The responsiveness of surgical research to Māori in Aotearoa, New Zealand—a scoping review

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Summary

Background Māori, the Indigenous people of Aotearoa, New Zealand (NZ), experience significant inequities in access to surgery and postoperative outcomes. This scoping review aimed to present a synopsis of the extent and nature of research concerning Māori in surgery in NZ and evaluated the responsiveness of this evidence base to Māori using two Indigenous frameworks.

Methods Utilising a Kaupapa Māori methodological stance, a scoping review of all studies related to Māori and surgical care in NZ (2000–2024) was performed. The studies underwent thorough evaluation using the CONSIDER and MĀORI frameworks to assess responsiveness to Indigenous Māori.

Findings A total of 254 studies were included, most being quantitative (N = 230, 91%) and most categorised under General Surgery (N = 139, 55%). Māori responsiveness assessments of each study highlighted significant shortcomings, with 96% of studies (N = 243/254) rated as low quality as per the adapted CONSIDER framework and 68% (N = 172/254) rated as low quality in accordance with the MĀORI framework. More than half of all studies (55%) did not report Māori leadership, governance, and co-authorship. Studies that utilised Kaupapa Māori research were more likely to be considered high-quality.

Interpretation This study shows that the current surgical evidence base is not responsive to Māori. It calls for a review of research practices and encourages monitoring of the surgical evidence base for all Indigenous peoples.

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Keywords: Māori health; Surgery; Equity; Aotearoa New Zealand

Introduction

Māori are the Indigenous people of Aotearoa, New Zealand (NZ), comprising about 17% of the total NZ population.[1] Following the signing of Te Tiriti o Waitangi in 1840, the systematic imposing of a British colonial system on Māori by force was initiated. Te Tiriti o Waitangi is the Māori text of the NZ nation's agreement. It enabled the British Crown to establish government over its settlers in NZ whilst affirming rangatiratanga (sovereignty) of Māori over their own affairs, including natural resources".[2,3] The Treaty of Waitangi is the English version, which differs significantly from Te Tiriti, and it was the Māori version that was presented and signed by most Rangatira Māori

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Research in context

Evidence before this study

We conducted preliminary searches on Medline, EMBASE, PubMed, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus, using keywords such as Aotearoa, New Zealand, ethnicity, Māori, and surgery. We restricted the search to articles published since 2000. We found evidence outlining that Māori experience poorer access to some surgical interventions and higher rates of postoperative mortality compared to non-Māori in Aotearoa, New Zealand (NZ) through a comprehensive narrative review published in 2015 highlighted. In addition, a systematic review published in 2020 conveyed that Indigenous peoples worldwide experience higher rates of postoperative mortality across a range of surgical specialties. Despite this, we did not find evidence critiquing NZ's surgical evidence base regarding its research responsiveness to Māori.

Added value of this study

This is the first scoping review to review all studies related to Indigenous Māori in any surgical specialty. It is also the first to critique the evidence base regarding its responsiveness to Māori utilising two Indigenous frameworks. We have highlighted that from 2000 to 2024, most studies relating to surgery and Māori were of low quality regarding their responsiveness to Māori. The study found that 55% of the included studies did not involve meaningful collaboration with Māori. This means Māori were not explicitly included in the research or as co-authors. The study highlights the urgent need to improve research practices in NZ to honour Te Tiriti o Waitangi and other legal agreements by involving Māori as partners in research related to their health and the delivery of publicly funded health services. Additionally, there is a significant lack of Māori scholarship development, and scholars and clinicians must address this issue in NZ.

Implications of all the available evidence

Clinicians and academics have a moral and legal obligation to maintain high ethical standards in health research involving Māori, respecting treaty rights and promoting ethical practices. It is essential to regularly update these standards to honour Indigenous rights and build trust with Indigenous communities by adhering to international norms of data sovereignty. Our study suggests concrete recommendations for improving Māori research responsiveness in surgical research, emphasising the need for ongoing commitment at both the researcher and institutional levels. From an international perspective, this study is the first to critique the surgical research evidence based on how it honours Indigenous rights and covenants and can be replicated for other Indigenous peoples.

(Māori chiefs). Despite promises of a reciprocal partnership, NZ is a colonial state built on systematic breaches of Te Tiriti o Waitangi, where mass migration of British settlers from the mid-nineteenth century occurred coupled with civil war instigated by British settlers to assert their independence.[4] As a result, British settler society prospered by building an economy powered by illicit acquisitions of resources from Māori, the exploitation of Māori labour and the subjugation and systemic oppression of Māori culture, economy, philosophy and spirituality.[5–7] Therefore, Māori have been socio-politically and economically oppressed with deeply entrenched intergenerational ramifications resulting in contemporary inequities across health, education, justice, income and decision-making.[8,9]

Like many Indigenous peoples worldwide, Māori experience significant health inequities compared to their NZ European counterparts. On average, Māori have the poorest health status of any ethnic group in NZ and receive less access to, and poorer care throughout, the entire healthcare services pipeline, from primary health to tertiary level care.[10–13] Addressing persistent health inequities for all Indigenous peoples worldwide requires settler states to revisit their deep-rooted historical, cultural, and systemic foundations.[14,15] Political rhetoric that asserts that everyone starts on a 'level-playing field' concerning socioeconomic opportunities, alongside narratives urging Indigenous peoples to take individual responsibility for health inequities, completely ignores the colonial devastation that has excluded Indigenous participation in and exposure to the socioeconomic determinants of health.[5] Attributing inequity to surface causes like individual health-seeking behaviours, health system access, and social status ignores the foundation of colonial settler histories that have privileged settlers over Indigenous peoples and forcibly imposed colonial legal and political systems.[16–19] The right to good health includes access to healthcare and the determinants of health, which are ratified in NZ by Te Tiriti and other legally binding covenants.[20,21] Importantly, whilst Māori health inequities are unjust and unacceptable, they are amenable to social policy and government intervention.[17,22] Therefore, not addressing Māori health inequities violates fundamental human rights and the rights of Māori as tangata whenua (people of the land).[2,21,23]

The realities noted above have pervasive impacts and implications for the discipline and practice of surgery in NZ. Surgery encompasses a range of subspecialties, and in NZ, the Royal Australasian College of Surgeons (RACS) is responsible for training NZ surgeons and maintaining surgical standards for nine surgical specialties in Australasia. In 2015, the RACS established an Indigenous Health Committee and a Māori Health Advisory Group and implemented cultural safety and cultural competency as a 10th core competence with the

aspiration for all surgeons and trainees to undergo cultural safety training to alleviate systemic racism and other forms of discrimination in surgery.[24,25] The most recent Māori health action plan identified six priority areas, including a plan to undertake research that utilises Kaupapa Māori Research (KMR) methodology to undertake research that is beneficial for Māori and increase understanding of Te Ao Māori (Māori worldview) and mātauranga Māori (Māori knowledge).[26] Despite this, comprehensive reporting on the status of Māori health in surgery utilising Kaupapa Māori research methodology has not yet been performed. As such, it is unclear where the priorities for research or intervention lie.[27] Highlighting gaps in access to and through surgical care pathways is crucial as it is known that Māori experience higher rates of perioperative mortality.[28] However, research focusing 'on Māori' has notably excluded Māori, leading to the perpetuation of racist stereotypes of Māori.[29] Therefore, we must first examine how surgical research involving Māori has been conducted and determine if it has been done in a culturally safe and responsive manner thus far.[30–32]

Numerous examples of how responsive Māori-led research centring mātauranga Māori and cultural safety have changed and contributed to health equity gains for Māori exist.[33–35] As outlined by Reid et al. (2021), responsiveness to Māori reflects the NZ Government's view that health research conducted in NZ should contribute to improving Māori health and recognises the NZ Government's accountabilities under Te Tiriti o Waitangi, which flows on to research organisations receiving government funding.[32] There are many 'Responsiveness to Māori' frameworks accessible to health researchers, with the majority emphasising the importance of Te Tiriti o Waitangi in health research in NZ.[32] Nonetheless, irrespective of the framework's origin, these are most successful in fostering responsiveness to Māori when applied comprehensively.[32] This scoping review summarises the nature and extent of evidence in NZ related to Māori in surgical diseases and conditions, as well as care, and appraises this evidence base regarding its responsiveness to Māori using two frameworks developed by Māori clinicians and scholars in NZ.

Methods

Methodology and researcher positionality

This study was performed using KMR methodology, given this research centres on Māori and seeks to critique researcher responsiveness to Māori in surgical research. As a methodological approach, KMR provides a 'by Māori, for Māori, with Māori" framework for research that places Māori interests at the centre and challenges 'accepted' ways of 'knowing, doing and understanding' Māori.[36] It also ensures a pro-equity, non-victim-blaming, strength-focused approach to research reporting.[36] This review was designed to scope the relevant surgical literature to identify strengths, limitations and gaps in research concerning this purpose. Māori governance and leadership were assured through a Māori-led research team with a range of expertise in surgery (J-LR, RL), primary healthcare (JT, MH) and public health (SA). Most of the research team identifies as Māori who are committed to health equity for Māori in their respective fields (J-LR, NA, MK, JT, MH, RL). In addition, the research team utilised a conceptual framework that ensures advocacy for health equity, rejection of deficit analysis and an anti-racism praxis.[37–41] Appendix A presents adapted CONSIDER and MĀORI frameworks specifying concordance with each domain.

Study design and inclusion

Studies were included if they reported the prevalence of surgical disease, access to public and private surgical services, perioperative outcomes and/or experiences of Māori in NZ over any of the nine surgical specialties. This included studies that measured surgical care and outcomes by ethnicity. International studies were included if the results were reported separately for NZ cohorts. Research letters, editorials, perspective pieces, non-consecutive studies, and articles for which full texts are unavailable (e.g., conference abstracts) were excluded. The full study protocol for this scoping review has been published and is reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist.[42,43] In addition, this scoping review protocol was registered in the Open Science Framework (10.17605/OSF.IO/NP4H3).

Electronic search

The search strategy was developed in PubMed using the National Library of Medicine's PubMed platform and subsequently adapted to OVID SP (Silverplatter) for MEDLINE, Embase, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus considering the specific controlled vocabulary and indexing terms of each database. Each adapted search was then independently conducted in its respective database. Appendix B presents all search strategies in detail. The key search terms were centred on the nine surgical specialties (general surgery, vascular surgery, orthopaedic surgery, paediatric surgery, plastic and reconstructive surgery, otorhinolaryngology, neurosurgery, urology, and cardiothoracic surgery), disparities and inequities, Māori, all ethnicities, and Aotearoa, NZ. Two reviewers (J-LR, JT) independently performed the searches and identified eligible texts. Lastly, three researchers (MK, NA and J-LR) identified further relevant studies for inclusion by reviewing the bibliographies of included texts from the initial search. Each included study was charted independently by three reviewers (J-LR, MM and MK), with discrepancies resolved by

discussion with the expert sub-group. The data variables collected are described in the published protocol for this study, with all studies disaggregated by surgical specialty. The last search was performed on July 29th, 2024, and studies were restricted to those published on or after January 1st, 2000.

Synthesis of results

We first synthesised the data by tabulating the studies according to their surgical specialty and study characteristics, including publication year, sample size, methodology, and key outcomes. These were summarised to offer context and highlight patterns or gaps in the literature. This allowed for an organised presentation of the data, starting with a high-level overview of the studies' characteristics and specialties, followed by a detailed appraisal of their methodological strengths and limitations. The synthesis provided a robust foundation for subsequent interpretation and building of recommendations in line with Te Tiriti o Waitangi to advance responsiveness to Māori in surgical research.

Assessment of study responsiveness to Māori

Māori responsiveness was independently assessed by two reviewers (NA, MK) and confirmed by the lead author (J-LR) using two frameworks. The MĀORI framework is a conceptual framework that was developed into a checklist comprising five domains: Māori leadership, advocacy for health equity, opposes deficit theory, rejects racism and Indigenous data sovereignty.[44] This framework was published in the premier journal for surgical health professionals and researchers in Australia and NZ to urge researchers and surgeons to take better care of conducting research, including and focussing on Māori. The second framework was an adapted checklist of the Consolidated Criteria for Strengthening Reporting of Health Research involving Indigenous Peoples (CONSIDER) framework by Brewer et al. (2022), where eight criteria were developed from the original 17-point CONSIDER checklist.[45,46] Supplementary Tables S1 and S2 outline the specific criteria under each domain within each framework. In accordance with the methodological approach utilised by Brewer et al. (2022), studies were deemed high quality if they met at least 50% of the criteria in each framework. For the MĀORI framework, authors were graded for the first four criteria, with the fifth criterion, *Indigenous Data Sovereignty*, graded as optional, given this is a new development in academia. Studies achieving one of the five domains could be upgraded to 50% if they met the fifth optional criterion of *Indigenous Data Sovereignty*. General and Māori scholarship capacity development was assessed by scrutinising each article to delineate author roles, affiliations, qualifications, and seniority in their field. Our collaborative team utilised our professional networks to confirm leadership positions held.

Changes to protocol

The original protocol aimed to assess and report the available evidence on surgical care for Māori in Aotearoa, New Zealand. This involved reviewing the evidence on the incidence and prevalence of surgical conditions (including surgical oncological diseases), perioperative care, and outcomes.[42] The following changes were made to our protocol:

- The search period was extended to include recent publications up to June 29th, 2024.
- All included articles were appraised using both the Māori and CONSIDER frameworks.
- We specifically focused on articles published in peer-reviewed scientific journals to assess their relevance to Māori.
- As we identified 254 studies for inclusion in this scoping review, we decided to conduct dedicated systematic reviews for each surgical specialty. The first review in Neurosurgery has been completed and published.[47]
- The grey literature is not appraised in this scoping review but will be examined within each dedicated systematic review.

Role of the funding source

The Health Research Council of New Zealand had no role in the study design, data collection, analysis, interpretation, or report writing.

Results

The database searches identified 3048 records (Fig. 1). From these records, 375 reports were selected for full-text review. Of these, 254 reports were included. Over the 24-year study period, the number of included articles assessing surgical disease, outcomes, and experiences for Māori increased over time. Additionally, there was an increase in the number of articles with Māori leadership and Māori junior scholarship capacity (Fig. 2).

Study type and design

Many of the included articles were quantitative studies (N = 230, 90.6%), with most employing a retrospective observational cohort study design (N = 207, 81.5%). Only one randomised controlled trial was included, focussing on increasing participation in NZ's national bowel screening program.[48] Other quantitative study designs included prospective observational cohort studies (N = 10, 3.9%), cross-sectional studies (N = 8, 3.1%), case-controlled studies (N = 3, 1.2%) and one cost-efficacy study (N = 1, 0.4%). Ten systematic reviews (3.9%) and one scoping review (0.40%) were included. Thirteen qualitative studies were included, of which the majority (N = 12, 92.0%) analysed individual or group interviews with patients. The remaining qualitative study sought to critique the messaging of print news

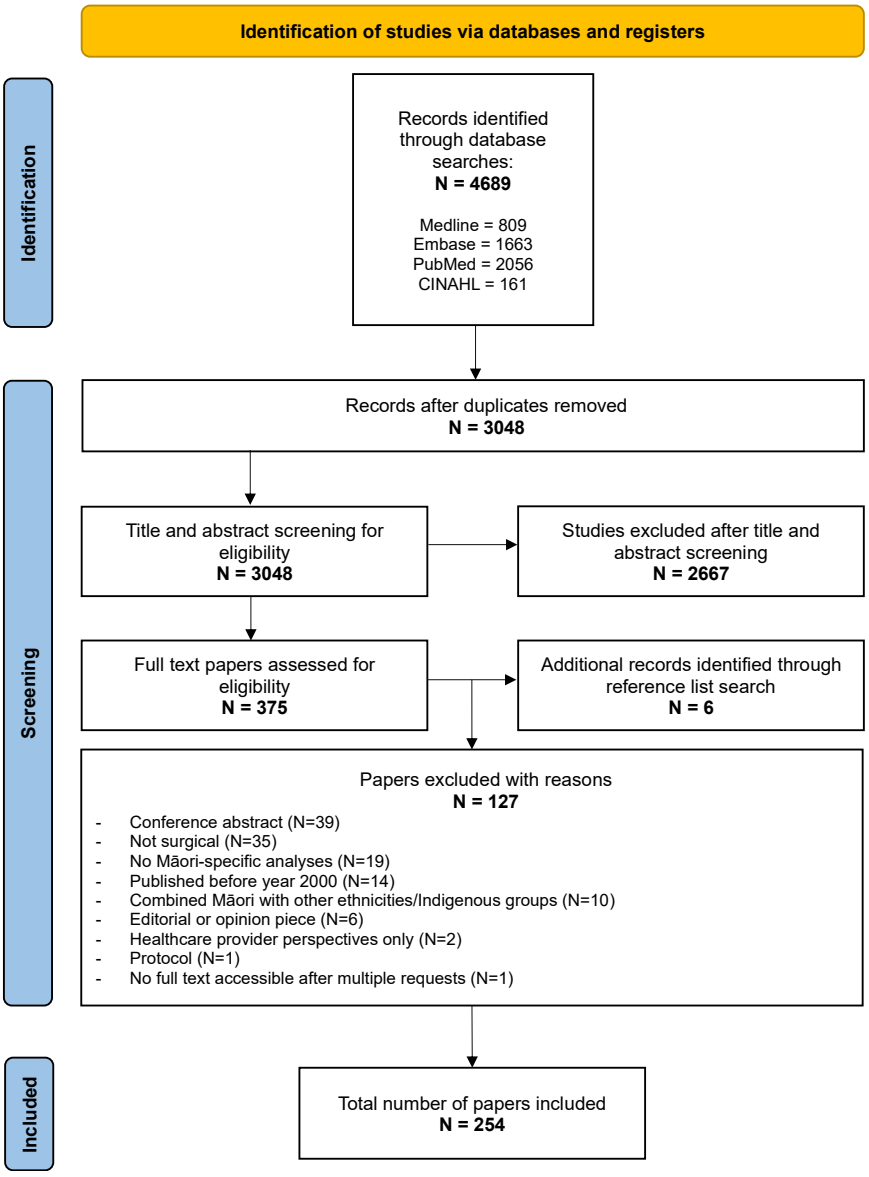

Fig. 1: Scoping review literature search flow diagram.

media articles related to Māori and bariatric surgery.[49] Most of the included articles measured post-operative outcomes (N = 111, 43.7%). For a detailed overview, refer to Supplementary Table S3 and Appendix C.

Research location and leadership

Most studies were performed in NZ (N = 242, 95.3%), with 12 studies conducted by researchers based abroad. With collaborative studies involving multiple specialties, there may not be only one 'leading author'. For this scoping review, the supervising specialty of each study was determined by that of the last-named author and their affiliation(s). Most included studies were not led by surgeons (N = 146, 57.5%), with only a third of these studies (N = 55, 37.5%) naming at least one surgeon as a co-author. More than half of all included studies were categorised under general surgery (N = 138, 54.3%), with most of these studies describing cancer epidemiology, management, and cancer survival or mortality (Fig. 3). In total, surgeons were involved in 64.2% (N = 163) of all included articles through direct leadership as supervising authors (N = 108) or as named co-authors (N = 55). Additionally, 66.0% (N = 168) of all studies contributed to developing junior scholarship capacity by supervising resident medical officers, clinical fellows, research fellows, and community-based researchers.

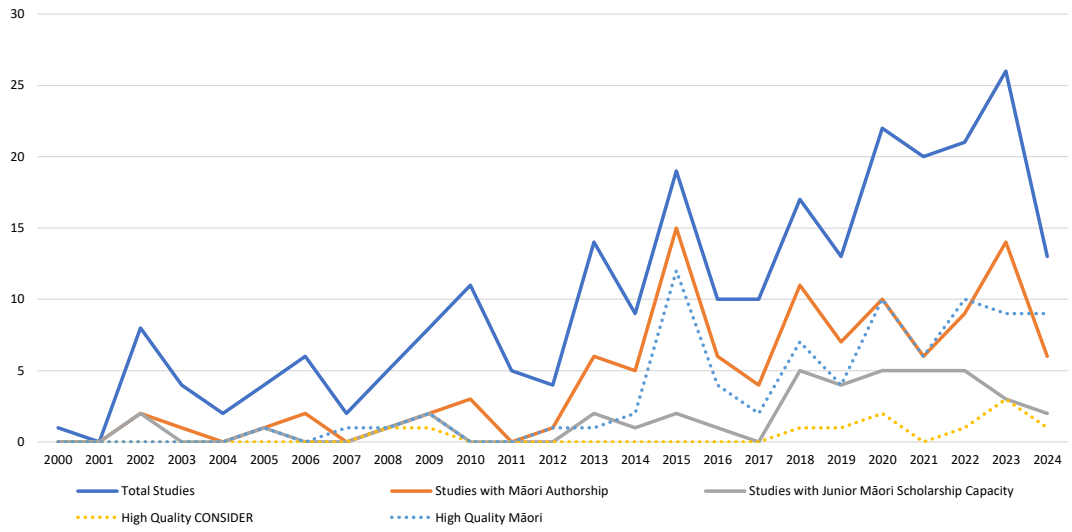

Fig. 2: Included articles over the study period (2000–2024) with corresponding Māori leadership and junior Māori scholarship capacity.

Māori leadership and scholarship capacity

More than 55.1% (N = 140) of articles did not involve Māori as co-authors. Of the 114 (44.9%) that did involve Māori as co-authors, 41 demonstrated Māori scholarship capacity development through the supervision of junior Māori clinicians and researchers. Of these 41 studies, 17 involved junior Māori researchers or clinicians without senior Māori researcher support as listed co-authors. Only 38 of the 108 'surgically led' articles (35.2%) had a Māori lead author.

Research responsiveness to Māori

Only two studies utilised the CONSIDER framework, whilst no studies referenced the MĀORI framework. Sobhy et al. (2024) stated that they conducted and reported their study following the CONSIDER framework; however, they did not meet any of the eight criteria and were subsequently deemed low quality.[50] In contrast, Walker et al. (2024) utilised the CONSIDER framework and met 6/8 criteria, scoring high quality for Māori responsiveness. All Kaupapa Māori studies (N = 6/6, 100%) were of high MĀORI framework quality, and most of these studies (N = 5/6, 83.3%) were also of high CONSIDER quality. Eighty percent of all included studies conducted analyses focusing on Māori; however, most were considered low-quality under both frameworks (Table 1). In general, the qualitative studies performed better over both frameworks despite comprising only 5.1% (N = 13/254) of all articles.

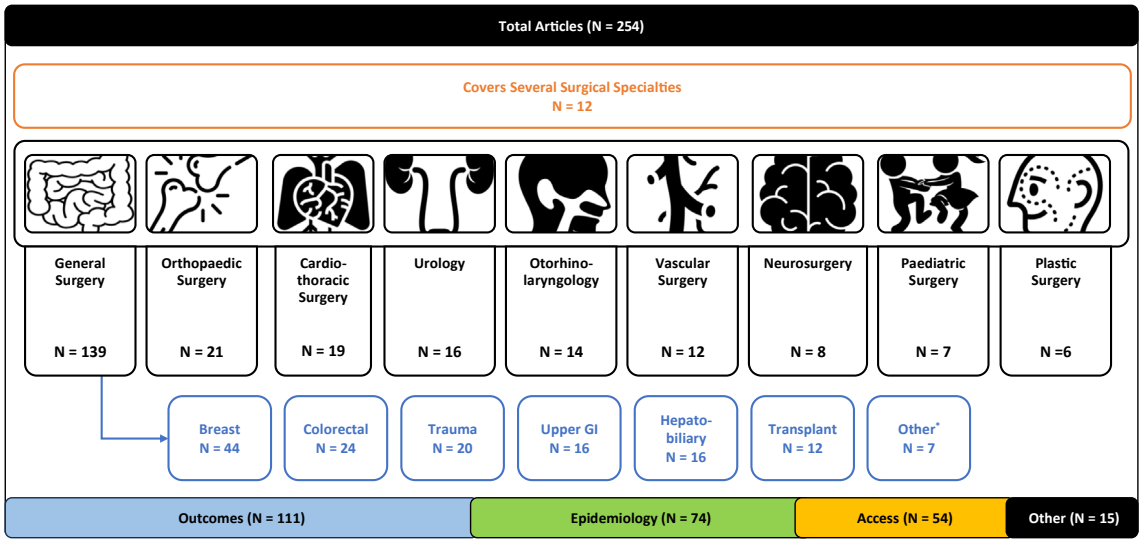

Fig. 3: Distribution of articles by surgical specialty.

Research responsiveness to Māori by surgical specialty

Aside from the general and orthopaedic surgery specialties, no articles under the other seven surgical specialties achieved at least 50% of the CONSIDER checklist criteria, conferring low-quality scores (Supplementary Table S4). The studies performed better with respect to the MĀORI framework criteria, but only an average of nine studies across all specialties achieved scores consistent with high quality. A higher proportion of general surgical articles were of high quality as assessed by the CONSIDER (N = 10/139, 7.2%) and MĀORI framework (N = 52/139, 37.4%), acknowledging that the number of studies under the specialty of general surgery was at least seven times that of the number of studies under the other specialties.

Research responsiveness to Māori over time

There was an increase in the number of high-quality studies consistent with the CONSIDER and MĀORI criteria over the study period. The most recent period (2020–2024) displayed the highest proportion of high-quality studies at 7% (N = 7/100) and 43% (N = 44/100) under the CONSIDER and MĀORI frameworks, respectively. However, compared to the total number of articles published, the number of high-quality studies remained low. Over the 24-year study period, a mean increase in high-quality Māori responsive studies was observed under the CONSIDER and MĀORI frameworks (Fig. 2).

Studies employing Kaupapa Māori research methodology or principles were more likely to have been published recently (2020–2024). Most of these studies described active participation and relationships with Māori stakeholders throughout their research processes.[10,29,51–53] Researchers also conducted strength-based analysis and interpretation of their findings and explicitly identified racism, colonisation, and socioeconomic disparities as causative factors of inequities in access to equitable surgical care.

	Total	CONSIDER <50% low quality	CONSIDER ≥50% high quality	MĀORI framework <50% low quality	MĀORI framework ≥50% high quality
Total	**254**	243 (96%)	11 (4%)	172 (68%)	82 (32%)
Māori inclusion					
Focussed	**203**	198 (98%)	5 (3%)	136 (67%)	67 (33%)
Included	**45**	44 (98%)	1 (2%)	36 (80%)	9 (20%)
Kaupapa Māori	**6**	1 (17%)	5 (83%)	–	6 (100%)
Design					
Quantitative	**230**	226 (98%)	4 (2%)	164 (71%)	66 (29%)
Qualitative	**13**	6 (46%)	7 (54%)	4 (31%)	9 (69%)
Systematic reviews	**11**	11 (100%)	–	4 (36%)	7 (64%)
Surgical specialty					
General surgery	**139**	129 (93%)	10 (7%)	87 (63%)	52 (37%)
Orthopaedic surgery	**21**	20 (95%)	1 (5%)	18 (86%)	3 (14%)
Cardiothoracic surgery	**19**	19 (100%)	–	12 (63%)	7 (37%)
Urology	**16**	16 (100%)	–	11 (69%)	5 (31%)
Otorhinolaryngology	**14**	14 (100%)	–	13 (93%)	1 (7%)
Vascular surgery	**12**	12 (100%)	–	10 (83%)	2 (17%)
Neurosurgery	**8**	8 (100%)	–	7 (88%)	1 (13%)
Paediatric surgery	**7**	7 (100%)	–	5 (71%)	2 (29%)
Plastic surgery	**6**	6 (100%)	–	6 (100%)	–
All	**12**	12 (100%)	–	3 (25%)	9 (75%)
Year					
2000–2004	**15**	15 (100%)	–	15 (100%)	–
2005–2009	**24**	22 (92%)	2 (8%)	19 (79%)	5 (21%)
2010–2014	**45**	45 (100%)	–	41 (91%)	4 (17%)
2015–2019	**47**	65 (72%)	2 (4%)	38 (81%)	29 (62%)
2020–2024	**103**	96 (93%)	7 (7%)	59 (57%)	44 (43%)
Leadership					
Surgery	**108**	108 (100%)	–	84 (78%)	24 (22.2%)
Public health	**88**	83 (94%)	5 (6%)	52 (59%)	36 (43.4%)
Māori health	**8**	3 (38%)	5 (63%)	–	8 (100%)
Other	**50**	49 (98%)	1 (2%)	36 (72%)	14 (28%)

Table 1: **CONSIDER and MĀORI framework appraisals.**

Discussion

This scoping review retrieved 254 studies investigating the epidemiology of surgical conditions, access, and outcomes following surgery related to Māori in NZ. Studies were categorised into the General Surgery specialty, with most studies employing quantitative research methods with a retrospective cohort design. Following each study's appraisal of their research responsiveness to Māori utilising two adapted frameworks, most studies were assessed as low quality. Two articles employed the CONSIDER checklist, whilst no studies employed the MĀORI framework. Despite most studies focusing on Māori, 55% were conducted without Māori leadership and co-authorship. Kaupapa Māori research scored the highest under both the CONSIDER and MĀORI frameworks, with most of these studies adopting qualitative methods. The MĀORI framework conferred more leniency over its five domains than the CONSIDER framework, as a higher proportion of high-quality studies was observed under the MĀORI framework and across each domain.

The responsibility of clinicians and academics to maintain ethical standards in health research with Māori is supported by legal and treaty rights.[2,19] Furthermore, clinical research is guided by fundamental ethical standards to prevent harm to individuals who consent to participate.[54] In NZ, researchers are increasingly required to demonstrate a clear understanding of their delegated responsibilities when conducting research aimed at addressing Māori health inequities.[32] These requirements lay the foundation for responsiveness to Māori in health research and ensure

that equity-based approaches are considered. For surgical research to contribute to addressing Māori health inequities, consideration of the relevance of the research to Māori, involving Māori as participants, conducting structural analyses, and promoting the Māori voice should be made.[32] Finally, we argue for greater engagement with responsiveness to Māori activities as part of our commitment to achieving equitable health outcomes.[32] Yet, unethical scientific practices towards oppressed racialised populations, such as Indigenous peoples, are well documented worldwide.[55,56] As Indigenous scholars enhance scholarship capacity and cultural revitalisation, ethical standards should be regularly reviewed to ensure research practices align with Indigenous rights.[57] In addition, they need to be refined in accordance with Indigenous self-determination and the realisation of Indigenous aspirations.[58] To rebuild and strengthen trust in clinical research among Indigenous peoples, researchers, scientific journals, institutional review boards, and ethics committees must adhere to international standards of Indigenous data sovereignty and ethical use of Indigenous data.[57,59] Therefore, this scoping review is a first step to improving awareness and culturally safe surgical research processes for Māori.

The decision to utilise two frameworks to assess Māori research responsiveness in this scoping review arose due to their developmental origins. The CONSIDER framework was designed and validated for use in research concerning all Indigenous peoples. Māori surgeons and scholars developed the MĀORI framework to improve responsiveness to Māori within surgical academia.[44,46] In addition, the MĀORI framework references the CONSIDER statement urging researchers to utilise standard checklists to ensure adherence to ethical standards for using and reporting Māori data. In a recent paper by Fisher et al. (2024) examining Māori equity surgical trainee selection, the authors utilised the MĀORI framework, demonstrating how a non-indigenous junior medical clinician supervised by a senior Māori academic and a senior Māori consultant surgeon ensured that their research upheld Kaupapa Māori principles such as Māori advancement.[60] Several reviews applying the CONSIDER statement have assessed the attention to the relevant criteria and quality of Indigenous research responsiveness as low.[61,62]

Our scoping review revealed that 114 articles (44.9%) had Māori co-authors, and 41 of these studies involved mentoring emerging Māori clinicians and researchers. Authentic partnerships between Māori and non-Māori researchers are expected in research focusing on Māori.[25,26,32] The lack of Māori leadership in most of the studies in this scoping review indicates a violation of Te Tiriti o Waitangi. Based on our findings in this scoping review and utilising Te Tiriti o Waitangi as a framework, we present some actionable recommendations to improve research practices when conducting research concerning Māori in surgery (Table 2). We have also highlighted a rise in Māori scholarship capacity development in surgical research, but this is still lacking overall. Emerging Māori researchers must be mentored to increase Māori scholarship and workforce capacity. However, McAllister et al. (2020) emphasise that simply increasing the number of Māori in academia cannot be accomplished through superficial institutional reform or minor adjustments to existing policies.[59] Instead, meaningful reform requires acknowledging and addressing settler-colonial foundations through continuous reflection and action aimed at structural transformation.[63]

Consistent with the aim of this scoping review, we critically assessed Māori responsiveness in research covering multiple surgical disciplines. The authors have commenced further in-depth systematic reviews to identify the specific implications for rigorous, high-quality evidence within each surgical specialty in NZ.

Researcher responsibilities	Institutional responsibilities
Relationships	Surgical Journals
• Researchers must collaborate meaningfully with Māori stakeholders and partner with them to produce research that is pro-equity, non-deficit and anti-racist.	• Mandate the usage of Indigenous frameworks and checklists in the same manner as other standardised checklists (i.e. PRISMA, CONSORT etc). • Allow flexibility in the article wordcount to support researchers to report on Indigenous guidelines and frameworks appropriately.
Māori leadership	Surgical Departments and Training Bodies
• Māori must be included as co-investigators in any research that includes or focusses on Māori (including ethnicity) or where findings will impact on Māori health (i.e. measuring ethnic disparities in surgical disease that is already known to disproportionately affect Māori more than non-Māori).	• Approach any research that seeks to report outcomes for Māori as 'Māori-focussed' and must adhere to Te Tiriti o Waitangi principles. • Strongly endorse/promote the use of frameworks and standard checklists to ensure adherence to ethical standards for the use and reporting of Māori data.
Māori data sovereignty	
• Use frameworks and standard checklists to ensure adherence to ethical standards for the use and reporting of Māori data.	• Advance Māori scholarship capacity by forming genuine partnerships with Māori researchers and stakeholders (including iwi and hapu) to optimise junior Māori researchers having senior Māori researcher oversight and support.

Table 2: **Structural and individual researcher recommendations to enhance research responsiveness to Māori in surgical research.**

This is because the specialty-specific topics investigated and gaps identified will likely have consequences worthy of tailored attention in advanced training programmes within these specialties and continuing professional development activities in general. Collectively, these initiatives also provide the opportunity to develop further, refine, strengthen and evaluate the validity and utility of the MĀORI framework in supporting equitable surgical care for Māori in NZ. Notably, articles eligible for this review that were led or even co-authored by surgeons were in the minority. There is a compelling need for surgical practitioners and researchers to address the breaches identified in this review, given the implications for achieving Māori health equity. Lastly, our search strategy includes terms for disparities/equity with an AND operator, limiting the search to records that mention or are tagged with disparities or equity. We recognise that there is a potential risk of overlooking some papers where these aspects were not referenced as key terms in the titles or abstracts of texts retrieved during the initial database searches.

In summary, this coping review highlights the urgent need for more Māori-led research investigating all domains of surgical disease, surgical care, perioperative outcomes and experiences for Māori in Aotearoa, New Zealand. It calls for a thorough re-examination of individual and institutional research methodologies and puts forward actionable recommendations to address this challenge. It is important to remember that Te Tiriti o Waitangi is the original 'framework' that can, and should be, utilised to ensure Māori research responsiveness alongside other recently developed research frameworks such as the CONSIDER and MĀORI frameworks.

Contributors

JR, NA, MK, AW, JT, SA, RL, WM and MH contributed to conceptualisation, methodology and protocol development. JR, JT contributed to data curation by completing the initial database searches, screening, and article selection. NA, MK and JR contributed to data curation and formal analysis by completing full-text reviews, data extraction and quality assessment. JR also contributed to the drafting of the manuscript with input from MH, SA, AW, WM, RL, and JT. JT and MH provided supervision and oversight from a senior Māori clinician researcher perspective as Māori General Practitioners. JT provided additional supervision from a Te Ao Māori perspective. JR, WM and RL provided oversight and expertise from a surgical perspective, with JR and WM as trainee surgeons with PhDs in surgery and RL as a senior Māori consultant surgeon. SA provided supervision and oversight from an epidemiological/public health perspective. JR, NA, and MK verified the data and accessed the raw data consistently throughout the research process. All authors reviewed and edited the draft manuscripts and approved the final manuscript. JR held the final responsibility for the decision to submit the manuscript for publication.

Data sharing statement

The systematic review protocol was registered with Open Science Framework (10.17605/OSF.IO/NP4H3). A condensed data extraction table and quality assessment table are provided in the appendix of this scoping review. All studies included in this review are accessible via open access or journal subscription.

Declaration of interests

JL-R reports funding from the Health Research Council (HRC) of New Zealand, The Royal Australasian College of Surgeons and the Maurice and Phyllis Paykel Trust. J-LR is also employed part-time at the University of Auckland and received payment for an invited presentation by the New Zealand Women in Medicine Trust. AW reports funding from the Healthier Lives—He Oranga Hauora—National Science Challenge and the Heart Foundation of New Zealand. JT reports funding from the Health Research Council and is employed by Te Korowai Hauora o Hauraki as a general practitioner. JT is also a recently elected board member of the Royal New Zealand College of General Practitioners (RNZCGP) and holds paid and unpaid roles with Hauora Taiwhenua, Te Tatau Kitenga and Te Akoranga a Māui (RNZCGP). RL is a consultant surgeon employed by Te Whatu Ora—Health New Zealand and is the current chair of the Medical Council of New Zealand. SA reports funding from the Health Research Council of New Zealand and Te Whatu Ora—Health New Zealand. WM is an elected board member of Te Ohu Rata o Aotearoa and is employed by Te Whatu Ora—Health New Zealand. MH reports funding from the Healthier Lives—He Oranga Hauora—National Science Challenge, the Heart Foundation of New Zealand and the HRC of New Zealand.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.lanwpc.2025.101487.

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