or cultur* or religio* or migr* or immigra* or refugee*).ti,ab,kf.
8	6 and 7
9	racis*.ti,ab,kf.
10	exp racism/
11	9 or 10
12	8 or 11
13	("new zealand" or "NZ").ti,ab,kf.
14	5 and 12 and 13

**Competing interests:**

Ms Talamaivao reports grants from The Health Research Council of New Zealand during the conduct of the study.

**Acknowledgements:**

The research was conducted during tenure of a Foxley Fellowship from the Health Research Council of New Zealand. The research was supported (in part) by funding from the Health Research Council of New Zealand.

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