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Co-designing public policy with Aboriginal and Torres Strait Islander peoples

Margaret Apolima Fono

A thesis submitted in fulfilment of the requirements for the

degree of Doctor of Philosophy

Nura Gili: Centre for Indigenous Programs, Faculty of Arts, Design & Architecture

University of New South Wales

Supervisors

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Professor Leanne Holt

June 2025

Declarations

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- The publication is **not restricted** by any contracts or third-party agreements.
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Publication Details #1

Full Title:	Co-designing public policy in high-income colonial-settler countries – a systematic review.
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Location of the work in the thesis and/or how the work is incorporated in the thesis:	The systematic literature review publication is located in Chapter 1. The systematic literature review sets out to understand whether and in what way policies have been co-designed with priority populations in high-income colonial settler countries. It focuses on priority populations in high-income colonial settler countries to derive comparable insights from population groups facing similar disadvantages to Aboriginal and Torres Strait Islander peoples, as a result of colonial policy design.

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Location of the work in the thesis and/or how the work is incorporated in the thesis:	Our research protocol publication is located in Chapter 2. This protocol presents the study design intended to answer our research question. It illustrates the research protocol methods, including Indigenous governance, Indigenous yarning methods, realist evaluation, realist review, and framework synthesis.

Publication Details #3

Full Title:	Co-designing Australia's National Aboriginal and Torres Strait Islander Health Plan 2021–2031: a realist evaluation
Authors:	Fono MA, Chapman F, Christie V, Parter C, Knight J, Sherriff S, Gwynne K.
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Location of the work in the thesis and/or how the work is incorporated in the thesis:	The realist evaluation publication is located in Chapter 3. It applies a realist lens to examine the policy co-design process in developing the National Aboriginal and Torres Strait Islander Health Plan (NATSIHP) 2021-2031 to provide insights for answering our research question

Publication Details #4

Full Title:	Aboriginal and Torres Strait Islander Perspectives in Drinking Water Policy: A Realist Review.
Authors:	Fono MA, Chapman F, Christie V, Parter C, Knight J, Sherriff S, Rambaldini UB, Moggridge B, Gwynne K.
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Location of the work in the thesis and/or how the work is incorporated in the thesis:	The realist evaluation publication is located in Chapter 3. It applies a realist lens to examine how Aboriginal and Torres Strait Islander knowledge systems have been integrated into national, state/territory and local drinking water policy to elucidate findings related to our research question.

Publication Details #5

Full Title:	A culturally grounded Framework for co-designing policy with Aboriginal and Torres Strait Islander peoples
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Location of the work in the thesis and/or how the work is incorporated in the thesis:	The Framework publication is located in Chapter 4. Our Framework addresses our research question by synthesising the findings from Chapters one and three into a culturally grounded model for co-designing policy with Aboriginal and Torres Strait Islander peoples.

Candidate's Declaration

I declare that I have obtained written permission for the reproduction of all third-party material included in this thesis. I confirm that where I have used a publication in place of a chapter, the listed publication(s) above meet(s) the requirements to be included in the thesis as per the Higher Degree Research Examination Procedure (https://www.unsw.edu.au/content/dam/pdfs/governance/policy/2022-01-policies/hdrexamprocedure.pdf).

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Acknowledgement of Country

I acknowledge that the lands on which my family and I live, play, study and work were never ceded. Therefore, these lands always were and always will be Aboriginal and Torres Strait Islander peoples' lands. I pay my respects to Aboriginal and Torres Strait Islander peoples, the traditional custodians of these lands. In honouring their cultural connection to land, sea, sky and community, I commit to reconciliation for Aboriginal and Torres Strait Islander peoples – in my home, workplace and social environments. I also pay homage to my Motherland, the Kingdom of Tonga, and extend my respect to Birpai Country, Dharug and Wiradjuri – four countries that have moulded me into the woman I am today.

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Thank you to the Australian Government Department of Health, Disability and Ageing for employing me and supporting my studies during my employment. Special thanks to Nick Pascual and Dr Harleen Basrai for your leadership, encouragement and support.

Finally, thank you Romlie Mokak for your words that breathe life into my thesis and stir a profound sense of determination in many to bring about change:

> *"…Aboriginal and Torres Strait Islander people will have the most say in our futures. Not just some say, or even the first say, or the last say; the most say in our futures. Where Aboriginal and Torres Strait Islander people are the designers, builders, practitioners, evaluators of our futures. Where we prosper in the fullness of our talents, ingenuity and Indigeneity, in a nation where we are no longer positioned as problematic people. And where racism is for others to understand, call out and eradicate, not for Aboriginal and Torres Strait Islander people to endure, educate and explain. Just as we cannot separate our histories, so too are our futures intertwined. We have a chance to ignite change from the ground up. But for this to happen, Aboriginal and Torres Strait Islander people must be at the centre of policy decision making, program design and implementation. We must tackle the imbalance and abuse of power at all levels of decision making. And we must redefine our understanding of prosperity as a family-centred, community focused agenda that is firmly rooted in the daily lives of our people. The wellbeing of future generations depends on it."*
>
> Romlie Mokak
> Mokak Oration
> Australian Government Productivity Commission
> 20 November 2024

Positionality

As a second-generation migrant from a middle-income background, my personal experiences working with priority populations across Australian communities have profoundly shaped my research interests in co-designing policy with Aboriginal and Torres Strait Islander peoples. While I respect that everyone's journey and experiences are never quite the same, I can at least relate to the challenges impacting my Aboriginal and Torres Strait Islander friends and communities with whom I have worked and continue to walk alongside. As a member of an ethnic minority group, I have lived experience of navigating the systemic barriers that priority populations face. Though our roads are uniquely our own, common themes of discrimination and racism are woven into our footprints. I am grateful for my Aboriginal and Torres Strait Islander and non-Aboriginal and Torres Strait Islander supervisors and colleagues who have guided my critical examination of issues. I also appreciate their support for me in recognising how my personal journey shapes my perspectives.

Indigenous governance

In leading this research, I committed to establishing robust Indigenous governance from the start. I remained vigilant of my potential biases and set up accountability mechanisms, such as a Co-design Brains Trust (CBT). The CBT comprised of Aboriginal and Torres Strait Islander peoples with policymaking, co-design and cultural knowledge expertise. The CBT provided Indigenous governance for our qualitative research, ensuring that Aboriginal and Torres Strait Islander voices were authentically represented throughout each research stage. We prioritised Aboriginal and Torres Strait

Islander self-determination and knowledge systems through our collaborative yarning methods (e.g., yarning circles).

Language

This thesis mostly uses the term ‘Aboriginal and Torres Strait Islander peoples’ to describe the first peoples and original custodians of Australia. Parts of this thesis also employs ‘First Nations’ to respectfully represent Aboriginal and Torres Strait Islander peoples in Australia. This thesis also uses the word ‘Indigenous’ to describe policies, programs and governance explicitly pertaining to Aboriginal and Torres Strait Islander peoples.

The unpublished chapters (i.e., introduction, discussion, and conclusion) adopt the term 'Aboriginal and Torres Strait Islander peoples'. The published chapters use the terms ‘Indigenous’ and ‘First Nations’ to align with journal and publication requirements, as well as to honour co-authors’ preferences.

I independently led this important and novel research in accordance with PhD requirements. Co-design, however, is inherently collaborative and its pursuits cannot be authentically represented through singular terms like ‘I’ and ‘my’. Thus, inclusive language is adopted throughout this research to honour the collective contributions of co-design participants. This thesis uses the terms ‘we’ and ‘our’ to respectfully signify the concerted efforts of the lead author, CBT and supervisory team.

Declaration of using Artificial Intelligence during the writing process

With guidance from my supervisors and CBT, I wrote and produced this thesis and used Grammarly and Copilot to support my editing process and improve readability.

Glossary

Word	Definition
Aboriginal and Torres Strait Islander people	Australia's first peoples.
Aboriginal and Torres Strait Islander cultures	Australia's first peoples' rich and diverse beliefs, customs and knowledges. They are deeply linked to an interdependent relationship with the land, sea and sky, and expressed in various ways (e.g., storytelling, art, dance, language and songlines).
Aboriginal and Torres Strait Islander ways of knowing, being and doing	Australia's first peoples' worldviews. Western philosophical branches can resonate with Aboriginal and Torres Strait Islander ways of knowing (epistemology), being (ontology), and doing (axiology).
Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS)	Established in 1964, AIATSIS is an independent Australian Government statutory authority that collects and preserves Aboriginal and Torres Strait Islander peoples' history, cultural resources and other information.
Co-design	A design approach involving collaborative and inclusive ways of engaging diverse stakeholders (including end users) in creative and forward-thinking design processes.
Co-design Brains Trust (CBT)	A group of Aboriginal and Torres Strait Islander peoples with policymaking, co-design and cultural knowledge expertise. The

	CBT provided subject matter expertise and Indigenous governance for this thesis' qualitative research to ensure Aboriginal and Torres Strait Islander voices were genuinely reflected throughout all research phases.
Co-designed policy	A public policy that been developed using a policy co-design approach.
Colonial	The ongoing social and political impacts of the British colonisation of Australia (from 1788).
Context-Mechanism-Outcome (CMO) configurations	In realist methods, CMO configurations are informed by evidence and/or theory to build a program theory.
Culturally responsive	Approaches that meet the needs of Aboriginal and Torres Strait Islander peoples, as defined by Aboriginal and Torres Strait Islander peoples.
My Life My Lead (2017)	A national consultation activity, held throughout 2017, that harnessed Aboriginal and Torres Strait Islander peoples' insights to shape future health policies and programs.
National Aboriginal and Torres Strait Islander Health Plan (2021-2031)	A national policy covering the period from 2021 to 2031, designed to address Aboriginal and Torres Strait Islander peoples' health and wellbeing needs.

National Agreement on Closing the Gap (2020)	A national policy aiming to enhance the ways Aboriginal and Torres Strait Islander peoples and governments work together to address the inequities experienced by Aboriginal and Torres Strait Islander peoples.
Policy co-design	A policy design approach involving collaborative and inclusive ways of engaging diverse stakeholders (including end users) in creative and forward-thinking design processes.
Policy design	Conceptualising and developing a framework to address a social problem. Policy design generally precedes policy implementation and includes problem identification and analysis, objectives formulation and a detailed approach to resolve the problem.
Policy implementation	The actions dedicated to enact and realise a policy's objectives. Policy tools and administrative mechanisms are applied to fulfil a policy's aims.
Program theory	In realist approaches, program theories are informed by CMO configurations to explain how and why a program or intervention works, for whom, and in what contexts.
Public policy	A government's set of measures or directives (commonly organised within a framework) designed to address a social problem. Referred to as 'policy' in this thesis.
Realist approaches	Developed by Pawson and Tilley, to understand how, why, for whom and in what contexts, programs work or fail.

Self-determination	The right of Indigenous peoples to "… freely determine their political status and freely pursue their economic, social and cultural development." (p. 4, Article 3, United Nations Declaration on the Rights of Indigenous Peoples, 2007).
Western	Colonially influenced approaches and systems reflecting individualism, materialism, scientific rationalism and linear time.
Yarning	An Aboriginal and Torres Strait Islander cultural practice used to communicate respectfully and build meaningful relationships.
Yarning circle	An Aboriginal and Torres Strait Islander cultural practice where participants sit in a circle and yarn in a culturally safe setting. Observing an agreed protocol, participants respectfully share experiences, knowledges and nurture meaningful connections.

Abstract

Background

Aboriginal and Torres Strait Islander cultures have prevailed since time immemorial and embody extensive knowledge systems. Australian policy development has historically overlooked such knowledges, which has led to misinformed policies contributing to persisting systematic inequities. These disparities highlight the inadequacy of conventional policy design approaches to effectively integrate Aboriginal and Torres Strait Islander knowledge systems. The National Agreement on Closing the Gap calls for culturally responsive policies, shaped by Aboriginal and Torres Strait Islander knowledges.

Aim

We explore co-designing policy with Aboriginal and Torres Strait Islander peoples, to develop a framework that embeds Indigenous governance and knowledge systems in policy design, to generate culturally responsive policy.

Methods

Indigenous governance was provided by the Co-design Brains Trust, comprising Aboriginal and Torres Strait Islander peoples with policymaking, co-design and cultural knowledge expertise. Aboriginal and Torres Strait Islander self-determination and knowledge systems were prioritised through our collaborative yarning methods. The study used qualitative research, which adopted a strengths-based examination of

existing theoretical foundations for, and prospective applications of, policy co-design. Realist and framework analyses were applied to unravel complex policymaking contexts, mechanisms and outcomes.

Results and Discussion

We found that colonial policy has perpetuated historical inequities and harms to Aboriginal and Torres Strait Islander peoples. Policymakers have failed to recognise the significant impact of Western biases on policy design and subsequent funding, programs, and outcomes for Aboriginal and Torres Strait Islander peoples. A transformative shift is needed to create culturally responsive policy that meets the needs and aspirations of Aboriginal and Torres Strait Islander peoples. Co-designing policy provides a means to accomplish this. While the rhetoric appealing for co-designing policy with Aboriginal and Torres Strait Islander peoples is becoming increasingly acknowledged, progress is disjointed, inconsistent and tokenistic in many cases. We consolidate best-practice evidence into a culturally grounded framework to assist policymakers to co-design culturally responsive policy with Aboriginal and Torres Strait Islander peoples.

Conclusion

Policy co-design is a transformative approach to bridge the widening gap between Aboriginal and Torres Strait Islander peoples' unique needs and the institutional structures impacting them. Our framework promotes self-determination in policy co-design as well as the systems requiring change to enact policy co-design.

Publications statement

I am the lead author for all publications resulting from this thesis and was supported by the valued contributions of co-authors, as outlined below. For each publication, I led the research conceptualisation, investigation, methodology (including protocol, data collection, analysis and synthesis), administration and manuscript writing and editing. Each publication is open access. The respective journals and co-authors granted permission for inclusion in this thesis. This thesis was developed without editorial input from journal editors or other professional services.

Publications resulting from this thesis

1. Fono MA, Gwynne K, Rambaldini UB. Co-designing public policy in high-income colonial-settler countries – a systematic review. CoDesign. 2024; 14:1-9. doi: https://doi.org/10.1080/15710882.2024.2395359

2. Fono MA, Rambaldini UB, Christie V, Gwynne K. Co-designing health policy with Aboriginal and Torres Strait Islander peoples: a protocol. Public Health Research and Practice. 2024 Oct 23;34(3):1-8. doi: https://doi.org/10.17061/phrp34122404

3. Fono MA, Parter C, Chapman F, Knight J, Christie V, Gwynne K. Co-designing Australia's National Aboriginal and Torres Strait Islander Health Plan 2021–2031: a realist evaluation. CoDesign. 2025 Apr 5:1-5. doi: https://doi.org/10.1080/15710882.2025.2483520

4. Fono MA, Chapman F, Christie V, Parter C, Knight J, Sherriff S, Rambaldini UB, Moggridge B, Gwynne K. Aboriginal and Torres Strait Islander Perspectives in Drinking Water Policy: A Realist Review. Australian Journal of Social Issues. 2025 Apr. doi: https://doi.org/10.1002/ajs4.70020

5. Fono MA, Parter C, Chapman F, Knight J, Sherriff S, Christie V, Gwynne K. A culturally grounded framework for co-designing policy with Aboriginal and Torres

Strait Islander peoples. Policy Design and Practice. 2025 Jun. doi:

https://doi.org/10.1080/25741292.2025.2514340

Presentations resulting from this thesis

1. Fono MA. Co-designing policy with Aboriginal and Torres Strait Islander peoples. PhD Commencement Presentation. Speech presented at; 4 October 2022; Macquarie University, Australia.

2. Fono MA. Co-designing policy with Aboriginal and Torres Strait Islander peoples. (PhD Thesis Progress Review). Speech presented at; 18 October 2024; University of New South Wales, Australia.

3. Chapman F, Fono MA. Creating a new evidence quality assessment tool for Realist review of Aboriginal and Torres Strait Islander perspectives on drinking water policy. Speech presented at; 23 October 2024; Central Queensland University, Australia.

4. Fono MA. Realist review of Aboriginal and Torres Strait Islander perspectives in drinking water policy. Speech presented at; 4 December 2024; Australian Freshwater Sciences Society Conference, Albury, Australia.

5. Fono MA. Co-design and yarning circles. Principles into Practice: Methods for Systemic Co-Design. Workshop presented at; 14 January 2025; Port Macquarie, Australia.

6. Gwynne, K, Fono MA. A culturally-grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples. Lecture presented at; 1 April 2025; University of New South Wales, Australia.

7. Fono MA. Co-designing policy with Aboriginal and Torres Strait Islander peoples. Speech presented at; 18 June 2025; Australian Government Department of Health, Disability and Ageing (Grant Strategy and Coordination Section), Port Macquarie, Australia.

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1. Quality assessment using JBI Critical appraisal checklist for qualitative research	42	Systematic literature review, Appendix A.
2. Quality Assessment results for included studies	91-94	Realist review, Appendix A.
3. Acronyms table	95	Realist review, Appendix B.

Preface

Publications

This thesis presents a compilation of published papers that have been formatted and referenced according to the respective journal standards. Thus, there may be instances of repetition as each publication necessitates the inclusion of background and contextual information.

Structure

The following thesis structure is illustrated in Figure 1.

Chapter One

i. Chapter One introduces the research problem. It articulates the significance of Aboriginal and Torres Strait Islander history, traditions and knowledges as one of the world's oldest living cultures. It delineates how colonisation and colonial systems and constructs have detrimentally impacted Aboriginal and Torres Strait Islander peoples' lives. It defines public policy (hereinafter referred to as 'policy') and illustrates the power of policy to determine the outcomes of Aboriginal and Torres Strait Islander peoples' lives. It shows how historical policies continue to negatively impact Aboriginal and Torres Strait Islander communities. It examines Australian policy design mechanisms and explores the value of participatory methods in developing policy content. It argues the need to examine co-design, a specific

participatory mode, as a way of developing policy to better meet the needs and aspirations of Aboriginal and Torres Strait Islander peoples.

ii. Chapter One establishes the thesis aim to address the gap in literature on co-designing policy with Aboriginal and Torres Strait Islander peoples. It also highlights the thesis aim to evaluate policy co-design contexts and mechanisms to draw out best practices. It outlines the research's significance in its potential to create culturally responsive policy to contribute to closing the inequitable gaps facing Aboriginal and Torres Strait Islander peoples.

iii. Chapter One delves into the largely unexplored potential of co-design in policy formulation, despite its widespread application in policy implementation. Following the PRISMA guidelines, it systematically reviews the existing evidence to reveal a scarcity of co-designed policies in high-income colonial-settler countries. It analyses four co-designed policies to uncover seven critical themes that provide policymakers with insights for genuinely involving 'end-users' in policy co-design. It illustrates that while co-design is not a universal solution, co-designing policy can shift entrenched power imbalances, amplify community voices, dismantle silos, and foster more inclusive decision-making – outcomes rarely observed in colonial-settler contexts.

Chapter Two

i. Chapter Two outlines the qualitative protocol for analysing policy co-design with Aboriginal and Torres Strait Islander peoples to distil evidence-based

insights to support policymakers and communities. It introduces the pivotal role of the Co-design Brains Trust, a group of Aboriginal and Torres Strait Islander peoples, as co-researchers in this study.

Chapter Three

i. Chapter Three explores the co-design process of the National Aboriginal and Torres Strait Islander Health Plan (NATSIHP) 2021-2031. It employs a realist evaluation to analyse Context-Mechanism-Outcome (CMO) configurations and produce a program theory. It highlights the imperative for stronger follow-through of policy implementation and accountability to ensure meaningful outcomes.

ii. Chapter Three presents Aboriginal and Torres Strait Islander peoples' deep and enduring connection to water, which has been disrupted since colonisation. It posits that while contemporary discussions increasingly acknowledge the importance of integrating Aboriginal and Torres Strait Islander knowledges into drinking water policy, the extent of Aboriginal and Torres Strait Islander influence on current policies remains largely absent. It employs a realist review to generate a program theory and a roadmap for engaging Aboriginal and Torres Strait Islander peoples in drinking water policy design at national, state and local government levels.

Chapter Four

i. Chapter Four presents a culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples. It is informed by

yarning, the evidence from Chapter Three and a framework synthesis drawing upon Humphrey et al.'s Aboriginal basket weaving framework (2023). The framework contributes to policy co-design's growing body of literature by integrating Aboriginal and Torres Strait Islander perspectives into policy design, to foster culturally responsive policies.

Chapter Five

i. Chapter Five centres a discussion on the framework's practical and theoretical significance, limitations and implications in a real-world policy context. It unpacks the framework's contribution to existing knowledge. It concludes with a summary of the thesis findings and future research opportunities for enhancing policy co-design with Aboriginal and Torres Strait Islander peoples.

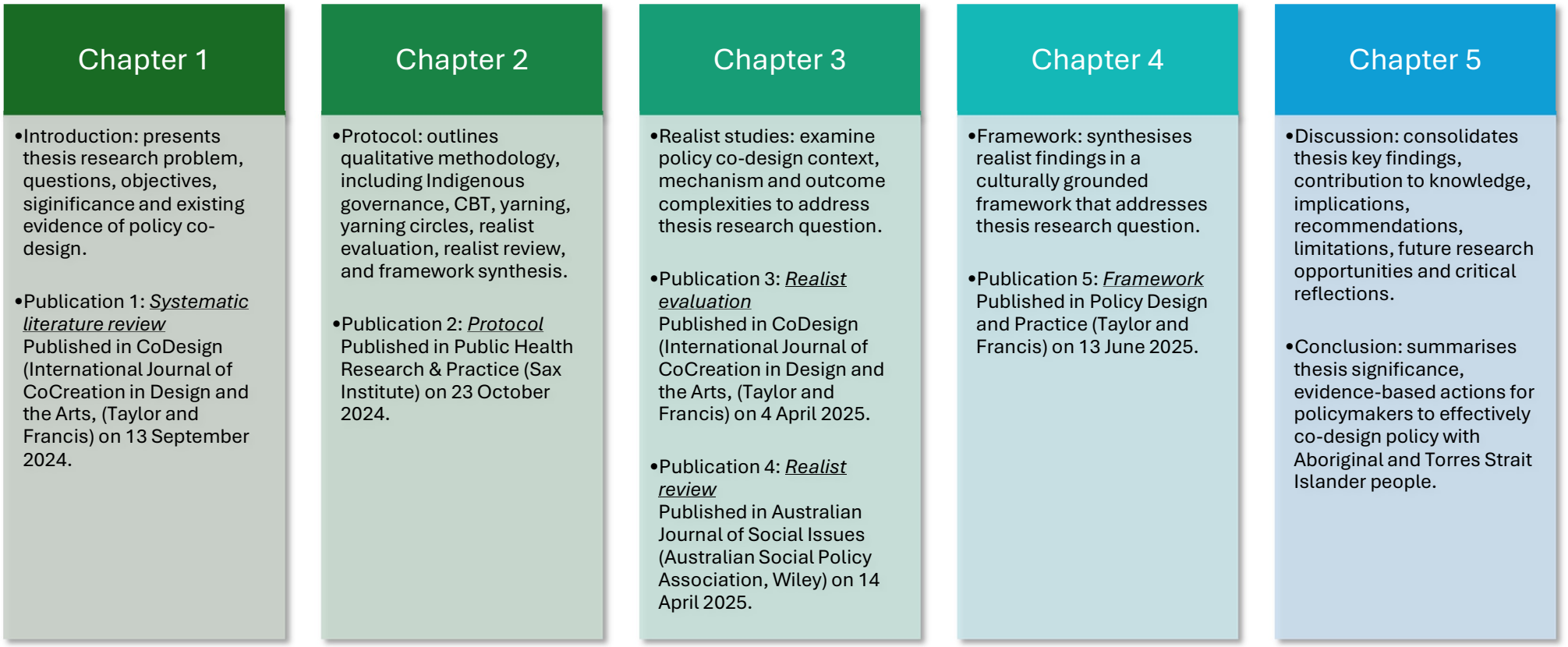


Figure 1. Thesis structure

Chapter One: Introduction

1.1 Background

Aboriginal and Torres Strait Islander culture

Aboriginal and Torres Strait Islander cultures are arguably among the globe's most profound, owing to a myriad of historical, spiritual and social organisation underpinnings. For instance, the history of Aboriginal and Torres Strait Islander customs represents one of the oldest continuous living cultures in the world [(1)]. It is estimated that these cultures have existed for over 65,000 years [(2)]. They reflect an esoteric connection to Country and a sophisticated understanding of its ecological systems.

Aboriginal and Torres Strait Islander peoples' spiritual bond to the lands, skies, waterways and seas is the collective expression of an ageless and intricate nexus, where diverse languages, customs and practices are tied to ancestral lands [(3)]. This worldview recognises the imperative to balance interconnected life forms within ecosystems [(4)]. This spiritual relationship mirrors the symbiotic link between the land and Aboriginal and Torres Strait Islander peoples' health and well-being [(5)]. Thus, Country is fundamentally intertwined with life and health outcomes for Aboriginal and Torres Strait Islander peoples [(6, 7)]. Rigby et al. (2011), portray this phenomenon with '... *if*

the land is sick, we're sick' [8, p. 249]. This inextricable link encompasses ancient Indigenous wisdom, that harmonises the environment with humanity [9].

Such wisdom is cultivated across a diverse cultural spectrum, where around 250 distinct Aboriginal and Torres Strait Islander nations have their own unique languages, protocols, connections to Country and knowledge and kinship systems [10]. Universities Australia articulates the significance of Indigenous '...*knowledge systems which are foundational and fundamentally important to Australia's intellectual, social and cultural capital*...' [11, p. 11]. Storytelling through yarning is a sacred oral communication pathway for intergenerational knowledge sharing through stories and songs [12].

Stories and songs are expressed differently across each cultural group, preserving a rich repository of law and lore through language, art and knowledge. Songlines are complex oral maps of the landscapes and skies which Aboriginal and Torres Strait Islander peoples express through song, story, art and dance [13]. Songlines are active and living, and physically and spiritually link Aboriginal and Torres Strait Islander peoples to their ancestors. Analogously, Aboriginal and Torres Strait Islander art embodies cultural expression and a technique for passing down knowledges, wisdoms and conserving historical events, emphasising the significance of culture and kinship [14].

Colonisation's impact on culture

Aboriginal and Torres Strait Islander traditions have been preserved since time immemorial [15]. They epitomise the enduring resilience of Aboriginal and Torres Strait

Islander ways of knowing, being and doing – particularly amidst the societal instabilities established by colonisation [7]. While Australia's democratic political framework has evolved to reflect the changing needs of its society, key colonial constructs existing within democracy have extended beyond British colonisation (1788). These include the hierarchical discourse reinforcing the privileging of colonial superiority over Aboriginal and Torres Strait Islander knowledges [16]. Wijensinghe (2020) describes how such colonial constructs permeate the modern societal and political structures imposed on Aboriginal and Torres Strait Islander peoples [16]. As a result, Aboriginal and Torres Strait Islander peoples navigate an unjust societal milieu that neither recognises nor respects cultural knowledges that have transcended millennia. Such marginalisation reinforces barriers to self-determination, cultural continuity and equity, all of which are fundamental determinants of quality of life for Aboriginal and Torres Strait Islander peoples [4, 5]. Thus, public policies and their underpinning societal systems have created inequities that unfairly place Aboriginal and Torres Strait Islander peoples at a disadvantage, with markedly lower life and health outcomes than non-Aboriginal and Torres Strait Islander peoples [5].

Public policy definition

This thesis situates public policy (hereinafter, referred to as 'policy') as a regulatory framework that governments use to govern, which culminates from complex decision-making involving many people intending to address a societal problem [17]. This definition draws from classical and contemporary sources. For example, Dye's (1976) widely cited work frames policy as '… *what governments do, why they do it, and what*

difference it makes…' [18, p. 635]. This explanation has been refined over the years. For instance, McConnell and 't Hart (2019) extend the concept of policy to encompass the inaction of governments. This inaction could be a government's strategic decision or an inability to respond effectively to a policy problem [19]. Also, the 'Australian Policy Handbook: A practical guide to the policymaking process' (2022) characterises policy as a set of decisions, actions, and plans that governments implement to generate solutions for societal problems [20]. Societal areas that policies directly influence include education, health, taxation, justice, welfare and the environment. Thus, virtually every dimension of human life is influenced by policy [21].

Policy impact on Aboriginal and Torres Strait Islander peoples

Policies configure frameworks for addressing societal issues. Thus, policies are pivotal to shaping the society that Aboriginal and Torres Strait Islander peoples, and indeed all Australians, traverse each day. Policies determine the approach, budget and stakeholders that are dedicated to tackling social problems. Thus, policies influence the life outcomes (e.g., educational, health, housing and environmental) that Aboriginal and Torres Strait Islander peoples experience. To illustrate, recent findings show that Australian drinking water policies have enabled 98% of the population to access clean and reliable drinking water sources [22, 23]. Nevertheless, the same policies have also led to over 400 communities lacking access to safe drinking water, with a significant proportion of these communities comprising Aboriginal and Torres Strait Islander peoples [22, 24]. This has severe and multifaceted (e.g., health, educational, environmental, social and economic) repercussions for these communities and the

broader society [25]. In comparison, Australia's Rent Assistance is a housing policy that subsidises rental payments for people on low incomes [26]. However, other housing policies give rise to substandard living conditions (e.g., overcrowding, utilities) that compound the disparities (e.g., social, health and developmental), rather than address the housing issues facing Aboriginal and Torres Strait Islander peoples [27, 28]. Therefore, policies significantly impact Aboriginal and Torres Strait Islander peoples, and policies intending to advance equity commonly coexist with policies that perpetuate disparities.

Harmful policies

The damaging impacts of historical and current policies are evident in the entrenched disadvantages facing Aboriginal and Torres Strait Islander peoples today. During colonisation, Australian policies disrupted cultural continuity by eroding Aboriginal and Torres Strait Islander peoples' connection to Country, kinship, community and families [29]. Such policies have caused immense devastation for Aboriginal and Torres Strait Islander peoples and the impacts continue to reverberate today.

Colonial assimilation policies that forcibly removed children (known as the 'Stolen Generations') from their families for nearly a century have deeply scarred Aboriginal and Torres Strait Islander peoples [30]. Understandably, disproportionately high rates of mental health issues in Aboriginal and Torres Strait Islander peoples can be linked to the intergenerational trauma and loss of cultural identity resulting from the Stolen Generations [31, 32]. Further, these traumatic experiences impact the economic impediments that Aboriginal and Torres Strait Islander peoples face today [33]. For example, the National Aboriginal Community Controlled Health Organisation

(NACCHO) describes the systemic obstacles Aboriginal and Torres Strait Islander peoples encounter in securing employment, land ownership and natural resources rights [28].

Similarly, modern policies have caused substantial harm to Aboriginal and Torres Strait Islander peoples. For instance, the 2007 Australian Northern Territory Emergency Response (NTER) (otherwise known as the 'Intervention') was a federal policy that set out to combat child sexual abuse in Aboriginal and Torres Strait Islander communities in the Northern Territory [34]. However, evidence shows that the NTER was developed with minimal consultation with Aboriginal and Torres Strait Islander peoples [34]. The NTER embodied excessively harsh punitive measures for Aboriginal and Torres Strait Islander peoples residing in a single Australian territory, the Northern Territory. The territory-wide intervention comprised of increased policing and military presence, income management (through quarantined welfare payments), alcohol and pornography prohibitions and suspending the Racial Discrimination Act [34, 35]. The Intervention violated human, Indigenous and self-determination rights [36] and was driven by a prominent deficit discourse of Aboriginal and Torres Strait Islander peoples in the media [34]. Despite its intentions, evidence illustrates how the NTER further entrenched injustices against Aboriginal and Torres Strait Islander peoples in the Northern Territory. For example, Aboriginal and Torres Strait Islander child protection cases more than doubled after the NTER [37] and Aboriginal and Torres Strait Islander children continued to be overrepresented in youth detention in the Northern Territory [38]. Further, the 2016-2017 Royal Commission into Northern Territory youth detention and child protection found systemic and shocking failures where children and young people were exposed to repetitive and sustained mistreatment from people employed

to care and protect them. A formal finding stated that '*A system was put in place built around a culture where little focus was placed on duty of care, respect and protection to the children and young people to whom it was owed.*' [38, p. 7].

These policy examples demonstrate how policy-driven harm is not confined to specific jurisdictions or historical periods. They highlight how similar mechanisms of control, surveillance and deficit framing continue to influence policy design affecting Aboriginal and Torres Strait Islander peoples. Together, these policies illustrate how inadequately informed approaches fail to address underlying social determinants while simultaneously reinforcing systemic inequities and eroding self-determination and cultural continuity.

Policy design

Although significant interest has traditionally focused on policy implementation, contemporary literature describes the growing emphasis on policy formation [39]. In Australia, policies developed across federal, state and local governments have distinct attributes inherent to each tier. However, most policies feature areas of jurisdictional overlap. For example, federal policies generally address national, international and cross-sectoral matters, such as foreign affairs, taxation, immigration and defence [40]. Such policies frequently require intergovernmental agreements, as state and local governments often implement national policies (e.g., housing, health) within their jurisdictions.

Comparatively, state parliaments design policies to tackle regional issues (e.g., health, education, transport and law enforcement). Developing state policies often warrants federal funding support and local government buy-in to sustain implementation. Comparatively, local councils develop policies focusing on community-specific issues (e.g., waste management and public infrastructure) [41]. While all policy domains differ in responsibility scope, the underpinning policy design processes are typically informed by the political environment, legal frameworks, stakeholder input and evidence-based research [42].

The Australian Policy Cycle (cycle) is a national framework that governments encourage public servants to use to develop policies in a logical and systematic way [20, 43]. The cycle's seven steps are 1. identify policy issue, 2. analyse policy issue, 3. design policy solution (including budgetary considerations), 4. consult with stakeholders on policy solution, 5. cabinet decides if policy is accepted, 6. implement policy, and 7. evaluate policy [20]. In practice, the cycle is iterative, and each step is interconnected. Bridgman and Davis (2003), the founders of the policy cycle, concede that while it is a formative tool to guide policymaking actions, it is not a universally applicable theory [44].

While the cycle represents the basic processes in policymaking at macro, meso and micro (or national, state/territory and local) system levels, it has garnered critique for its limitations. For example, Howard (2005) contends that the cycle can support policy development where diverse decision makers are involved, however, it should not be seen as a stringent blueprint [45]. Another critique is the cycle's ordering of 'consultation' as the fourth step. Positioning consultation this way highlights the delayed consideration of involving stakeholders in identifying and understanding policy issues.

It shows that this critical step is often taken after policy problem assumptions and key decisions have already been made.

Hunt and Smith (2007) illustrate the problems with involving key stakeholders too late (if at all) in the process of defining pertinent community issues and challenges [46]. They highlight how a public agency's failure to include, or delayed inclusion of, a community can undermine the community's trust, legitimacy and buy-in of the solution. Further, they also signify the imperative for Indigenous governance in Indigenous policymaking.

Colebatch (2020) elucidates the growing importance of government and non-government stakeholders' participation, which the cycle does not adequately reflect across its constructs [39]. Colebatch substantiates the powerful role of participation in contemporary policy design, despite policymakers not fully realising its utility [39]. Maddison and Denniss (2013) describe the complex interplay of '*...actors, politics and instruments...*' in designing and delivering policy [21, p. 1]. For example, policymakers are expected to strategically consider stakeholders' conflicting priorities, political pressures, budget limitations, tight timeframes and legal constraints. Maddison and Denniss (2013) also illustrate that while diverse (government and non-government) stakeholders can often contribute to policy design, the resultant policy is largely shaped by the political authority. This suggests that policy design is often contingent on government and bureaucratic decision-makers.

Head (2013) supports this assertion with his argument that non-government experts rarely influence policymakers to translate their rigorous findings into policy decisions, design and outcomes [47]. Head (2013) contends that '*policy ideas often lie on the shelf*'

and fail to meaningfully influence change [47, p. 397]. While modern policymaking recognises the need to seek insights outside of public administration (e.g., community knowledge and experiences), it is not widespread nor rapid enough [47]. Notwithstanding, Maddison and Denniss' (2013) and Head's (2013) rationales underscore the requisite for diverse voices to shape policy design and delivery. This notion is supported by Hussey and the International Association for Public Participation's 'Community Influence in Public Decision-Making' (2023) report, which emphasises the imperative for genuine engagement frameworks for public decision-making [48]. The report also illustrates the practical implications of meaningful, inclusive and ongoing engagement with communities. The rationale for these recommendations is to foster participatory processes that authentically reflect community needs and aspirations in public processes.

Participatory policy development

Policymakers recognise that the ever-growing complexity of societal issues demands innovative and out-of-the-box approaches to crafting fit-for-purpose solutions [49]. Although citizen participation in public administration is not novel, participatory policy design is still evolving and expanding [50].

Arnstein's Ladder of Citizen Participation (1969) is a highly regarded and widely cited seminal framework depicting a spectrum of power and decision-making authority [51]. The ladder's eight rungs represent a participation spectrum, with the lowest rung representing non-participation and the top rung representing citizen power. Each rung

also portrays a participating citizen's agency, control and power. By drawing attention to the distinctive nature of participation levels, Arnstein's Ladder of Citizen Participation has been extensively used to evaluate participatory activities and advocate for greater and more genuine citizen participation in policy development [52]. A United Nations (UN) technical report (2022) illustrates the significance of Arnstein's work in elevating a policy's legitimacy, robustness and community buy-in [53]. The UN's participation framework features Arnstein's work to highlight the requisite for enhancing policymakers' and participating citizens' knowledge and capacity to effectively and meaningfully collaborate in policy development.

Pahl-Wostel's (2002) widely cited research in environmental policymaking supports the UN's participatory objectives by emphasising the collateral gains of social learning for policymakers [54]. It also outlines the need for systems-level thinking to ensure diverse voices and knowledges (as divergent as they may be) within the social-ecological system are represented and reflected in policy development [54]. Notably, Edelenbos' (2006) widely referenced work illustrates the practical implications of including citizens in policymaking [55]. For example, citizen empowerment (e.g., shared decision-making), process flexibility (e.g., allowing adequate time for meaningful partnership), transparent decision-making and support for citizen involvement (e.g., remuneration) are key considerations for participatory policy design. Paul-Wostel and Edelenbos collectively illustrate the requisite for and implications of participatory policy development, to generate suitable policy objectives that are rooted in community needs and aspirations. This approach matters as it fosters transparency and

demonstrates community ownership over the policy's design and delivery, cultivating sustainable and community-driven change.

Broadly speaking, the rhetoric surrounding Indigenous policy advocates for self-determination as the gold standard approach [56], which resonates with Arnstein's upper rungs of Citizen control and Delegated power [57]. Despite this, evidence underscores the colonial discourses and attitudes within contemporary Indigenous policy frameworks [56, 58]. Thus, Indigenous policy design typically resides on Arnstein's lower rungs of Therapy and Informing, as engagement efforts are often infrequent, tokenistic and without substantive impact [56]. Consequently, culturally relevant expertise, knowledges and perspectives are not adequately shaping policy. This means that Aboriginal and Torres Strait Islander peoples have limited agency over the policies that affect their lives. As a result, Aboriginal and Torres Strait Islander peoples' trust and credibility in participatory initiatives (e.g., community consultations) are often blemished, as participatory approaches are usually exclusive and insincere. This reduces Aboriginal and Torres Strait Islander peoples' opportunity to inform culturally responsive approaches to addressing the root causes of societal issues. Thus, inequities facing Aboriginal and Torres Strait Islander peoples persist. Embedding diverse voices in policymaking lays the groundwork for this thesis. Specifically, this thesis explores the voices that should shape policy impacting Aboriginal and Torres Strait Islander peoples (i.e., not just Indigenous policy, but all policy), and how this can be done to foster culturally responsive policy.

Participatory policy design in practice

The Basin and vaping policy design processes exemplify participatory policy design in real-world settings in Australia.

The Murray-Darling Basin Plan's (Plan) major policy reform process [59] demonstrates the relevant communities' significant role in shaping the policy. The Murray-Darling Basin (Basin) is Australia's largest and most complex river system, spanning around one million square kilometres across Queensland, New South Wales, Victoria, Australian Capital Territory and South Australia [59, 60]. The Basin is a highly sought after water resource that impacts an intricate network of people, including over 50 Aboriginal and Torres Strait Islander nations [59]. It also sustains the surrounding wetlands, rivers, lakes, flora and fauna. The Plan sets out the Basin's water allocation framework which requires a coordinated effort between federal, state and local governments to ensure effective management of the Basin amidst environmental challenges (e.g., climate change). Thus, the Plan's design has relied on the Basin communities' continued involvement to inform a systematic and sustainable approach required for a healthy working Basin [59]. Community engagement has informed the Plan's design and implementation, and the upcoming evaluation.

Participatory policy design is also evident in the role that relevant community health organisations and advocacy groups played in shaping Australia's vaping policy. The Therapeutic Goods Administration (TGA) held public consultations on the proposed vaping reforms [61]. The consultations involved diverse stakeholders, including community health organisations and advocacy groups. The consultation insights

informed the vaping reforms which aimed to prevent children and young people from accessing vaping products. The consultations were held in compliance with Article 5.3 of the World Health Organisation Framework Convention on Tobacco Control which protected consultations from being influenced by the tobacco industry's commercial and vested interests [61]. This participatory approach fostered transparency and accountability for ensuring the community's interests remained the central focus of the consultations informing the vaping reforms.

Nogueira and Schmidt's work on co-designing sustainable and equitable food systems in Chicago [50] demonstrates collaborative and iterative policy design. Key stakeholders (including civil society representatives, food system practitioners, local advocates, policy actors and other community stakeholders) were directly engaged in the collaborations. This included identifying, defining and unpacking systemic challenges and prototyping potential interventions. Such collaborations allowed institutional assumptions to be questioned and local knowledge to inform solutions. The example illustrates that iterative prototyping with people impacted by the policy problem can enhance policy relevance and redistribute decision-making power, thereby grounding policy ideas in community experience.

Participatory policy design impacts

The National Agreement on Closing the Gap 2020 (National Agreement) exemplifies a major policy reform that was heavily reliant on community participation instruments in its design, implementation and evaluation [62]. The National Agreement's history is immensely complex and embodies a web of interconnected policies spanning all public

sectors affecting Aboriginal and Torres Strait Islander peoples. It stems from social justice campaigns and a succession of 'Bringing them home' reports (starting in the 1990s) which galvanised national awareness of the Australian Governments' role in the Stolen Generations [63, 64]. In 2007, Australian Prime Minister Kevin Rudd committed to address the 'Bringing them home' recommendations and close the socio-economic inequity gaps between Aboriginal and Torres Strait Islander peoples and non-Aboriginal and Torres Strait Islander peoples [63, 65]. Rudd's commitment was imperative in activating a national response to long-standing advocacy efforts (from 1960s) to address colonisation's damaging impacts on Aboriginal and Torres Strait Islander peoples' lives [66].

From the outset, critical policy design inefficiencies prevented earlier iterations of the National Agreement from realising the intended outcomes. The policy was predominantly designed by governments and without Aboriginal and Torres Strait Islander leadership, much less their participation [69, 70]. Like the NTER, this exclusion fostered distorted assumptions concerning the issues Aboriginal and Torres Strait Islander peoples face, leading to ineffective remedial approaches. For instance, early iterations disregarded culture's pivotal role in determining the socio-economic outcomes (e.g., health and well-being, education) of Aboriginal and Torres Strait Islander peoples [71]. This culturally irrelevant and uninformed mainstream approach to addressing Aboriginal and Torres Strait Islander matters overlooked the systemic changes needed to achieve true equity.

The Joint Council's establishment in 2019 marked a shift towards a shared decision-making approach in the National Agreement. The Joint Council leads the National

Agreement's implementation and comprises of Coalition of Peaks (an alliance of around 70 Aboriginal community-controlled organisations and senior Australian government representatives (federal, state, and territory)) [72]. This governance model fosters self-determination and accountability, and opposes ineffective traditional top-down decision-making mechanisms. The Joint Council inaugurated four priority reforms, revitalising governments' approach to implementing the National Agreement in partnership with Aboriginal and Torres Strait Islander peoples [68]. The priority reforms are: 1. Formal partnership and shared decision-making, 2. Building the community-controlled sector, 3. Transforming government organisations, and 4. Shared access to data and information at a regional level [68]. However, despite this renewed direction, the Productivity Commission's recent three yearly Review of the National Agreement highlights the deleterious repercussions of all governments' inadequate, inappropriate and untimely application of the priority reforms [73]. The review urges governments to fundamentally rethink its accountability mechanisms for sharing decision-making power with Aboriginal and Torres Strait Islander peoples [73]. This narrative conveys a practical lesson that inclusive policymaking is crucial for generating impactful outcomes for its beneficiaries and the Australian society at large. Inclusive policymaking can also reduce time and money wastage [74]. Studies point towards inclusive decision-making for decreasing costs as informed decisions are made on the basis of all impacted stakeholders' consensus [75]. Thus, by ensuring that policy design is widely consulted and informed, policymakers can precipitate timely, fit-for-purpose, sustainable and cost-effective policy instruments to address complex issues.

Co-design

This thesis adopts Sanders and Stappers' (2008) definition of co-design, as the creative collaboration of diverse experts (e.g., researchers, product end-users) in a design process [76]. This thesis also acknowledges Evans and Terry's (2016) work that signifies co-design's inclusive, human-centred and pragmatic tenets [77]. Co-design has gained popularity in the public service context and given rise to authors associating co-design in public administration with a frequently used 'buzz word' [78]. Nevertheless, contemporary literature points to co-design as a promising approach to integrating voices of people with lived experience in developing publicly funded services [79]. While co-design is growing in popularity and validity in the public domain, its origins can be traced to other sectors. This highlights the applicability of co-design principles across varied fields to produce common benefits. For instance, in the 1960s, Scandinavian corporations adopted co-design in the design and use of computer-based systems information technology product development [80]. Steen's highly regarded study shows how co-design provided end-users with a platform to influence product development, generate ideas, and achieve sustained customer satisfaction [81]. Similarly, in the 1970s, John Turner's resistance against top-down approaches to urban planning was influential in empowering community residents to inform architectural planning, design and management [82, 83]. This not only shaped a more inclusive discourse in architecture and urban planning, but also enhanced community agency over home design planning.

Co-designing with Aboriginal and Torres Strait Islander peoples

A surge in reports of co-designing with Aboriginal and Torres Strait Islander peoples signals this increasingly popular approach to incorporating multifaceted perspectives in implementing publicly funded activities [84]. This pluriversal approach challenges colonial methods by acknowledging and valuing multiple worldviews to enrich and broaden the collective understanding of a societal issue [85]. While Dias et al. (2024) emphasise the importance of self-determination in community-led co-design [86], evidence indicates ineffective co-design efforts are typically initiated and led by non-Aboriginal and Torres Strait Islander public servants [87]. Peters et al. (2018), labour the point that '*Participation is not enough*' and advocate for '*...Indigenous-led co-design*' [88, p. 97]. This signifies the increasing need for more community-led, inclusive and representative approaches to improving outcomes with Aboriginal and Torres Strait Islander peoples. It also highlights the need for clear and empirically grounded guidance for public servants pursuing this work.

The New South Wales Government's Aboriginal Affairs department (2021) presents a co-design definition and guide for '*Co-designing recommendations to government - getting it right*' [89, p. 1-3]. Although it focuses on how co-design can effectively inform developing and prioritising recommendations, greater accountability is required of governments to carry out the co-designed recommendations. Head's (2022) heavily cited research highlights governments' lack of follow-through in executing recommendations for addressing 'wicked' social problems [90]. An example of this is the Royal Commission into Aboriginal deaths in custody recommendations (1987-1991) [91] which remain largely unfulfilled. The failure to implement these recommendations has

contributed to the continued over-incarceration rates and deaths in custody [92]. Thus, evidence shows how Aboriginal and Torres Strait Islander peoples' invested efforts in co-designing meaningful recommendations are inadequately matched with the government's implementation of the recommendations.

Anderson et al. (2023) recently established key principles for co-designing health activities with Aboriginal and Torres Strait Islander peoples [93]. They underscore the imperative for community-led, culturally respectful, transparent, flexible, inclusive, collaborative and evaluable co-design approaches to co-designing health initiatives. They emphasise that co-design must be outcome-focused to effectively benefit Aboriginal and Torres Strait Islander peoples. Anderson et al.'s insights consolidate a culturally grounded way of co-designing health initiatives which resonates with the National Agreement's call for more meaningful partnership with Aboriginal and Torres Strait Islander peoples to transform governments' approaches to closing the gap. While pioneering, the pertinence of such principles in co-designing at the policy level remains uncertain. Underscoring this notion is King et al.'s (2022) research that calls for more robust evaluation of the equitable impacts of co-designing with Aboriginal and Torres Strait Islander peoples in Australian public health and disability landscapes [94]. Regardless, King et al. highlight the imperative for culturally safe and ethical co-design approaches involving Aboriginal and Torres Strait Islander peoples.

Policy design vs. policy delivery

Understanding the distinction between policy design and delivery definitions is imperative to grasping the nuanced co-design approaches employed across these different policy processes. Dryzek's (1983) widely cited definition of policy design as '*...the process of inventing, developing and fine-tuning a course of action with the amelioration of some problem...*' sets the scene for this thesis [95, p. 346]. Policy design involves multiple policy actors, such as politicians, policymakers, government and non-government subject matter experts. It typically occurs before policy implementation and identifies and analyses the policy problem, formulates policy objectives and develops a framework (including budget) to address the policy problem. In contrast, policy delivery encompasses the set of activities enacting and delivering policy objectives [96]. Policy instruments and bureaucratic mechanisms are leveraged to enforce, influence and accomplish policy objectives. Thus, the unique contribution of this thesis is its examination of co-design at the policy design phase. Since this thesis spotlights its focus on policy design's multifaceted dimensions, it renders policy delivery out of scope.

1.2 Research problem

Research question

Although the evidence supports public servants in co-designing policy delivery with Aboriginal and Torres Strait Islander peoples [84], there remains a notable gap in literature concerning co-designing policy development. This thesis seeks to address this gap by answering the question: *What is the evidence for co-designing policy with*

Aboriginal and Torres Strait Islander peoples and what evidence-based learnings can support policymakers and Aboriginal and Torres Strait Islander peoples in this fundamental process?

Research objectives

This thesis aims to clarify existing evidence, evaluate policy co-design effectiveness and highlight best-practice to equip policymakers and Aboriginal and Torres Strait Islander peoples.

Significance

This thesis contributes to the scholarly work of Blomkamp [79], and Dillon [97], by presenting a novel framework that supports their claims of the potential for co-design in policy development. Blomkamp (2018) defines policy co-design as a set of processes, principles and practical tools that empower affected individuals to actively engage in designing suitable policies [79]. Blomkamp claims that despite the strong advocacy for policy co-design, the policy co-design process itself is poorly documented. Correspondingly, while Dillon (2021) signals the potential for policy co-design, he outlines four key challenges associated with policy co-design in an Indigenous policy domain, namely:

i. Policymaker-dominated decision-making power limits Aboriginal and Torres Strait Islander peoples' influence in policy co-design (and subsequent policy delivery and evaluation),

ii. Narrow or non-representative input of Aboriginal and Torres Strait Islander peoples simplifies and diminishes the richness of diverse perspectives,
iii. Policymakers often involve Aboriginal and Torres Strait Islander peoples in co-design efforts (e.g., program or service delivery implementation) that influence small and incremental change, instead of efforts enacting much-needed systemic change, and
iv. Inadequate investment is allocated to sustaining Aboriginal and Torres Strait Islander peoples' meaningful involvement in policy co-design [97].

This research's significance lies in the advancement of knowledge in co-designing culturally responsive policy with Aboriginal and Torres Strait Islander peoples. It also aims to contribute to implementing the National Agreement by presenting valuable insights into the context, mechanisms (including enablers and barriers), impacts and outcomes of co-designing policy with Aboriginal and Torres Strait Islander peoples.

1.3 Evidence

We undertook a systematic literature review to explore the evidence for co-designing policy with priority populations in high-income colonial settler countries to better understand the landscape of our research question. The systematic literature review sets out to understand whether and in what way policies have been co-designed with priority populations in high-income colonial settler countries. It focuses on priority populations in high-income colonial settler countries to derive comparable insights from population groups facing similar disadvantages to Aboriginal and Torres Strait Islander peoples, as a result of colonial policy design.

The findings reveal a significant literature gap and emphasise the need for further investigation into co-designed policy to better understand policy co-design nuances. The systematic literature review is a publication titled 'Co-designing public policy in high-income colonial-settler countries – a systematic review'. It was published in CoDesign, (International Journal of CoCreation in Design and the Arts, Taylor and Francis) on 13 September 2024 (doi: https://doi.org/10.1080/15710882.2024.2395359). CoDesign (International Journal of CoCreation in Design and the Arts, Taylor and Francis) authorised the inclusion of this open access article in this thesis.

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Co-designing public policy in high-income colonial-settler countries – a systematic review

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ABSTRACT

While co-design has become ubiquitous in policy implementation, its potential for policy design remains to be investigated. In accordance with the PRISMA guidelines, this article systematically reviews the evidence to uncover a dearth of co-designed policies in high-income colonial-settler countries. Notwithstanding, the four co-designed policies illustrate seven critical themes that offer policymakers ideological considerations when facilitating the authentic involvement of 'end-users' in policy design. Though co-design is not a panacea, this review demonstrates how the embedment of co-design in policy design mechanisms can address entrenched power imbalances, empower community voices, wear down silos, and pull up more relevant seats to the decision-making table – phenomena uncommonly found in colonial-settler contexts. Further research is needed to understand the benefits, risks, and impacts of co-designed policies and practical implications for policymakers that operate within constrained landscapes to enable genuine participation of intended beneficiaries in policy design.

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Co-design; public policy; Aboriginal and Torres Strait Islander peoples; colonial

1. Introduction

1.1. Background

The complexity of modern-day problems emphasises the need for public policy design mechanisms that better incorporate the perspectives and needs of its target populations. Poor policy design has been attributed to many factors such as policymakers' siloed and disparate interests (Feuerstein-Simon et al. 2020) and linear and reductionist approaches (Mueller 2020). Such methods can give rise to frameworks that misalign with contextual realities. Similarly, policy alienation (a disconnect between the policy and its implementation) (Tummers 2012) and deficient evaluation (McConnell 2010) have been linked to outcomes that miss the mark.

Consequently, effective policy design approaches are needed to better align policy design with its intended implementation and outcomes (Howlett and Mukherjee 2018;

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Van Geet et al. 2021). In hopes to produce improved outcomes, some leaders are looking beyond bureaucratic conventions to reimagine their policy design mechanisms (McGann, Wells, and Blomkamp 2021). Such decision-makers understand the requisite to harness the insights of the policy's intended beneficiaries in the design process (Greenhalgh and Papoutsi 2018).

In a policy context where innovation is essential to driving lasting change, co-design offers a new way to understand and address complex problems together with target populations (Sanders and Stappers 2008; Trischler and Charles 2019). Simply put, co-design is a process that involves end-users (e.g. of a service, product, or policy) in the problem identification and solution design process (Burkett 2012). By sharing decision-making power with end-users, co-design cultivates a deeper appreciation for and understanding of the perspectives of all stakeholder groups that are impacted by a problem (Burkett 2012; McKercher 2020). By creating deeper insights into the problem and relevant solution(s), evidence illustrates how co-design has given prominence to sustainable, relevant, appropriate, prudent, and considered solutions to address complex problems (Deserti, Rizzo, and Smallman 2020; Voorberg, Bekkers, and Tummers 2015; Whicher and Crick 2019). Thus, the growing interest in co-design has seen a surge in co-designed services in recent years, accompanied by co-design guidelines, tools, and frameworks that are mostly found in the grey literature (Bawden and Edwards 2018; Blomkamp 2018; Hoolohan and Browne 2020).

The origins of co-design can be traced back to the 1960s, where Scandinavian employers adopted co-operative methods to involve users of their technology in the product design process (Sanders and Stappers 2008). Over time, such co-operative methods have evolved throughout the corporate sector to meet the ever-changing needs of end-users across many domains such as architecture and healthcare (Sanders and Stappers 2008). Thus, various user-involvement or participatory design methods have transpired as a by-product of the realisation that including end-users in the design process can optimise efficiency, adaptability, and innovation in product development. While their similarities often entwine participatory approaches in this design landscape, subtle features of each method distinctly set them apart. For instance, while co-design, co-creation, and co-production seem interchangeable, the extent and timing of their user-involvement distinguishes each approach (Vargas et al. 2022).

While the literature does not indicate that co-design is the answer to all policy problems, the evidence of co-designed services highlights certain benefits. For instance, co-design has been described as a time-consuming, resource-intensive, confronting, and '*messy*' undertaking, yet McKercher (2020) describes how collectively working through these challenges can precipitate '*… better programs, services, policies and systems*' (Burkett 2012; Lam et al. 2018; McKercher 2020). For example, contrary to relying on governing bodies and service providers to resolve social problems, co-design can promote shared ownership of a problem and solution by enhancing community participation throughout the co-design process. This can give rise to community buy-in and commitment (McKercher 2020). By building the capacity for people with lived experience to contribute their knowledge, co-design can foster a greater awareness of the diverse perspectives of a problem and thus a more considered solution (McKercher 2020). Through iterative design and prototyping, co-design has been shown to optimise efficiency and fit-for-purpose outcomes (Hoyer et al. 2010). Collective and iterative prototyping (design, testing, and refining) can ensure that end-user perspectives are integrated

into each phase of the service or product development, optimising resources and efficiencies (McKercher 2020). Co-design is not seen as a one-size-fits-all approach, rather it comprises a growing suite of methods that are underpinned by shared decision-making principles. Further research is needed to understand how co-design principles (e.g. shared decision-making power and inclusive, ongoing, and meaningful collaboration) can be transferred, adapted, and embedded into policymaking.

1.2. Evidence of co-design in public policy development

For the most part, the evidence of co-design can be found in policy implementation, where studies have described the process and impacts of co-designed interventions, services, projects, and programs. On the other hand, little is known about co-design in policy development (Blomkamp 2018). Consequently, it is unclear whether the findings from co-designed services can be transferred to a '. . . *higher policy level*' (Tonurist, Kattel, and Lember 2015). Thus, this systematic review sets out to fill this gap by exploring the evidence of co-design in the development of policy and deliver a comprehensive overview of the available evidence.

1.3. Systematic review

In this study, the best available evidence is systematically examined to understand if and how co-design has been integrated into policy design processes. Analysing literature from such contexts can build a more nuanced understanding of specific priority populations that experience deep and persistent disadvantage as a direct consequence of colonialism (Australian Institute of Health and Welfare 2022) and how they have co-designed policy with policymakers. Thus, this review focuses on co-designed policy with priority populations in high-income colonial-settler countries.

2. Methods

2.1. Review questions

By compiling, analysing, and learning from the evidence for co-design in policy, this systematic review sets out to answer the questions outlined in Box 1.

Box 1. Review questions

(1) What is the evidence of co-design in policy development in high-income colonial-settler countries?
(2) What are the characteristics, enablers, and barriers of effective co-design in policy?
(3) What are the outcomes of co-designed policies?
(4) Is there a difference in outcomes for co-designed and non-co-designed policies?
(5) What does the evidence from this review tell us about co-designing policies?

2.2. Design

This systematic review was registered with PROSPERO International prospective register of systematic reviews (ID: CRD42022350987). A systematic literature search was carried

out using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement guidelines (Moher et al. 2009).

2.3. Search strategy

The search strategy was predicated on answering the review questions and comprised of three key elements, namely (Feuerstein-Simon et al. 2020): co-design (exclusively, i.e. not including closely related terms) (Mueller 2020), public policy design (and only closely related terms), and (Tummers 2012) high-income colonial-settler countries and related terms.

The search was conducted during in September 2022. For academic literature, six databases were searched: MEDLINE, Embase, Scopus, Web of Science, CINAHL, and Informit. Informit incorporated 14 databases in the search, including: A+Education, AGIS Plus Text, Asia Collection, Australian Public Affairs (APAFT), Business Collection, EduTV, Engineering Collection, Families & Society Collection, Health Collection, Humanities & Social Sciences Collection, Indigenous Collection, Literature & Culture Collection, New Zealand Collection, and TVNews. These databases were chosen to yield a comprehensive and relevant set of results.

2.4. Search terms

The following search terms were constructed and formed the following search string: '(codesign or co design or co-design)' AND 'public policy/or family planning policy/or health policy/or health care reform/or nutrition policy/or public non-discrimination policies/' OR '((social or health or public or nutrition) adj polic*)'.

The search terms were combined and adapted for each database. Papers were excluded with reasons if they did not address co-designed policy in high-income, colonial-settler countries.

2.5. Eligibility criteria

2.5.1. Inclusion criteria

Papers were included if they were 1. peer-reviewed, 2. published between 2012 and 2 September 2022, 3. based in a high-income colonial-settler country setting, and 4. able to clearly identify co-design within a public policy design process. Public policy is a broad concept that has been defined in many ways. This study uses the definition of public policy as a system of laws to address a problem, that is designed and enforced by public agencies (Hill and Hupe 2002).

2.5.2. Exclusion criteria

Papers were excluded if they 1. only featured co-design in processes other than the public policy design (e.g. co-design in service delivery, initiatives, programs, projects, and interventions), 2. were published in languages other than English, and 3. related to countries other than high-income colonial-settler countries.

To yield specific examples of co-designed public policies, only studies that used the term 'co-design' were included. Studies that used other terms that have become synonymous with co-design (e.g. consultation, participatory, and human-centred) were excluded because they denote other participatory-design processes.

2.6. Grey literature search

Since co-designed public policy is a niche area and more prevalent in grey literature than academic studies (Blomkamp 2018), the authors exhausted various grey literature sources to extract evidence pertaining to all ministries and levels of government (i.e. local, state, and federal).

A grey literature search used the following search strategies to exhaust all possible resources and reduce the risk of overlooking relevant sources (Feuerstein-Simon et al. 2020): grey literature database (e.g. https://apo.org.au/.) (Mueller 2020), targeted websites (e.g. https://alga.com.au/.; https://www.health.gov.au/health.; https://www.infrastructure.gov.au/.; https://natlib.govt.nz/.;) (Tummers 2012), customised Google search engine (e.g. 'co-design site:gov.au'), and (McConnell 2010) consultation with local co-design practitioners (working in universities, government agencies, and private entities), and policymakers.

2.7. Screening

The lead author (MF) carried out and recorded the stepwise screening process using Microsoft Excel. Duplications and pre-2012 publications were removed from the remaining papers using EndNote (EndNote Team T 2020). The lead author (MF) screened the article's titles and abstracts against the eligibility criteria. The full text of the remaining articles was reviewed to assess eligibility and discrepancies were resolved by consensus by the lead author and a second author (MF and KG).

2.8. Data extraction

A data extraction table developed by the lead author was reviewed by two other authors (KG and BR). The following characteristics were extracted from the final articles to populate the data extraction table: authors, publication date, country, policy details, target population, study design, co-design characteristics (features, barriers, and enablers), co-design impacts and outcomes, limitations, and main conclusion. These data were extracted by the lead author and checked by a second author (BR).

2.9. Quality assessment

The selected papers were analysed using the Joanna Briggs Institute Critical Appraisal tools for use in JBI Systematic Reviews Checklist for Qualitative Research (Institute JB 2017). Two authors (MF and BR) selected the JBI appraisal tools to assess each papers' trustworthiness, relevance, and results. All authors assessed each included paper as outlined in Appendix A. MF assessed the papers independently before reviewing and

comparing the findings with two authors' (BR and KG) assessments. A final determination was made about the included studies and consensus achieved through discussion.

2.10. Thematic analysis

Themes were developed inductively by (Feuerstein-Simon et al. 2020): familiarisation with each study (Mueller 2020), coding of significant points of interest (Tummers 2012), iterative grouping of coded points (McConnell 2010), generating themes for each code group, and (Howlett and Mukherjee 2018) theme review, naming, and definition. Doubts between the authors were resolved by group discussion until consensus was reached. As an esteemed Aboriginal Elder, KG's perspective was respectfully privileged throughout the process.

3. Results

3.1. Paper selection

The initial search resulted in 530 records which were uploaded onto Endnote. After removing 109 duplicates and 22 pre-2012 publications, 399 records remained. Throughout the title and abstract review, 380 papers were excluded as they were either: 1. not set in a high-income country, or 2. did not explicitly mention co-design in a public policy design process, or 3. only described co-design in a public policy implementation process (e.g. service delivery). The full text of the remaining 19 papers were reviewed, of which 17 were excluded as they were either: 1. not set in a high-income country, or 2. did not clearly show examples of co-design in a public policy design process. Thus, 2 peer-reviewed studies were included in this review.

The grey literature search strategy yielded four potentially relevant items for screening. Two items were excluded as one did not publish the co-design processes behind the policy design and the other's policy design process was incomplete at the time of the search. Thus, two relevant grey literature reports were included in this review.

To differentiate between both types of included papers, henceforth, the included peer-reviewed studies will be referred to as 'study/studies', and grey literature reports will be referred to as 'report/reports'.

The paper inclusion process is shown in Figure 1, the PRISMA Flow Chart.

3.2. Included papers characteristics

Key data were extracted from each selected paper, as outlined in Table 1.

3.3. Thematic analysis

Four themes emerged from the included papers, namely (Feuerstein-Simon et al. 2020): complex policy problem (Mueller 2020), conditions for effective co-design of public policy (Tummers 2012), collaboration across conventional boundaries, and (McConnell 2010) barriers to effective co-design of public policy. These themes were drawn from the description of the co-design processes in all papers. Three additional themes emerged

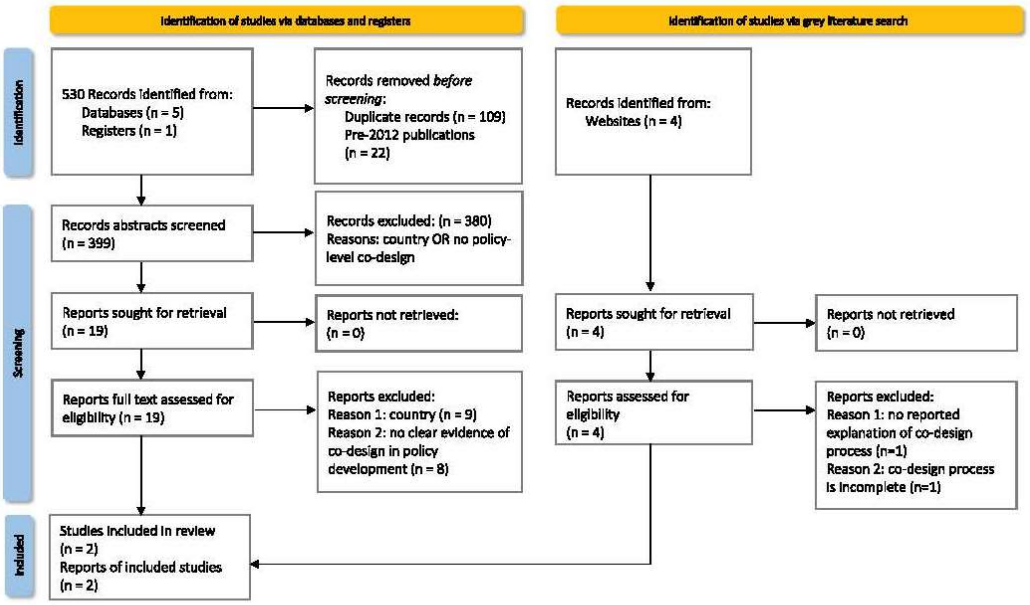


Figure 1. Preferred reporting items for systematic reviews (PRISMA) flow diagram.

Table 1. Summary of included papers.

Publication title	Authors	Year of publication	Summary	Location
Cocreating evidence-informed health equity policy with community	Walker, S. C., White, J., Rodriguez, V., Turk, E., Gubner, N., Ngo, S., Bekemeier, B.	2022	Case study: co-designing health equity policy options	Pierce County (Washington, USA) ~900,000 residents
Co-producing evidence-informed criminal legal re-entry policy with the community: an application of policy codesign	Owens, M.D., Ngo, S., Grinnell, S., Pearlman, D., Rosa, S., Bekemeier, B., Walker S. C.	2022	Case study: co-designing jail-based re-entry policy for adults with opioid use disorder	a rural county in Washington (USA) ~75,000 residents
National Aboriginal and Torres Strait Islander Health Plan	Australian Government, Department of Health	2021	A co-designed national health plan to deliver health services for Aboriginal and Torres Strait Islander people	Australia ~984,002 Aboriginal and Torres Strait Islander residents (abs.gov.au.)
Child and Family Support System	Government of South Australia, Depart of Human Services	2019	A co-designed state child protection system	South Australia `1.76 million residents (abs.gov.au.)

from the grey literature reports, namely (Howlett and Mukherjee 2018): empowering the voices of people with lived experience (Van Geet et al. 2021), genuine shared decision-making, and partnerships and (McGann, Wells, and Blomkamp 2021) accountability and evaluation. These themes were elicited from the reports' contents, particularly the preliminary sections which presented the case for the co-design approach in each respective setting. A summary of the thematic analysis is outlined in Table 2.

Table 2. Thematic analysis summary.

Theme	Findings
1. Complex policy problem	Co-design can be used to address complex policy problems that involve multiple stakeholder groups.
2. Conditions for effective co-design of public policy	Co-design requires inclusivity, political climates amenable to sharing decision-making power, early and ongoing commitment of all co-design participants and cultural awareness.
3. Collaboration across conventional boundaries	Co-design bridges the insights of policymakers, people with lived experience, researchers, subject matter experts and cross-sectoral stakeholders – alike.
4. Barriers to effective design	Co-designed efforts can be hindered by compressed timeframes, inequitable access to co-design workshop platforms (e.g. Zoom), lack of consideration for policy implementation resources and sustainability, siloed communication and short-lived dialogue.
5. Empowering the voices of people with lived experience	Policymakers that use co-design recognise that people with lived experience have a better understanding of their needs than anyone else. Thus, the voices of people with lived experiences are privileged throughout the co-design process. Empowering such voices can help participants learn about diverse perspectives. This may require participants to self-examine their biases, power and status, which can be a discomforting and tense experience.
6. Genuine shared decision-making and partnerships	Co-design addresses enduring power imbalances and signals a shift from top-down decision-making to genuine and shared decision-making. Authentic partnerships can help to progress discussion towards action and strengthen relations beyond the policy design process.
7. Accountability and evaluation	Co-design champions early consideration and ongoing assessment of accountability and evaluation to track and measure the policy's progress.

3.4. Research questions

Table 3 outlines the answers to the review questions in Box 1. Notwithstanding the scant evidence, useful findings were drawn from the included papers to answer the review questions.

4. Discussion

The seven themes identified in this review provide important guidance for policymakers.

4.1. Theme 1: complex policy problem

Both peer-reviewed studies analysed co-designed public policies that aim to address complex social problems. Study one explored the prioritisation process for health equity policies in a county in Washington with a population of around 900,000 residents (Walker et al. 2022). Study two examined a jail-based re-entry program for adults with opioid use disorder, in a rural county in Washington with a population of around 75,000 residents (Owens et al. 2022). Both contexts comprised a multitude of stakeholder groups that were impacted by the complex problems, namely target populations (study 1: community residents from health vulnerable groups, study 2: adults with opioid use disorder), policy-makers, researchers, government agencies, non-government service providers, the local community, and society at large.

Similarly, both reports were set in multifaceted contexts with cross-sector interdependencies. Report 3 was a policy, titled: '*National Aboriginal and Torres Strait Islander Health Plan 2021–2031*' (Australian Government 2022). It contributes to the overarching National Agreement on Closing the Gap (Australian Government 2020). Report 4 was a policy, titled: '*Co-design Findings and Next*

Table 3. Answers to review questions.

Review question	Evidence
1. What is the evidence of co-design in public policy development in high-income colonial-settler countries?	The review found evidence of co-design in public policy in high-income colonial-settler countries in two peer-reviewed studies and two published grey literature reports. The dearth of evidence, coupled with the recency of the included papers (2019–2022), signifies the novelty of co-design within public policy.
2. What are the characteristics, enablers, and barriers of effective co-design in public policy?	*Characteristics*: complex policy setting, numerous stakeholder groups, numerous perspectives of policy problem, political context that enables the sharing of decision-making power, collaborative dialogue and listening, challenged assumptions and biases, new learning/understanding of policy problem, creative and relational processes, prototyping, research (e.g. literature reviews) *Enablers*: inclusivity, privileging voices of people with lived experience, shared-decision-making power, genuine partnerships, commitment and buy-in of co-design participants, funding (e.g. hire co-design facilitator, workshop setup), collaboration beyond co-design process, early established accountability and evaluation strategy, culture-informed processes *Barriers*: compressed timeframes, linear, siloed and disjointed thinking, virtual-only communication mechanisms, inequitable access to digital technology, policy alienation, addressed power imbalances, political contexts that are unamenable to sharing decision-making power, siloed, disjointed and non-transparent communication
5. What are the outcomes of co-designed public policies?	Considered, holistic and fit-for-purpose policy design, deeper understanding of the problem for all participants, informed accountability and evaluation strategies, innovative funding models to sustain policy objectives, shared decision-making power, framework to address systemic barriers, sense of community-ownership, radical shift of mindsets (e.g. requirement of '*. . . mainstream services to address racism and provide culturally safe and response care . . .* ' (Australian Government 2022, 3))
6. Is there a difference in outcomes for co-designed and non-co-designed public policies?	The review did not find comparative studies that examined the difference in co-designed and non-co-designed public policies. Further research could explore such comparisons.
7. What does the evidence from this review tell us about co-designing public policies?	Refer to Discussion

Steps. Child and Family Support System. June–October 2019' (Government of South Australia 2019). It comprised seven shared directions, between numerous government and non-government stakeholder groups, that worked towards keeping children '*. . . safe and well at home in family, community and culture*' (Government of South Australia T 2022). Both reports outlined how each policy's respective vision, strategy, roles, and responsibilities, implementation plan, accountability, and evaluation framework were co-designed.

4.2. Theme 2: conditions for effective co-design of public policy

All papers emphasised how embedding inclusivity within each policy development phase enabled their co-design efforts. Inclusive elements comprised a shared understanding of the policy problem, funding (e.g. to remunerate participants, hire co-design facilitators,

run listening sessions, commission researchers), community buy-in throughout and beyond the co-design process, and shared decision-making power (e.g. with service providers and community), and the policymaker's readiness to accept non-conventional sources of evidence (e.g. community voices).

Both studies also acknowledged that the appetite for co-designing public policy will vary from place to place. Some political climates are more amenable to sharing decision-making power with communities than others. Study 1 described its political climate as '*. . . friendly to community-engaged approaches*' (Walker et al. 2022, 145). Similarly, report 3 described the imperative for Aboriginal and Torres Strait Islander peoples' to '*. . . make decisions on matters that affect their lives and communities*' (Australian Government 2022, 3).

Comparatively, both reports suggested that an early and ongoing commitment of all co-design participants was a fundamental enabler for co-designing policy. The reports indicated that the commitment was foreshadowed by a shared understanding of, and agreement with the expectations of co-design participants.

Report 3 illustrated how co-designing policies with Aboriginal and Torres Strait Islander peoples cannot '*. . . occur in the absence of culture*' (Australian Government 2022, 19). By recognising that the cultural determinants of health are the '*. . . protective factors that enhance resilience, strengthen identity and support good health and wellbeing*' (Australian Government 2022, 18), this policy set out to galvanise the celebration of and connection to culture, community, and country. Thus, it asserted that a '*culture-in-all-policies*' ethos required system-level reform, where cultural and social determinants are embedded within all levels of government and service provision for Aboriginal and Torres Strait Islander peoples.

4.3. Theme 3: collaboration across boundaries

Both studies described how the respective pre- co-designed settings embodied '*top-down*' policymaking (Owens et al. 2022, 359), where decision-making power was held by people that were proximally distanced from the policy problems. Such settings typically resembled linear thought processes, enduring biases, ill-informed beliefs, flawed assumptions and a discrediting of research and social knowledge as reliable sources of evidence.

Correspondingly, both studies pointed to a deliberate move from the confined parameters of bureaucracy towards a '*ground up*' (Owens et al. 2022, 359) inclusion of community and service provider participation. Thus, non-conventional sources of evidence were integrated into the policy design process. Both studies illustrated how this shift towards a community-centred approach broadened the decision-making frame and precipitated transparency, visibility, and buy-in.

Similarly, both reports recognised the need for dialogue with relevant actors outside of their respective sectors, to better understand their targeted populations' experiences with other service touchpoints and interface implications. For example, report 3 listed non-health government, non-government, and community agencies (e.g. disability, mental health, and aged care) as key partners to inform a wholistic policy that better meets the cultural, social, and health needs of Aboriginal and Torres Strait Islander peoples. Report 4 signified the importance of working together with the government and non-government agencies '*. . . to keep children safe at home, in community and culture*' (Government of South Australia 2019, 24).

4.4. Theme 4: barriers to effective co-design of public policy

All papers alluded to the failure of the former respective policies to integrate policy implementation and evaluation measures into its design, which led to policy alienation. Thus, not considering the human and financial resources required to deliver the policy can nullify co-design efforts. By recognising the imperative for continual collaboration beyond the policy design phase, all papers demonstrated a change from transactional to transformational approaches that prioritised strong relationships between all co-design participants.

Both studies listed compressed timeframes as a key limitation to their co-design efforts. Both studies highlighted how the short timeframes imposed practical limitations to include fully representative community voices at each stage of the co-design process. For example, the first study did not involve community participants in a rapid literature review which informed the policy prioritisation measures. By not including all stakeholders in this step, an opportunity to encompass a more expansive range of perspectives in the policy priorities was missed.

While both studies articulated the preference for in-person workshops, online workshops via Zoom became an agreed option due to the COVID-19 pandemic's social distancing implications. Choosing to gather evidence via online methods excluded the perspectives of people that were unable to participate in this way.

While both reports did not distinctly point out the limitations of their co-design processes, they outlined specific practices that could impede their co-design efforts. For example, report 3 described how siloed, disjointed, and non-transparent communication violates the policy's holistic health and well-being principles. The report demonstrated how the former (*non-co-designed*) iterations of the policy have constructed enduring false assumptions about many aspects of Aboriginal and Torres Strait Islander peoples' health. For instance, the report urges the health system to '*. . .recognise and embed holistic health and wellbeing*' by addressing '*. . .mental, physical, cultural, environmental, and spiritual health . . . more broadly*' (Australian Government 2022, 18). Similarly, report 4 explained how their co-design endeavours cannot be a simple '*one-off conversation*' (Government of South Australia 2019, 26). Rather, an ongoing and coordinated dialogue between all stakeholders was needed beyond the co-design process, to cultivate new learnings that foster better and sustainable outcomes for children and their families. The policy exemplified how ongoing and inclusive dialogue could uncover gaps in the welfare system and better trauma-informed frameworks for children and their families.

4.5. Theme 5: empowering the voices of people with lived experience

Both reports reinforced that empowering the voices of people with lived experience was essential to precipitating real change. Both reports also indicated the need for all co-design participants to continually self-examine their biases, power, and status. In the same way, listening (to Aboriginal and Torres Strait Islander peoples, report 3 and children and their families, report 4) was described as an integral part of this process. Concurrent listening and responding to such voices were shown to disrupt strongly held beliefs, which created discomfort and tension for some participants. This was illustrated in report 3 which outlined how '*. . . true change exists within discomfort, and progress is made when all parties are open to listening and responding*' (Australian Government 2022, 18).

Both reports highlighted the shared vision between the governing bodies and their targeted population groups (report 3: Aboriginal and Torres Strait Islander peoples, report 4: children and families residing in South Australia). By doing this, the governing bodies behind both reports acknowledged that people with lived experience have a better understanding of their needs than anyone else. Thus, these voices were deliberately privileged in the policy design and implementation processes. Both reports outlined the various methods they embraced to meaningfully include the voices of people with lived experience and their broader communities (e.g. digital technology, state-wide travel, visits to remote areas). Report 3 encompassed a strengths-based and human rights approach to empowering Aboriginal and Torres Strait Islander peoples' voices and embedding cultural and social determinants of health throughout the policy design and implementation. Both reports gave precedence to this approach as a means to creating meaningful and sustainable change, informed by people with lived experience.

4.6. Theme 6: genuine shared decision-making and partnerships

Study 2 described how building genuine relationships and sharing the ownership of local solutions can enhance a plan's implementation and sustainability (Brown and Wyatt 2010; Donetto et al. 2015; Greenhalgh and Papoutsi 2018). Both reports also highlighted the fundamental need for prevailing power imbalances (between governing bodies, service providers, and target populations) to be addressed, as early as possible. Report 3 describes its intention to '*... shift from a top-down approach to working in genuine partnership*' (Australian Government 2020, 9). Premised on the concept that '*everybody has a role to play*' (Australian Government 2020, 9), both system-level policies were hinged on strong partnerships between all key stakeholders across each respective system. Thus, to share decision-making across different stakeholder groups, both policies were underpinned by inclusive, wholistic, and integrative collaboration. Consequently, the risk and workload were shared across multiple stakeholders and buy-in was elevated throughout both systems. People involved in both co-design processes reflected on the imperative for authentic partnerships across the system. Genuine partnerships were depicted as a way to build a more sophisticated understanding of everybody's perspective and progress '*mere talking*' towards action. Cognisant of the enduring and evolving nature of each policy context, both policies indicated the need for co-design to be integrated throughout future iterations of the policy design and implementation processes.

4.7. Theme 7: accountability and evaluation

Report 3 described how entrenched barriers in the public system have hindered the progress of former policy iterations. For example, systemic racism (throughout local, state, and national institutions) was said to have hampered the rights of Aboriginal and Torres Strait Islander peoples' self-determination, to practice culture and make decisions on matters that affect their lives and communities. Thus, transparent accountability and evaluation frameworks, based on Aboriginal and Torres Strait Islander governance mechanisms, were championed in the policy. These frameworks were depicted as an approach to remove systemic barriers that deny Aboriginal and Torres Strait Islander peoples of good health outcomes. In essence, policy design and implementation were informed and driven by national, state, local,

and place-based Aboriginal and Torres Strait Islander organisations and communities in partnership with all (Indigenous and non-Indigenous) '*. . . health service providers, organisations and regulators*' (Australian Government 2020, 9). By recognising the systemic changes necessary to enact *real* change, this policy articulated the need to assign ultimate accountability for the policy's implementation to the governing body (i.e. Australian Government, via the Department of Health).

Meaningful assessment of the policy's progress was outlined in the form of two co-designed reviews (a mid-cycle review in 2026 and an end-of-cycle review in 2031), throughout report 3's 10-year plan. In response to changing priorities or emerging needs, report 3 noted the importance of a review program that could allow for policy design adjustments. Comparatively, report 4 explicitly described how evaluation was integrated throughout the policy implementation. Embedding evaluation from the outset was emphasised as a way to track and measure progress, and alter the policy as needed.

5. What does the evidence tell us about co-designing public policies?

The evidence in this review highlights a clear rationale for system-level change. By presenting a case for a new way of designing public policy, each paper implied that the design mechanisms of their preceding policies failed to address system-level problems. Each author's desire to deviate from traditional decision-making, symbolises the dichotomy between the fading relevance of conventional bureaucratic policymaking and the emergence of innovative co-design methods (Bason 2017). The readiness of policymakers to orient towards the latter seems to depend on their willingness to diminish their decision-making power in exchange for the privileging of other, often unheard, voices (Grisales-Bohórquez et al. 2022). Thus, the promise for co-designing public policy is apparent in the scant evidence presented in this review.

Common to all the included papers was the policymakers' desire to build (or rebuild) their communities' trust of the policy design process and policymakers themselves. While a lack of political trust can be attributed to many things, this review illustrates the governing construct as the bedrock of trust. Traditional decision-making tables that have inadequately resembled their target populations have been inclined to neglect the voices of the people the policy intends to serve. Such structures can (intentionally or unintentionally) eclipse the community's visibility of the decision-making mechanisms, fostering distrust and disengagement (Bessant, Farthing, and Watts 2016; Hurley et al. 2022; Jacobs and Buizer 2016). Similarly, communities that cannot see themselves authentically represented in a policy-making process are less likely to engage in or accept the policy implementation (Owens et al. 2022). This review highlights how co-design aspires to address this predicament through its inclusion and relational principles. By purposively engaging community voices from the outset and throughout, co-design can strengthen relationships that give rise to shared ownership, buy-in, sustainability, innovative resourcing, and diverse funding streams.

This review highlights the cultural challenges that co-design can present in traditional policymaking settings. The co-design symbolises a radical shift from conventional governing structures towards more horizontal layouts that foster shared power and learning (Burkett 2012). While political climates are not static, most conventional settings are risk averse and tend to resist change (Christiansen 2016; Lewis, McGann, and Blomkamp 2020). This review indicates that governing entities that are reluctant to embrace co-

design, typically prefer top-down approaches. Co-design can challenge such power imbalances, which often precipitates a 'messy' and confronting terrain (Richardson and John 2021). A culture that embodies traditional and linear problem-solving is unlikely to embrace the uncertainty and discomfort that often accompanies co-design.

A culture that pursues continuous learning about the architecture of the policy problem, through practical, creative, and iterative experimentation, can reap the benefits of prototyping (Christiansen and Bunt 2014). However, policymakers are usually tied to rigid funding models that do not accommodate for materialising policy prototypes that can pre-empt potential feedback and reactions (Kimbell and Bailey 2017). This review highlights how prototyping (the testing of policy ideas within a real-world context), is an essential element of co-design that progresses the conversation into action. Study two devotes an entire co-design session to prototyping policy ideas to test the feasibility and acceptability of the policy in a real-world setting. This illustrates prototyping within a complex setting, which requires a culture shift from eliciting ideas in a transactional way to transforming ideas into reality.

Co-designing public policy takes time. While co-design garners diverse perspectives to reframe a policy problem and generate new solutions (Lewis, McGann, and Blomkamp 2020), it can be a painstaking process. Co-design's creative and relational activities can involve unconventional communication techniques to better reflect the ideas of people with lived experience (Bevir and Rhodes 2006; Hess and Adams 2002; McKercher 2020). In contrast to conventional dialogue, co-design embraces creative mechanisms (e.g. storytelling, imagery, and role play) to harness empathic insights into a person's lived experience. Such an involved approach is unlikely to intrigue policymakers that are seeking solutions to complex problems within compressed timeframes and financial constraints.

Although a fundamental hallmark of co-design is inclusivity, both studies sought input from people with lived experience via virtual means. This method compromised their inclusive intention as it excluded people that had no access to digital technology from the co-design process (Nguyen et al. 2020). It is likely that this group of people's inequitable access to digital technology (i.e. health equity and opioid use disorder). Therefore, the imperative for collaborative platforms to be truly inclusive calls for well-resourced mechanisms that enable the participation of hard-to-reach people.

6. Ethics

Both studies in this review claimed that their research did not require human ethics approval. However, the involvement of people with lived experience in both studies entailed community representatives that were associated with intersecting vulnerabilities. For example, people from '*. . . rural, minoritized individuals, communities with poorer health metrics*' participated in community listening sessions (Walker et al. 2022, 144). Similarly, a '*. . . person with lived experience of incarceration at the jail*' participated in a survey that measured the acceptability and perceived feasibility of the policy (Owens et al. 2022, 360, 369). Thus, the ethical implications of co-designed public policy remain unclear and warrant further research.

7. Limitations and strengths

Overall, the recency, dearth, and disparity of evidence did not allow this review to draw conclusions about the impacts, outcomes, transferability, and scalability of

a co-designed public policy. The studies included in this review did not adequately describe the mechanisms undertaken to include people with lived experience (remuneration framework) and the prototyping process. Such practical information could provide policymakers with useful considerations. The ethical requirements for co-designing public policy with people with lived experience are unclear. The absence of ethical approval could impact the methodological rigour of both studies. Despite the limited evidence, this review provided useful findings to answer the review questions and identified opportunities future research.

8. Future research

More research is needed to better understand the benefits, risks, impacts, and practical requirements for co-designing public policy with people with lived experience, and the difference in outcomes for co-designed and non-co-designed public policies.

9. Conclusion

Despite the paucity of co-designed public policies, this review of the extant literature offers key learnings to decision-makers that are looking to embed co-design into their policy processes. Future studies could examine the benefits, risks, and impacts of co-designed public policies and features of effective co-designed public policy. The ethical implications of co-designing public policy, particularly with population groups that are linked to intersecting vulnerabilities, remain unclear. This warrants further work to ensure that policymakers employ ethically sound ways and means to see a problem through the eyes of others.

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We acknowledge that the lands on which we live, work, and play were never ceded and, therefore, always were and always will be Aboriginal and Torres Strait Islander people's lands. We pay our respects to all Aboriginal and Torres Strait Islander peoples, the traditional custodians of these lands. We honour their profound cultural connection to land, sea, sky, and community and commit to reconciliation for all Aboriginal and Torres Strait Islander peoples in our homes, workplaces, and social environments.

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Author contributions statement

MF led the systematic review design and development, reviewed and analysed the literature, and led the drafting of the manuscript.

KG reviewed the manuscript design and development, contributed to the review and analysis of the literature, and contributed to draft manuscripts.

BR supervised the systematic review design and development, contributed to the review and analysis of the literature, and contributed to draft manuscripts.

All authors read and approved the final manuscript.

Data availability statement

This study does not employ statistical methods and no replication materials are available.

Ethical statement

This systematic review of academic and grey literature did not require ethical approval as it did not involve data collection from human subjects.

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Appendix A. Quality assessment using JBI critical appraisal checklist for qualitative research

Record 1: Co-producing evidence-informed criminal legal re-entry policy with the community: an application of policy codesign	Assessor		
	MF	KG	BR
1. Is there congruity between the stated philosophical perspective and the research methodology?	Yes	Yes	Yes
2. Is there congruity between the research methodology and the research question or objectives?	Yes	Yes	Yes
3. Is there congruity between the research methodology and the methods used to collect data?	Yes	Yes	Yes
4. Is there congruity between the research methodology and the representation and analysis of data?	Yes	Yes	Yes
5. Is there congruity between the research methodology and the interpretation of results?	Yes	Yes	Yes
6. Is there a statement locating the researcher culturally or theoretically?	No	No	No
7. Is the influence of the researcher on the research, and vice-versa, addressed?	No	No	No
8. Are participants, and their voices, adequately represented?	Yes	Yes	Yes
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	Yes	Yes	Yes
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Yes	Yes	Yes
Sub-total	8	8	8
Grand-total		**8/10**	

Record 2: Cocreating evidence-informed health equity policy with community	Assessor		
	MF	KG	BR
1. Is there congruity between the stated philosophical perspective and the research methodology?	Yes	Yes	Yes
2. Is there congruity between the research methodology and the research question or objectives?	Yes	Yes	Yes
3. Is there congruity between the research methodology and the methods used to collect data?	Yes	Yes	Yes
4. Is there congruity between the research methodology and the representation and analysis of data?	Yes	Yes	Yes
5. Is there congruity between the research methodology and the interpretation of results?	Yes	Yes	Yes
6. Is there a statement locating the researcher culturally or theoretically?	No	No	No
7. Is the influence of the researcher on the research, and vice-versa, addressed?	No	No	No
8. Are participants, and their voices, adequately represented?	No	No	No
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	No	No	No
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Yes	Yes	Yes
Sub-total	6	6	6
Grand-total		**6/10**	

Systematic literature review summary

In summary, our systematic literature review illustrates the limited evidence available on co-designing policy with priority populations in high-income colonial settler countries. Nevertheless, the included four papers indicate that policy co-design:

i. Serves a purpose in addressing complex policy problems,
ii. Requires enacting conditions such as empowering people with lived experience, genuine shared decision-making, cross-cutting collaboration, policymaker accountability and policy implementation and evaluation, and
iii. Can be impeded by bureaucratic barriers like rigid consultation timeframes that hinder genuine collaboration.

These findings reinforce Blomkamp's (2018) [79] and Dillon's (2021) [97] research and add weight to the foundational enablers policymakers must implement to cultivate genuine policy co-design. The systematic literature review's significance lies in our objective to investigate in greater detail policy co-design examples to inform a framework for co-designing policy with Aboriginal and Torres Strait Islander peoples. The following chapter explicates our methodological approach to achieving this objective.

Chapter Two: Methodology

2.1 Research protocol

Our research protocol presents the study design intended to answer our research question (*What is the evidence for co-designing policy with Aboriginal and Torres Strait Islander peoples and what evidence-based learnings can support policymakers and Aboriginal and Torres Strait Islander peoples in this fundamental process?*). It was approved by the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) (reference: REC-0161) on 8 August 2023. It illustrates the research protocol methods, including Indigenous governance, Indigenous yarning methods, realist evaluation, realist review, and framework synthesis. A process evaluation is referred to in our research protocol to inform future research (with priority populations other than Aboriginal and Torres Strait Islander people). It is excluded from this thesis as it is out of scope and intended for future research (outlined in Chapter Five's Future research section).

The research protocol is a publication titled 'Co-designing policy with Aboriginal and Torres Strait Islander peoples: a protocol'. It was published in Public Health Research & Practice (A Journal of the Sax Institute) on 23 October 2024 (doi: https://doi.org/10.17061/phrp34122404). Public Health Research & Practice (A Journal of the Sax Institute) authorised the inclusion of this open access article in this thesis.

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Research

Co-designing health policy with Aboriginal and Torres Strait Islander peoples: a protocol

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Key points

- This study details the protocol for research projects that explore and develop tools to better support co-designed Aboriginal and Torres Strait Islander health policy in Australia
- It adds to the co-design body of knowledge in a health policy design and contributes to the *National Agreement on Closing the Gap* by equipping public policymakers with empirical evidence and tools to meaningfully co-design policy with Aboriginal and Torres Strait Islander peoples
- This research privileges Aboriginal and Torres Strait Islander peoples as co-researchers, exemplifying how genuine partnership can effectuate meaningful, culturally-informed research

Abstract

Objectives and importance of study: In the public service context, co-design is novel and ever-expanding. Co-design brings together decision-makers and people impacted by a problem to unpack the problem and design solutions together. Government agencies are increasingly adopting co-design to understand and meet the unique needs of priority populations. While the literature illustrates a progressive uptake of co-design in service delivery, there is little evidence of co-design in policy development. We propose a qualitative study protocol to explore and synthesise the evidence (literary, experiential and theoretical) of co-design in public policy. This can inform a framework to guide policymakers who co-design health policy with Aboriginal and Torres Strait Islander people.

Methods: The study design is informed by a critical qualitative approach that comprises five successive stages. The study commences with the set-up of a co-design brains trust (CBT), comprising people with lived experience of being Aboriginal and Torres Strait Islander who have either co-designed with public agencies and/or have health policymaking expertise (stage 1) The brains trust will play a key role in guiding the protocol's methodology, data collection, reporting and co-designing a 'Version 1' framework to guide policymakers in co-designing health policy with Aboriginal and Torres Strait Islander people (the framework). Two realist evaluations will explore co-design in health policy settings to understand how co-design works for whom, under what circumstances, and how (stages 2 and 3) The findings of the realist evaluations will guide the CBT in developing the framework (stage 4). A process evaluation of the CBT setup and framework development will assess the degree to which the CBT achieved its intended objectives (stage 5).

Conclusion: The proposed study will produce much-needed evidence to guide policymakers to share decision-making power and privilege the voices of Aboriginal and Torres Strait Islander people when co-designing health policy. Learnings from this translational research will be shared via the CBT, academic papers, conference presentations and policy briefings.

Introduction

We need better policy

Policies need to change to better meet the complex and dynamic needs of priority populations.[1] While policies impact population groups differently, priority populations are more likely to suffer extensive and enduring disadvantages.[2] Such inequities can be traced back to policies underpinning unjust systems.[3] Therefore, policy design is pivotal to shaping better outcomes for priority populations and should involve a deeper contextual understanding of the policy problems and aligning policy aims, strategies and tools to redress the problems.[4]

Traditional policy design

Traditional policy design reflects top-down government-led decision-making, where the problem definition and solution design are confined to a small group of people with decision-making power.[5] In many ways, policymakers are often far removed from the policy problems they are trying to resolve. Therefore, first-hand or lived experience can be overlooked or misunderstood, leading to the embedding of uninformed assumptions (or no assumptions at all) into the fabric of policy design. Such transactional mechanisms reflect colonising structures, which have resulted in enduring power imbalances that undervalue or disregard priority populations' decision-making capabilities.[6,7] This misalignment neglects people's lived realities and can lead to policy gaps that exacerbate the problem being addressed.[8] For example, despite health promotion programs that encourage widespread uptake of clean drinking water, many rural and remote towns in New South Wales (NSW), Australia, have limited access to clean drinking water.[9] In this context, the false assumption that every community in a high-income country like Australia has access to clean drinking water can undermine such health promotion efforts. Some policymakers realise that they cannot achieve lasting change on their own and acknowledge that priority populations have a better understanding of their own needs than anyone else.[10]

Promise of co-design

Co-design offers innovative ways for policymakers to engage with priority populations to cultivate a deeper comprehension of social problems and design solutions together.[6,7] By including priority populations in decision-making, co-design counts diverse perspectives and experiences as 'evidence' to inform relevant solutions and drive lasting change.[11] The literature highlights many benefits of co-design, including enhanced visibility of end-user experiences, improved public relations, strengthened customer relations, greater consumer satisfaction, better creativity, decreased risk of project failure and more innovative strategies.[12]

While co-design may not be the answer to every social problem, it has become a buzzword as public agencies increasingly claim to have co-designed their products, services and policies.[13] Despite its ubiquity, tokenistic co-design efforts indicate a lack of understanding of what authentic co-design entails.[7] Meaningfully engaging people with lived experience from the outset and throughout every phase of the design (i.e., problem posing, solution design, prototyping and evaluation) is a requisite of co-design.[7] This fundamental hallmark can determine if something has been authentically co-designed. While each co-design process is unique, inclusivity stands as an essential cornerstone within every co-design undertaking.[7] An exhaustive description of the features of co-design is beyond the scope of this article. However, it is worth recognising that effective co-designers establish, nurture and reaffirm the conditions for co-design.[7] Conditions can include time, sponsorship, safe, collaborative spaces, supportive culture, participant remuneration, creative communication (e.g., language, art, role play) and readiness to privilege voices that are traditionally unheard or overlooked.[13] Thus, co-design takes time and requires decision-makers to willingly share or hand over decision-making power to others. By situating lived experience front and centre, co-design can sometimes precipitate a 'messy', unpredictable and confronting terrain in comparison to traditional linear problem-solving approaches.[7]

Evidence for co-designing with Aboriginal and Torres Strait Islander peoples

Aboriginal and Torres Strait Islander peoples are a priority population in Australia. Co-design is garnering considerable traction as a method for addressing Aboriginal and Torres Strait Islander health issues.[14] Butler et al. comprehensively examined the evidence for co-designing health services with Aboriginal and Torres Strait Islander peoples.[15] Principal themes derived from their analysis of 99 studies encompassed Aboriginal and Torres Strait Islander leadership, a culturally grounded approach, respect, benefit to Aboriginal and Torres Strait Islander peoples, inclusive partnerships, and evidence-based decision-making.[15] These discoveries informed the development of foundational principles and best practices for co-designing health services with First Nations Australians.[16] National Aboriginal Community Controlled Health Organisation's (NACCHO's) co-designed *Aboriginal and Torres Strait Islander Cancer Plan* emphasises the imperative for *"...collective community-led action and sustained partnerships"* to address the *"...inequitable and avoidable differences' experienced by Aboriginal and Torres Strait Islander peoples with cancer"*.[17] Dudgeon et al.'s *Indigenous governance for suicide prevention in Aboriginal and Torres Strait Islander communities: A guide for Primary Health Networks*, advocates for an integrated co-design approach to suicide prevention.[18]

Policy design versus policy implementation

While evidence of co-design is predominantly found at the level of policy implementation (i.e., products, services, projects and programs), co-design in policymaking is lacking.[13] Therefore, it is not clear how learnings from service design can be transferred to the policy design context. Our study explores health policy co-design to uncover practical learnings (e.g., principles, enablers and barriers) to guide policymakers in co-designing health policy with Aboriginal and Torres Strait Islander peoples.

Aboriginal and Torres Strait Islander health policy

The inequities that Aboriginal and Torres Strait Islander peoples experience are well documented.[19,22] Aboriginal and Torres Strait Islander peoples experience specific problems that tend to co-exist across multiple government agencies at all jurisdictional levels. The *National Aboriginal and Torres Strait Islander Health Plan*[23] demonstrates how the cultural determinants and social determinants of health encompass a myriad of portfolios beyond health. For example, the health and wellbeing of Aboriginal and Torres Strait Islander people are interconnected with cultural identity and linked to justice, social, education, environmental, infrastructure, and economic portfolios. However, traditionally siloed government structures often address complex policy problems in isolation. By only tackling a part of multifaceted problems, a system and lateral consideration of the interdependencies across jurisdictional, sectoral, corporate and community entities is absent. This has led to health policies that have not been fit for purpose, are unsustainable and/or imprudent[8] and systems that have continued to perpetuate the significant health inequities experienced by Aboriginal and Torres Strait Islander peoples. These conventional bureaucratic approaches need to shift to mechanisms that privilege the voices of and share decision-making power with people who are impacted by the problem.[24]

Terminology

Priority populations

Priority populations experience disadvantage as a result of their "*…race and ethnicity, gender, sexual identity and orientation, disability status or special healthcare needs, and geographic location*".[25] While 'priority' is synonymous with 'vulnerable', 'minority', 'marginalised' and 'disadvantaged', it supports a strengths-based discourse by emphasising an urgency with which we need to address the problems that priority populations experience.

Public policy

In this research, 'policy' denotes public policy. Policy is of extensive scope and has garnered varied definitions in academic discourse. We define policy as a system of laws to address a problem that is designed and enforced by public agencies.[26]

Research goal

Objective

Our research aims to examine co-design in health policy design. By exploring co-designed Aboriginal and Torres Strait Islander health policy, this research aims to inform evidence-based co-design tools for health policymakers.

Methodology

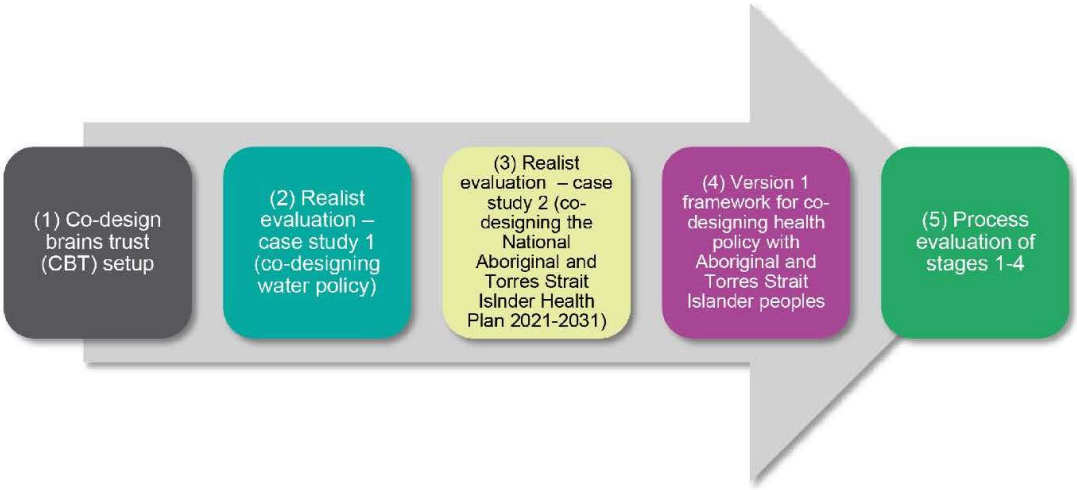
Approach

Our qualitative research will explore the evidence of co-design in the development of health policy for Aboriginal and Torres Strait Islander peoples.

Study governance

This research acknowledges and respects Aboriginal and Torres Strait Islander peoples' self-determination and sovereignty. Thus, four Aboriginal governance structures are involved in guiding, designing and implementing this research. The Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) provides the ethical and protocol compliance governance for this research as it relates to Aboriginal and Torres Strait Islander peoples. The Djurali Research and Education Group Research Advisory Panel guides and provides Aboriginal governance to the project team. The CBT provides cultural and co-design expertise in designing the research implementation with the project team. This will embed Indigenous knowledge systems, perspectives and priorities in the research and findings dissemination. The project team implements the research in accordance with AIATSIS' ethics and Djurali Research and Education Group Research Advisory Panel approval. The project team comprises researchers, policymakers and an Aboriginal elder who share a common purpose in advocating indigenising approaches that strengthen outcomes for Aboriginal and Torres Strait Islander peoples. All governance levels respectfully privilege Aboriginal and Torres Strait Islander peoples' perspectives throughout this research by seeking their guidance, giving heavier weight to their valued contribution to decision-making (e.g., CBT selection) and respecting their cultural insights and advice. Meaningful engagement across all governance levels is critical to continually enhance our research. The AIATSIS granted ethical approval for this research (#REC-0161).

Figure 1. Protocol stages



Study design

As illustrated in Figure 1, our study comprises five successive stages, namely: i) the setup of the CBT; ii) and iii) two realist evaluations; iv) Version 1 framework for co-designing health policy with Aboriginal and Torres Strait Islander peoples (the framework); and v) a process evaluation of the setup and framework development.

Stage 1 – Co-design brains trust (CBT) setup

Aim

We will set up a CBT at the outset and empower its collective voice as co-researchers in this study. The CBT will be a small group comprising people with a diverse range of expertise in co-design and policymaking. As our co-researchers, the CBT will play a key role in shaping our protocol (i.e., critiquing, challenging and questioning selected parts within each stage), sharing insights, resources, and experiences, and co-designing the framework.

Design

Principles

Our project team will facilitate all CBT activities. Cultural safety, respect, reciprocity, transparency, accountability and sustainability will underpin our participatory approach to selecting, collaborating with and remunerating our CBT members. In line with the evidence, privileging the voices of people with lived experience will be championed in all CBT collaborations. This decision-making power balance will not reflect traditional decision-making mechanisms within the policy setting. Therefore, building the CBT's capacity and capability will be key to ensure we support the elevation and integration of their voices, perspectives and experiences throughout the co-design process.[7] Capacity-building will involve our promotion of strengths-based discourse in all CBT activities that frame the input of people with lived experience as evidence that enriches our way of doing things. Our early identification of relevant training and upskilling opportunities (e.g., cultural awareness, cultural safety, peer support) that can support the development of CBT members will be critical to fostering a culture of respect and trust within the CBT. We will foster strong two-way communication between CBT members and encourage feedback to continually enhance the protocol and CBT activities. CBT members' (and realist evaluation participants') safety will be a high priority of this research. We will appropriately manage all safety incidents, risks and issues, which can include recording (e.g., risk register), reporting (e.g., CBT yarning circles, other relevant platforms or stakeholders) and relevant follow-up (e.g., lessons-learned register). CBT members will be remunerated for their time and contribution to this research.

CBT inclusion criteria

We will scan an assortment of disciplines, sectors, and policy networks to shortlist, select and recruit CBT members. The CBT will comprise people with lived experience of: i) being an Aboriginal and/or Torres Strait Islander person and having participated in co-design activities; ii) co-design facilitation and/or research; and iii) Aboriginal and Torres Strait Islander health policymaking and related activities. Aboriginal and Torres Strait Islander peoples will comprise 100% of CBT membership.

We will develop a CBT recruitment register informed by a scoping review of mostly online resources and networks to identify key people with relevant experience in co-design. Introductory meetings with these people (or groups) will inform the CBT selection process. We will seek recommendations for recognised co-design experts and facilitators. We will embrace opportunities to participate in co-design workshops and events to gain a deeper understanding of co-design in practice and engage with community connectors and gatekeepers. The inclusion criteria will inform the screening mechanism for shortlisting, selection and recruitment of CBT members.

Selection

Given the importance of relationships and connections in Aboriginal and Torres Strait Islander research, we will employ snowball sampling, shortlist participants and resolve discrepancies by consensus. We will formally invite selected participants to join the CBT (which will involve a participant information sheet and informed consent form).

Logistics

We will consider procuring a range of digital tools to effectively manage CBT activities. These include shared documentation software and online communication tools to keep CBT members connected between yarning circles. We will manage all secretariat requirements and facilitate around eight CBT yarning circles over the 1.5-year protocol (and out-of-session collaborations as required).

Stages 2 and 3 – Realist evaluations

Aim

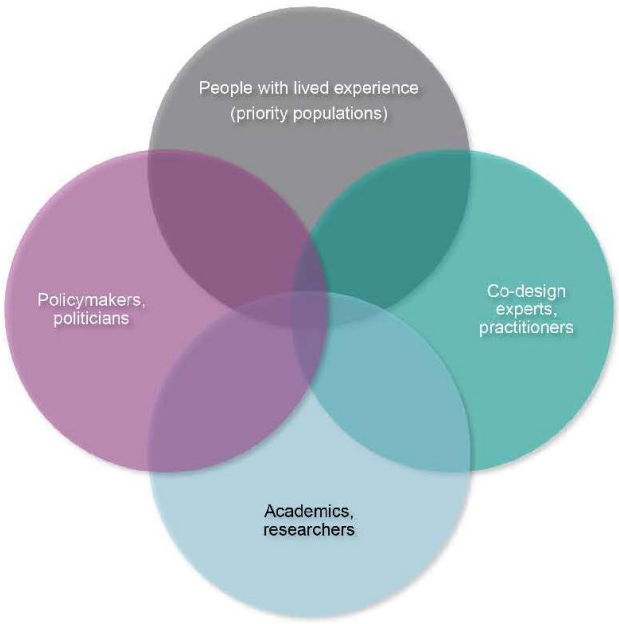
We will undertake two realist evaluations to explore the contextual realities of co-designing policy with Aboriginal and Torres Strait Islander peoples. Both realist evaluations seek to address the question: "What works, for whom, under what circumstances, and how?"[27]

Design

The first realist evaluation looks at the role of co-design in water policy that impacts the availability of reliable drinking water in rural and remote communities in Australia. The second case study is premised on the co-design process underpinning the development of the *National Aboriginal and Torres Strait Islander Health Plan (2021–2031)*.[23]

The CBT will determine the extent of their involvement at each stage of the realist evaluations. The realist evaluations will investigate how co-design was used in designing each policy. Underpinned by a realist philosophy of science, the evaluations will assume that the policy problems are 'real' and the co-design element of each context will produce different outcomes in different circumstances. Therefore, we aim to understand how co-design might produce different outcomes in different contexts.

Figure 2. Co-design brains trust (CBT)



To achieve our aims, each realist evaluation will:

i) Establish an understanding of the policy context (policy aim, instruments, stakeholders, resources, etc.) by examining relevant literature and expert intelligence
ii) Construct evidence-based program theories (configured as 'context-mechanism-outcome' hypotheses) to be explored
iii) Recruit participants from the co-design processes
iv) Undertake semi-structured interviews with participants to capture real-world co-design experiences (including enablers, barriers, challenges, conditions, etc.)
v) Analyse the data using retroduction (i.e., using abductive reasoning to infer the most likely reason for observations)
vi) Test and refine the program theories (i.e., determine what works for whom, under what circumstances and how)
vii) Report the results according to RAMESES II quality and reporting standards[28]
vii) Conclude with a set of contextualised recommendations for policymakers.

Stage 4 – Version 1 framework for co-designing health policy with Aboriginal and Torres Strait Islander peoples

Aim

The findings from Stages 1–3 will inform our collective framework development. Other evidence informing this work will include two realist evaluations of: i) atrial fibrillation screening of Indigenous communities in Australia, Canada, New Zealand and the US[29]; and ii) improving breast cancer outcomes for Aboriginal women in Australia.[30] This framework aims to equip policymakers with evidence-based guidelines and tools for co-designing health policy with Aboriginal and Torres Strait Islander peoples.

Design

While it is inappropriate to assume what this framework will look like, we expect it will at least include a set of guiding principles and practical tools for co-designing health policy with Aboriginal and Torres Strait Islander peoples. The framework is intended to offer comprehensive guidance to equip policymakers, including pragmatic ways to set the conditions for co-design and prototyping. Mindful of the diversity of Aboriginal and Torres Strait Islander peoples, our framework will elucidate the cultural and contextual considerations for meaningful co-design with Aboriginal and Torres Strait Islander peoples that are linked to varying intersecting vulnerabilities.[14]

Stage 5 – Process evaluation

Aim

We will undertake a process evaluation of the CBT and the framework to determine whether (and the degree to which) the CBT's activities have been implemented as intended and resulted in the proposed outcomes.

Design

Our process evaluation will:

i) Establish an understanding of the CBT objectives by reviewing relevant literature and expert intelligence (i.e., a logic model that outlines CBT's planned inputs, outputs, impact and outcomes; a resources management plan that outlines how resources, including funding, are acquired, allocated, monitored and controlled, and a monitoring plan that tracks CBT progress against its targets)
ii) Collect data via semi-structured interviews and questionnaire with each CBT member (the questionnaire will involve CBT members being asked to rank each question twice on a 7-point Likert scale (once for relevance and once for validity). and provide free text comments)
iii) Analyse the data to: a) assess the process' quality (how well were the intended outputs implemented) and fidelity [were the intended outputs implemented as planned] of the CBT setup process; and b) explore the process' reach, recruitment and context
iv) Assess the extent to which its intended outcomes were achieved within its specified timeframes
v) Report the findings of the process evaluation
vi) Conclude with recommendations for policymakers.

Results

We aim to publish our results in peer-reviewed journals, present them at research and public service forums, and they will culminate in a thesis. At least five publications are expected to emerge from this research project. Key criteria for journal selection will include relevance, appropriateness, open access, scientific rigour, peer-review process, ethical standards, reputation (of the editorial board, editorial quality) and indexing status. Our findings will also reach beyond journal platforms into health (and other) policymaking environments and Aboriginal and Torres Strait Islander communities. We will leverage our collective network to share the health policy co-design framework in health policy settings with policy champions in public agencies and across non-health sectors (e.g., education, justice). We will share our framework with co-design practitioners throughout our collective network. More importantly, we aim to create accessible resources (e.g., fact sheets, FAQs) for Aboriginal and Torres Strait Islander peoples to build their knowledge and understanding of policy co-design and their integral role in this process.

The CBT (and study participants, where relevant) will be invited to contribute to all publications and presentations. While our project team's role is to undertake the research and advocate for the findings, the CBT, study participants and community are the authoritative custodians of this study's data. Therefore, we will acknowledge and respect Indigenous Data Sovereignty and governance throughout this study, from the conceptualisation of data collection methods to reporting and results dissemination.

Limitations

We are aware that the requirements of our CBT (e.g., attending eight meetings over 1.5 years) may be demanding for some members. We expect continued engagement via online platforms will enhance the transparency and visibility of all CBT-related activities and decisions.

We are mindful that CBT members and study participants may not be able to continue throughout this study and address this risk by continual networking to recruit people who can enrich CBT activities throughout the study. While we expect the framework will add to the policy design landscape, we are cognisant that most public agencies face structural limitations and lack the capacity and capability to activate transformative change in policy design. Recruiting policymakers into the CBT and embedding testing and prototyping into the framework design will be critical to ensure that ideas are relevant in the real world.

Conclusion

Our study, as proposed in the above protocol, will consolidate the evidence and provide tools for policymakers to share decision-making power with and privilege the voices of Aboriginal and Torres Strait Islander peoples when co-designing health policy. Our translational research will be promoted via the CBT, academic papers, conference presentations, health policy training and Aboriginal and Torres Strait Islander community forums.

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The authors acknowledge that the lands on which they live, work, and play were never ceded and, therefore, always were and always will be Aboriginal and Torres Strait Islander people's lands. We pay our respects to all Aboriginal and Torres Strait Islander peoples, the traditional custodians of these lands. We honour their profound cultural connection to land, sea, sky and community and commit to reconciliation for all Aboriginal and Torres Strait Islander peoples in their homes, workplaces and social environments.

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Peer review and provenance

Externally peer reviewed, not commissioned.

Competing interests

None declared.

Author contributions

MF led the manuscript design and draft, BR supervised the manuscript design and contributed to draft manuscripts, VC contributed to draft manuscripts, and KG reviewed the manuscript design and contributed to draft manuscripts. All authors read and approved the final manuscript.

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Protocol summary

In summary, our protocol delineates the methodological rigour and ethical considerations guiding the approach to answering our research question (*What is the evidence for co-designing policy with Aboriginal and Torres Strait Islander peoples and what evidence-based learnings can support policymakers and Aboriginal and Torres Strait Islander peoples in this fundamental process?*). It also establishes a clear and replicable research protocol for future studies (outlined in Chapter Five's Future research section) in comparable contexts. Additionally, our protocol lays the foundation for the subsequent chapters' analyses and findings.

Viewed retrospectively, while we intended to undertake a realist evaluation for our second publication, time constraints necessitated the adoption of a realist review. This is outlined as a limitation (in Chapter Five's Discussion).

Positionality and Indigenous governance

As pointed out in the preliminary section, the author's positionality as a second-generation migrant from a middle-income background, combined with lived experience navigating systemic barriers as a member of an ethnic minority, profoundly influence the research protocol. The author's lived experience working alongside Australian priority populations has driven the commitment to co-design policy with Aboriginal and Torres Strait Islander peoples in ways that respect self-determination and cultural knowledge systems.

Recognising the potential for bias, the protocol embeds robust Indigenous governance from the outset by establishing a Co-design Brains Trust (CBT) comprising Aboriginal

and Torres Strait Islander experts in policymaking, co-design and cultural knowledge. A more detailed description of Indigenous governance is provided in Chapter 4 (A culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples). The CBT played an active role in shaping the research methodology to align with Aboriginal and Torres Strait Islander ways of knowing, being and doing. The CBT engaged collaboratively in shaping the research's analytical framing through refining and prioritising research questions, identifying focus areas and co-designing the realist hypotheses and Framework. Members participated in monthly yarning circles and additional sessions convened as needed to enable iterative discussion, reflection and shared decision-making throughout the research. Recognising the value of their time, expertise and lived experience, CBT members were remunerated for their ongoing contributions. This demonstrates the practical impact of participatory and co-design principles on research design, interpretation and analysis. This approach also ensures accountability, transparency and authenticity in elevating Aboriginal and Torres Strait Islander voices throughout all research stages.

Collaborative yarning methods with Aboriginal and Torres Strait Islander peoples and non- Aboriginal and Torres Strait Islander peoples respectfully privilege Aboriginal and Torres Strait Islander knowledge systems. A more detailed description of collaborative yarning methods and the Rambaldini Model of collective impact is provided in Chapter 4 (A culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples). Together, these elements reflect the author's personal journey and commitment to Indigenous governance grounded this research in genuine partnership, cultural safety and critical reflexivity.

Policy scope

Given the pronounced disparities in health outcomes for Aboriginal and Torres Strait Islander peoples, the research focus was initially on health policy. However, throughout the research process the CBT guided our understanding that health inequities are deeply intertwined with social, economic and political determinants shaped by broader public policy domains such as education, environment, housing, employment, child protection and welfare. Focusing solely on health policy risks obscuring these structural factors, whereas expanding the scope to public policy enables a more comprehensive understanding of how governance and institutional practices collectively impact Indigenous wellbeing, self-determination and cultural continuity. This broader perspective also illuminates how co-design principles can be applied across non-health policy domains. By situating health within the wider policy ecosystem, the research demonstrates that participatory approaches are not confined to sector-specific interventions but can inform systemic and equitable policy design across multiple governance areas.

Chapter Three: A realist approach to understanding policy co-design

3.1 Realist approaches

Pawson and Tilley developed realist approaches based on critical realism philosophy [98]. Realist approaches focus on understanding social programs and policies – specifically how, why, for whom and in what contexts they work or fail. Realist approaches are unlike traditional approaches often grounded in understanding a social phenomenon from a participant's perspective (e.g., ethnography, grounded theory). Rather, realist approaches broaden the focus to include the social, cultural and contextual considerations and mechanisms influencing a social phenomenon.

Realist approaches are traditionally used to appraise complex interventions and programs. However, we adopt realist approaches to analyse the underlying contextual factors (e.g., policy actors, political environment, bureaucratic systems and broader social structures) and mechanisms (e.g., shared decision-making power) within policy co-design processes. We use our findings to construct program theories that elucidate the foundational contexts and mechanisms underpinning policy co-design processes. Such program theories can inform future policy co-design, taking into account the contextual factors at play.

While realist studies typically assess interventions, there remains relatively little application of realist approaches specifically to the study of policy design itself. Realist approaches are particularly well-suited for analysing policy design in the domains of national health plans and drinking water as they can elucidate the complex contexts, mechanisms and outcomes underpinning policy development. Thus, adopting realist methods to analyse policy co-design extends the utility of realist inquiry beyond interventions to policy development. We use realist approaches to generate explanatory insights about the contingent and systemic factors influencing effective policy co-design. By doing this, we explore the intended outcomes of policy co-design decisions and the mechanisms and contextual conditions shaping how policy co-design functions in practice. This addresses a gap in the literature where the policy design phase has been comparatively under-examined.

This chapter comprises two publications. The first publication is a realist evaluation of a national policy that was co-designed with Aboriginal and Torres Strait Islander peoples. The second publication is a realist review of the potential for co-design in developing drinking water policy with Aboriginal and Torres Strait Islander peoples. Our findings from both studies (and other evidence) contribute to our Framework synthesis approach. As noted in Chapter 2, while we aimed to undertake a realist evaluation for our second publication, time constraints prevented this approach, and we have listed this as a limitation (in Chapter Five's Discussion). Notwithstanding, we gathered rich and diverse insights from both studies to inform our Framework.

3.2 Realist evaluation of the National Aboriginal and Torres Strait Islander Health Plan 2021-2031

The first publication in this chapter is a realist evaluation. We apply a realist lens to examine the policy co-design process in developing the National Aboriginal and Torres Strait Islander Health Plan (NATSIHP) 2021-2031 to provide insights for answering our research question (*What is the evidence for co-designing policy with Aboriginal and Torres Strait Islander peoples and what evidence-based learnings can support policymakers and Aboriginal and Torres Strait Islander peoples in this fundamental process?*). We investigate the contexts, mechanisms and outcomes associated with co-designing the NATSIHP to consolidate our nuanced understanding of the process and provide recommendations to enhance future policy co-design endeavours.

In this part of the thesis, we employ the term 'First Nations' to respectfully represent Aboriginal and Torres Strait Islander peoples in Australia. We also use the word 'Indigenous' to describe policies and programs explicitly pertaining to Aboriginal and Torres Strait Islander peoples.

The realist evaluation is a publication titled 'Co-designing Australia's National Aboriginal and Torres Strait Islander Health Plan 2021–2031: a realist evaluation'. It was published in CoDesign (International Journal of CoCreation in Design and the Arts, Taylor and Francis) on 4 April 2025 (doi: https://doi.org/10.1080/15710882.2025.2483520). CoDesign (International Journal of CoCreation in Design and the Arts, Taylor and Francis) authorised the inclusion of our open access article in this thesis.

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Co-designing Australia's National Aboriginal and Torres Strait Islander Health Plan 2021–2031: a realist evaluation

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ABSTRACT

Landmark policies such as the National Agreement on Closing the Gap urge governments to adopt genuine partnership and shared decision-making with First Nations peoples. Our study examines how policymakers and First Nations peoples co-designed the National Aboriginal and Torres Strait Islander Health Plan (NATSIHP) 2021–2031. We use realist evaluation to understand Context-Mechanism-Outcome (CMO) configurations. We collected data through yarning, interviews, and document analysis, focusing on how co-design mechanisms operated within specific contexts to produce observed outcomes. The context encompassed key policy actors, a tenuous First Nations health policy landscape, and non-negotiables like First Nations-led decision-making and content addressing cultural safety and systemic racism. Mechanisms included a culturally safe environment and shared decision-making. The outcomes showed a positive experience among participants in co-designing a national First Nations health policy, though there was disappointment in its implementation and accountability, underscoring the need for stronger follow-through. We highlight the imperative for governments to foster culturally safe environments for collaborative and inclusive policy design. Policymakers must empower First Nations peoples to create policy content that addresses systemic issues like racism. While co-designing policy with First Nations yields benefits, adherence to implementation and accountability measures is critical to avoid wasted efforts.

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Co-design; policy; First Nations; policymaker; realist; National Aboriginal and Torres Strait Islander Health Plan

1. Introduction

1.1. Background

Australia's First Nations peoples possess an ancient and enduring connection with cultural health determinants that support people, families and communities to thrive

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(Australian Institute of Aboriginal and Torres Strait Islander Studies 2024). Notwithstanding this relationship, equitable healthcare for First Nations peoples remains a significant challenge, marked by more recent historical disparities and systemic barriers (Coalition of Aboriginal and Torres Strait Islander Peak Organisations TAG 2020). First Nations peoples recognise the imperative for culturally responsive and inclusive decision-making (Coalition of Aboriginal and Torres Strait Islander Peak Organisations TAG 2020). In the complex landscape of health policy, co-design has emerged as a promising approach to address the unique health needs of priority populations (Blomkamp 2018). In essence, public administration literature describes co-design as an innovative approach for engaging people with lived experience of a problem in both policy problem identification and solution design undertakings (Evans and Terrey 2016). Scholars have documented merits and opportunities inherent in policy and program codesign (Burkett 2012) and the risks and challenges of co-designing with First Nations peoples (Dillon 2021). Through shared decision-making, co-design heightens understanding of the lived experiences associated with specific issues (McKercher 2020). Empirical investigations illustrate how effective co-design has underscored the development of sustainable, pertinent, contextually appropriate, judicious, and deliberated solutions to address intricate problems (Voorberg, Bekkers, and Tummers 2015).

Co-designing First Nations health policy is propelled by the exigency to redress historical health inequities through creating culturally relevant policy *with* First Nations peoples. Australia's National Aboriginal and Torres Strait Islander Health Plan 2021–2031 (NATSIHP) design process signals a turning point in the way policymakers construct policy with First Nations peoples. The Department of Health and Ageing (DOHAC), a federal department responsible for national health and ageing policy and funding, co-designed the NATSIHP with First Nations peoples to address disparate health needs. The NATSIHP aims to improve health outcomes, reduce health inequalities, and bolster culturally appropriate healthcare services for First Nations peoples. The NATSIHP focuses on key areas such as preventive health, healthcare access, social and cultural determinants of health, and First Nations-led health policy development, implementation, monitoring and review. Through collaborative efforts with First Nations peoples, the NATSIHP seeks to advance First Nations health equity and reinforce self-determination. The process of the NATSIHP's development was groundbreaking, as it marked the first instance of co-designing policy with First Nations peoples from the outset. This strategy ensured that the resultant policy would appropriately meet the unique needs of First Nations peoples, setting a precedent for future policy development. This co-design process has not been evaluated. Consequently, there is a pressing need for a rigorous evaluation methodology capable of illuminating the rationale, mechanisms, and outcomes of co-designing this national policy.

Realist evaluation offers a pertinent framework for understanding '*what works, for whom, and under what circumstances?*' (Wong et al. 2016). We adopt a realist evaluation to appraise the NATSIHP's co-design process, recognising the inherent perplexity and interplay of contexts, mechanisms, and outcomes that architect the policy. While realist philosophy is traditionally associated with interventions (e.g. public services and programmes), we apply a realist evaluation to posit a Context Mechanism Outcome (CMO) hypothesis (Wong et al. 2013) unravelling the complex context and mechanisms contributing to the NATSIHP's design.

1.2. Ethics

The Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) has granted ethical approval for our research (Reference: REC-0161).

2. Methods

2.1. Program theory

Our CMO hypothesis is outlined in Figure 1. The *context* embodied a bipartisan endorsement of First Nations-led health policymaking. *Mechanisms* encompassed the Department of Health and Aged Care (Department) facilitating policy content input from First Nations peoples. This involved collective grappling with unchartered issues (e.g. structural racism, cultural determinants of health, culturally competent healthcare and First Nations health is everybody's business). The *outcome* was a co-designed NATSIHP that delineated the policy instruments required to effectively meet First Nations health needs.

2.2. Research questions

Our study seeks to answer the questions: 'In co-designing the NATSIHP, what contextual factors were present and how did they influence the co-design mechanisms? How did these mechanisms precipitate the First Nations-led co-designed policy?'.

2.3. Realist evaluation design

The scope of our research was confined to examining the co-design policy process. Thus, investigating the policy's delivery, implementation, or evaluation falls outside the parameters of this study.

Our research team and co-design brains trust (CBT, First Nations co-researchers) constructed the study objectives, research questions and methodology. This involved realist and co-design literature analysis and consultations with First Nations peoples, policymakers and healthcare professionals to ensure that our methods were anchored in cultural, theoretical,

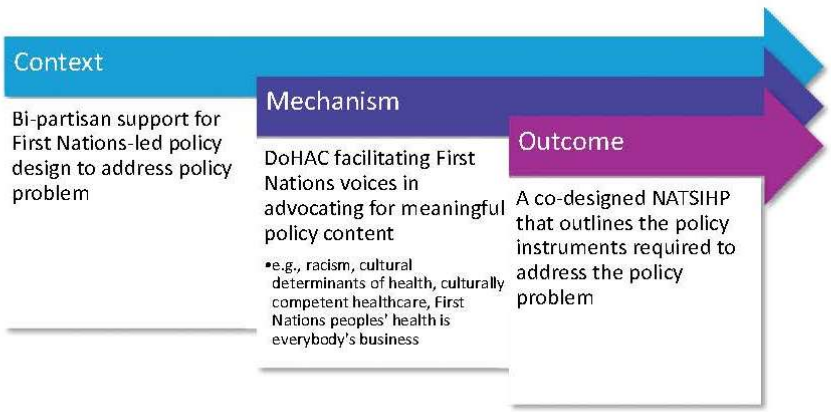


Figure 1. CMO hypothesis.

and practical considerations. We conducted our realist evaluation using the RAMESES II method and reported against the RAMESES II standards (Wong et al. 2013). Our paper outlines the theoretical underpinnings of our realist evaluation, delineates our research methodology and presents our findings and implications for co-designing First Nations policy.

2.3.1. Participant recruitment

The CBT nominated prospective participants and a snowball sampling approach was used to recruit further participants until data saturation was reached. Prospective participants were contacted via email initially and then via Teams for initial discussion and to complete the informed consent process.

2.4. Data collection

We collected data through document analysis, yarning and semi-structured interviews. Participants' perspectives, experiences, and interactions within the co-design process were explored iteratively.

The CMO hypothesis and semi-structured interview questions to participants prior to data collection to explicitly articulate our CMO configurations and assumptions. This allowed participants time to reflect on their experiences and provide accurate and comprehensive responses to inform our research question.

2.4.1. Document analysis

We analysed key policy documents including the National Agreement on Closing the Gap (Coalition of Aboriginal and Torres Strait Islander Peak Organisations TAG 2020), the National Aboriginal and Torres Strait Islander Health Plan (NATSIHP) 2013–2023 (Australian Government Department of Health and Aged Care 2013), My Life My Lead report (Australian Government Department of Health and Aged Care 2017) Implementation Plan for the NATSIHP (2013–2023) (Australian Government Department of Health and Aged Care 2013) and Primary Health Networks (PHN) and Aboriginal Community Controlled Health Organisations guiding principles (Australian Government Department of Health and Aged Care 2016). We identified key themes, policy directives and strategic priorities relevant to First Nations peoples' health and social and emotional well-being. We categorised the content to better understand the policy landscape.

2.4.2. Yarning

Consistent with the Rambaldini co-design approach, we used Yarning to collect, analyse and interpret data in our study (Gwynne et al. 2022). Yarning is an acknowledged Indigenous research tool for collecting data with and for First Nations peoples within Australia, where a respectful exchange of narratives fosters a deep understanding of perspectives (Walker et al. 2014). Our CBT and research team employed regular yarning circles to prioritise Indigenous ways of communicating through deep listening and two-way knowledge sharing (Sharmil et al. 2021). Our yarning circles focused on monitoring data management (including recording of participant details and interview protocols), discussing emerging themes and handling discrepancies. We also member checked selected participant transcripts to validate the data's accuracy and credibility by seeking

feedback from the participants themselves, ensuring that their recorded responses accurately reflected their intended meanings and perspectives.

2.4.3. Interviews

We undertook 13 semi-structured interviews, engaging 14 members of the NATSIHP Working Group (NWG). Notably, one of these interviews was conducted with two participants simultaneously. Ten participants were First Nations peoples representing themselves and the First Nations health sector. Four participants were Departmental staff. Each participant actively contributed to co-designing the NATSIHP, with two of the participants serving as NWG co-chairs. Data saturation was reached. Our approach facilitated an in-depth exploration of the participants' insights and experiences, thereby enriching the data collected for our study.

2.5. Data analysis

The CBT examined the transcripts for CMO configurations. Four authors analysed the first two transcripts to establish interrater reliability and develop a joint understanding of what constitutes a context, mechanism, and outcome in co-designing the NATSIHP. The lead author and two CBT members systematically reviewed the remaining transcripts to identify recurring patterns, themes and relationships between contextual factors, mechanisms, and outcomes. The lead author employed thematic analysis techniques to categorise and code the data to identify suitable CMO configuration themes and sub-themes. A table with the resulting CMO configurations was validated by all authors and CBT members. We triangulated transcript and documentary evidence (e.g. My Life My Lead, NATSIHP) to corroborate findings and enhance analysis credibility. Data interpretation was subject to further member checking, whereby all participants were invited to review and provide feedback on our preliminary findings to ensure resonance with their experiences. Regular CBT and research team yarns reviewed and interpreted emerging findings.

3. Results

3.1. Participants

Table 1 details the research participants characteristics and how their data was utilised to refine our CMO theory. During the NATSIHP's development, our departmental participants were actively engaged in supporting the policy's formulation. Concurrently, our NWG participants were affiliated with various academic institutions and community organisations playing a pivotal role in designing and implementing health policies and

Table 1. Participant details.

	First Nations peoples	Department policymaker
No. of participants	10	4
How participant data was used	Data from all participants contextualised our understanding of the co-design process, revealing unanticipated CMO configurations. Participants insights enriched our understanding of the CMO interdependencies, ultimately refining our CMO theory for co-designing First Nations health policy (Figure 2).	

services tailored to the needs of First Nations peoples. Their collaborative efforts ensured the NATSIHP was informed by diverse perspectives and grounded in cultural knowledges.

3.2. Refined CMO configurations

Our refined CMO is outlined in Figure 2 and Table 2. Contextual augmentations include the National Agreement on Closing the Gap's (NACtG Coalition of Aboriginal and Torres Strait Islander Peak Organisations TAG 2020) impact in promoting meaningful partnership with First Nations peoples and transforming the way government agencies operate (e.g. policymaking). Also, co-designing policy must encapsulate co-designed implementation and evaluation. The mechanism element is strengthened by extending the Department's role beyond facilitation, to empowering First Nations voices and sharing decision-making. The outcome encompasses a co-designed NATSIHP that privileges First Nations knowledge, enhances the Department's co-designing policy capability and offers post-implementation and evaluation opportunities.

4. Discussion

Our study contributes to the burgeoning literature on co-designing with First Nations people, by offering insights in composing health policy grounded in First Nations voices, experiences, and aspirations. The realist evaluation's CMO framework served as an invaluable analytical instrument to understand the co-design process within this complex policy terrain. By leveraging the CMO approach, we deconstructed the intricate interplay between the political, social and cultural contexts that shaped the NATSIHP's development and the mechanisms driving the resultant NATSIHP. Our discussion answers our research questions by deliberating the CMO insights outlined in Table 2.

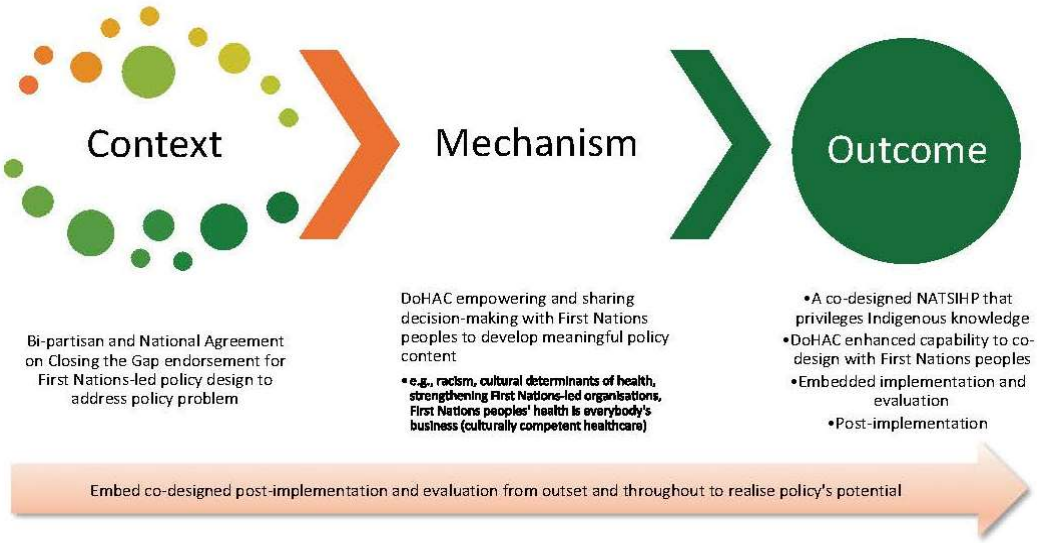


Figure 2. Refined CMO.

Table 2. CMO results.

Context	Mechanism	Outcome
Policy actors: – First Nations health sector – Department of Health and Aged Care – Politicians	Culturally safe environment: – Share decision-making – Co-chair arrangement – NATSIHP working group	Positive experience
Health policy landscape: – My Life My Lead – National Agreement on Closing the Gap	Policy content: – system-level change – cultural safety – racism – First Nations-led health services	A co-designed NATSIHP (including agreed policy content: cultural safety, racism, and First Nations-led health services)
Non-negotiables: – First Nations-led policy dialogue and decision-making – My Life My Lead consultation outcomes – cultural safety – racism – First Nations-led health services	Co-design roles: – First Nations sector expertise – policymakers – resourcing	Disappointment in the NATSIHP's implementation and accountability shortcomings

4.1. Context

4.1.1. Policy actors

Pivotal to co-designing the NATSIHP was a stakeholder landscape marked by a knowledgeable and experienced First Nations health sector, an adaptable and resourceful Department, and receptive political leadership. Leaders across First Nations, Departmental, and political echelons embraced the co-design ethos to effect transformative change.

The First Nations health sector (the sector) has deep expertise in Aboriginal and Torres Strait Islander ways of knowing, being, and doing (Campbell et al. 2017). The sector's rich contribution to developing the NATSIHP was spearheaded by the National Health Leadership Forum (NHLF). The NHLF represented national First Nations organisations spanning varied health domains (e.g. workforce, research, etc.). Non-NHLF First Nations organisations also contributed to developing the NATSIHP. The NHLF played a key role in previous health initiatives and policy. For example, to inform the previous health plan, the Department engaged NHLF to lead the My Life My Lead (Australian Government Department of Health and Aged Care 2017), consultations to harness First Nations peoples' healthcare experiences. The NHLF leveraged their strategic acumen and extensive networks across Australia to build a consensus of First Nations health needs. Committed to centring the First Nations voices and perspectives in all its dealings, the NHLF demonstrated a deep awareness and proficiency of their role in empowering First Nations voices through co-designing policy. The sector's growing connection with the Department and government was said to have been propelled by the sector's effective management COVID-19 response within First Nations communities.

The Department's delicate balancing of risk and accountability surfaced as a critical contextual element. Participants indicated that the Department's antecedent risk averseness often restricted policy content, curtailing decisive action necessary to address First

Nations health inequities. This risk aversion, while ostensibly aimed at minimising potential pitfalls, was believed to paradoxically actualise new risks by stifling innovation and progress. Moreover, policymaker accountability, particularly in matters of financial stewardship, imposed additional constraints on policy content. The Department's NATSIHP lead policymaker (First Assistant Secretary, First Nations Health Division (FNHD)) acknowledged the indispensable contribution of First Nations leaders in health policy and implementation. This heralded a departure from previous policy design techniques towards co-designing policy with First Nations peoples. The policymaker team's consistency (i.e. low staff turnover) and expanding knowledge of First Nations health outcomes also gave prominence to their commitment to partnering with First Nations peoples.

Ministerial support was essential for elevating First Nations-led practices. Then, Ministers such as Ken Wyatt (Indigenous Affairs) and Greg Hunt (Health) were noted as political leaders that endorsed partnership and co-design with First Nations peoples. They heeded the sector's advice that First Nations health policy needed to shift from fragmental perspectives to holistic health and well-being. Their responsiveness and respect for First Nations leaders were instrumental in fostering an environment conducive to co-design. Although departmental and political leaders acknowledged co-design's intrinsic value, the potential risk of relinquishing power to First Nations peoples was a concern given the unprecedented nature of co-designing policy.

4.1.2. Policy landscape

The First Nations health policy landscape preceding the NATSIHP was largely shaped by interconnected policies designed to mitigate the profound health inequities experienced by Aboriginal and Torres Strait Islander peoples. Fisher et al. (2019) explore the previous policy NATSIHP (2013–2023) development process which signalled a paradigm shift towards recognising First Nations cultures as central to addressing the health disparities facing First Nations peoples (Fisher et al. 2019). As part of the implementing the NATSIHP (2013–2023), the Australian Government Department of Health and NATSIHP (2013–2023) Advisory Group conducted the My Life My Lead (MLML) consultations across Australia in 2017. The MLML report highlighted key priority areas for improving health outcomes, including, centring cultural identity and expression and the social determinants of health (Australian Government Department of Health and Aged Care 2017). Underpinning these efforts was the overarching National Agreement on Closing the Gap (established in 2008), which aimed to redress the social inequities experienced by First Nations peoples across the life course (Australian Human Rights Commission 2014). Notwithstanding these efforts, evaluations indicated persistent gaps in health outcomes due to fragmented and inconsistent approaches (Australian Human Rights Commission 2018) necessitating the new NATSIHP 2021–2031. The NATSIHP (2021–2031) aimed to fortify existing frameworks by co-designing a policy prioritising essential actions to attain health parity for First Nations peoples.

The refreshed NACtG (Coalition of Aboriginal and Torres Strait Islander Peak Organisations TAG 2020) was established one year prior to the NATSIHP's launch. The NACtG elevated the Department's consultation efforts to a co-design approach to enact lasting change within First Nations health policy. Championing partnership and shared decision-making, the NACtG provided the

impetus for co-designing the NATSIHP. While the NACtG may not have evoked explicit co-design terminology, its priority reforms justified the decision to co-design the NATSIHP. Further, given the Closing the Gap's historical challenges and public scrutiny of its lacking progress, adopting anything other than co-design was deemed politically unwise.

The persisting health insufficiencies confronting First Nations peoples called for a refresh of the preceding tenuous health policy. MLML's invaluable insights into First Nations health priorities necessitated a revamped policy rooted in community realities. For example, cultural safety and racism emerged as central themes from MLML, highlighting the imperative for systemic change across national, state, and local health jurisdictions. Including these issues in the previous policy was a notable milestone, signalling an unfolding commitment to eliminating systemic injustices. However, inadequate financial resources and lacking commitment from national, state, and local jurisdictions to coordinate efforts impeded the required structural changes.

4.1.3. Non-negotiables

The sector presented the Department with non-negotiable principles before engaging in the co-design process. From the outset, the sector required First Nations-led policy dialogue and decision-making. This measure ensured that the policy was immersed in First Nations health perspectives (e.g. cultural safety, racism, and strengthening First Nations-led health services). The Department agreed. This was a further critical contextual element.

4.2. Mechanism

4.2.1. Cultural safety

All (sector and Department) participants conveyed comfort with expressing their perspectives openly and without fear of judgement or reprisal. This facilitated purposeful dialogue and inspired reciprocal learning, adaptation, and authentic partnership between policy actors. Cultural training and mentoring for (sector and Department) staff involved in the collaboration promoted respectful and meaningful co-design. Embracing strengths-based deliberations, participants were continually encouraged to speak up. An Aboriginal-led policy writing process accentuated the Department's respect for and inclusion of culturally appropriate policy content. Ultimately, the culturally safe co-design platform was a mechanism that gave rise to a respectful and inclusive partnership where culturally informed and sensitive dialogue honoured First Nations voices.

4.2.2. Shared decision-making power

4.2.2.1. Co-chairs. The Department's appointment of two NATSIHP Working Group (NWG) Co-chairs (one from the NHLF and the other from the Department), landmarked a transition towards inclusive policymaking. This arrangement nurtured shared decision-making to bridge the gap between bureaucracy and First Nations peoples and legitimise the co-design process. Participants ascribed their experiences of real power balance to this novel co-chairing arrangement, which demonstrates how shared leadership can drive policy co-design.

Participants noted that successful co-design depends on the dedication, openness and humility of influential individuals. Thus, co-Chair selection was critical to effectively co-designing the NATSIHP. Participants acknowledged the suitability of NWG co-Chairs, Donna Murray (NHLF) and Gavin Matthews (Department), their mutually respectful working rapport and their direct communication line with the Minister. This symbolised the breadth of support for the co-Chairs to co-lead this critical work. Participants also indicated that both co-Chairs understood their respective roles in the co-design process and embodied the principle that leadership transcends mere authoritative control. Co-Chairs expertise in their respective domains was also crucial for guiding robust dialogue (within their own and across stakeholder groups) to spur lasting change.

4.2.2.2. NATSIHP working group. The NWG was enriched by its diverse membership, with its representation extending beyond the Aboriginal Community-Controlled Health (Pearson et al. 2020) sector. This inclusivity sought to ensure that the resultant policy would be representative of and meaningful to all community members, allowing them to recognise their own experiences and perspectives within the resultant policy. Participants observed that the NWG's diverse membership distinguished it from other contemporaneous First Nations advisory endeavours (e.g. the Coalition of Peaks role in implementing the NACtG (Coalition of Peaks 2023). From the outset, the NWG's sector representatives determined how the Department would engage with them. Participants noted how the NWG prioritised their communities and sector over personal agendas, pronouncing the willingness of NWG sector representatives to authentically co-design with the Department. This cultivated honest and respectful debate, where NWG representatives acknowledged their strengths and limitations while collaborating to find common ground.

4.2.2.3. Policy content. Robust and iterative policy content negotiations resulted in the NATSIHP's relevant and legitimate depiction of First Nations priorities. The policy content crystallised the earnest co-design principles by centring culturally responsive health system for First Nations peoples. Rather than reinventing the wheel, the NWG ensured that the NATSIHP honoured existing knowledge and experiences (e.g. MLML) in contending prevailing systemic issues. Thus, the NATSIHP elevated strengths-based discourse and eschewed redundant efforts. The MLML consultations revealed that First Nations peoples are likely to experience racism when accessing healthcare. While the previous policy referenced racism, embedding into the NATSIHIP as an urgent priority necessitated the Department's extensive efforts to familiarise political leaders with what they may view as a contentious issue. Moreover, the policy content needed to reflect not only the social determinants of health but also cultural determinants, a novel inclusion substantiated by research (Salmon et al. 2018). This illustrated an abandonment of previous conventions to vindicate the need for holistic understandings of First Nations health encompassing cultural determinants.

4.2.2.4. System-level change. Through a series of negotiations, the co-Chairs obtained national, state and local endorsement of the NATSIHP to enact the scale of change required through all health system levels.

4.2.3. Co-design roles

4.2.3.1. First nations sector expertise. The NWG sector representatives' cultural expertise spanned a broad range of policy areas, including health research, aged care, cancer, mental health and suicide prevention and health promotion (e.g. smoking cessation). Regardless, capturing First Nations diverse perspectives required inclusive consultations that often extended beyond First Nations peak bodies to entail First Nations communities. Informing consulted peoples that it was not feasible to incorporate all feedback into the policy sometimes strained relationships between NWG representatives and the peak bodies and local communities. Nevertheless, the sector prioritised acknowledging their communities' contributions and advocated their feedback to at least educate policymakers.

4.2.3.2. Department policymakers. The Department expertly leveraged their resources and navigated bureaucratic systems and timeframes to effectively co-design the NATSIHP. To effect large-scale change, the policymaking team negotiated and socialised policy content within the Minister's Office and Department's Executive Committee. The Department's co-design principles hinged on respectful and transparent articulation of its limitations and strengths. Building collective co-design capability posed challenges as some staff grappled with a sense of disempowerment in navigating an unfamiliar power equilibrium. Participants attributed this struggle to a preference for customary top-down policymaking. Notwithstanding, ceding policy authority to non-policymakers signalled the Department's decampment from such conventions. Thus, adept leadership proved indispensable in championing co-design principles, adaptability and continual and iterative learning.

4.2.3.3. Resourcing. NWG sector representatives were supported by their sector leads and the Department to co-design the NATSIHP while contending with additional workloads. The Department offered practical and logistical support to NWG sector representatives (e.g. remuneration). Supportive leadership was crucial, particularly for non-First Nations staff navigating unfamiliar terrain. Participants articulated the need for trusted and accessible leaders who could guide and mentor co-design participants to contribute effectively. Throughout the journey, external First Nations expertise was acquired to refresh the NWG and inject new energy and perspectives to sustain the co-design process.

The Department progressed the co-design process in various ways, including policy drafting assistance, planning and procuring evidence from reputable sources such as the Lowitja Institute (Institute, Lowitja 2024) and Professor Ray Lovett (Australian National University 2024). Their methods and means demanded active listening to NWG sector representatives to ensure the policy design and content were appropriate. In some instances, policymakers handed writing responsibility to the sector, acknowledging the importance of their agency in crafting the final product. Policymakers proactively assessed their biases when

drafting policy content and iteratively refined drafts with NWG sector representatives. This gave rise to strengths-based policy content that catered to First Nations peoples' health needs, while remaining palatable to government.

4.3. Outcome

Participants commonly expressed satisfaction with the co-design process and resulting policy. Profound learning experiences and personal development were also reported. Despite its challenges, participants valued how inclusive policy-making afforded unlikely people the opportunity to contribute to substantial change. Participants correlated this positive experience with the co-Chairs early and ongoing shared decision-making. The Department's policy co-design capability was credited to a notable shift towards openness and humility in grappling with First Nations health inequities. Throughout the co-design journey, friendships were forged, ameliorating a sense of camaraderie among some participants. The NATSIHP's inclusion of cultural safety, racism, and First Nations-led health services was largely attributed to the co-design tenets.

4.4. Other

Participants reported experiences that our CMO hypothesis overlooked. Specifically, the absence of co-designed implementation and evaluation plans has constrained the NATSIHP's from realising its potential, causing frustration and disappointment. Participants explicated the need to embed First Nations -led implementation and evaluation processes (Australian Government Productivity Commission 2020). Such measures (e.g. post-implementation review) could hold national, state and local health system partners accountable to the NATSIHP's objectives, assess policy effectiveness and support continuous quality improvement. Omitting accountability mechanisms undermined the extensive co-design efforts to incorporate culturally relevant policy content, such as systemic racism. Participants observed that the failure to implement the NATSIHP also rendered efforts invested in consulting First Nations peoples as pointless, as their participation was predicated on the expectation of tangible implementation and transformative change.

4.5. Limitations and future directions

Our scope limited the exploration of the NATSIHP's implementation and measures of its effectiveness in addressing First Nations health needs. Future research can examine co-design beyond the realm of policy design, extending into policy implementation and evaluation. Such research can investigate how co-designing throughout the policy lifecycle can translate policy content into tangible outcomes. Moreover, future research could enquire the transferability and scalability of co-designing policy across myriad First Nations contexts beyond health (e.g. education). Future inquiries could also explore the outcomes of co-designed policies, with

a particular emphasis on the NATSIHP to understand the role that co-design plays in shaping these outcomes.

5. Conclusion

Co-designing the NATSIHP epitomised a sophisticated and iterative policymaking journey characterised by bi-partisan endorsement, partnership, reflective practice and challenges that progressed personal and Departmental growth towards more inclusive policy design. Our realist lens uncovered co-design mechanisms that drive the development of national First Nations health policy and provided insights into what works, for whom, and under what circumstances. Our analysis of stakeholder interactions signified historical and systemic considerations and the role of First Nations leadership in shaping health policy outcomes.

5.1. Recommendations

We recommend that policymakers co-designing with First Nations peoples ensure that First Nations-led dialogue occurs early and throughout policy design. This means that a political and policy landscape should actively embrace the risks associated with novel co-design ventures that can lead to significant and lasting changes for First Nations peoples. Establishing culturally safe and respectful spaces that empower First Nations peoples to authentically participate can take time. However, such efforts can substantially enhance policies in addressing contentious issues (e.g. racism and culturally unsafe healthcare). Sharing decision-making power through sustained funding and resources is pivotal to valuing and supporting ongoing engagement. Embedding co-design in Indigenous policymaking frameworks can ensure that effective policy development is not reliant on the benevolence of individual leaders but is instead rooted in departmental systems. Nevertheless, an exemplary co-design process holds no value if the policy itself is not subsequently implemented and rigorously evaluated to improve outcomes for First Nations peoples.

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Realist evaluation summary

In summary, our realist evaluation uncovered a multifaceted interplay of contextual factors that shaped the NATSIHP's policy co-design process. These insights informed our recommendations and guide the development of our culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples (detailed in Chapter 4). Our realist hypothesis underestimated the importance of accountability for policy implementation, particularly after a long policy co-design process. The resulting program theory signifies the necessity to embed policy implementation and evaluation from the beginning to fulfil the policy's objectives. While we specify in our introduction that our research is centred on policy design (i.e., not implementation), we do not undermine governments' critical role of implementing and evaluating a co-designed policy with communities. Indeed, governments need to honour and reciprocate the contributions of people with lived experience who invest (often uncompensated) time and effort into shaping co-designed policies. This lays the groundwork for future research into co-designed policies that have been effectively implemented and evaluated as intended (outlined in Chapter Five's Future research section).

3.3 Realist review of Aboriginal and Torres Strait Islander perspectives in drinking water policy

The second publication in this chapter is a realist review. We apply a realist lens to investigate how Aboriginal and Torres Strait Islander knowledge systems have been integrated into national, state/territory and local drinking water policy to elucidate findings related to our research question (*What is the evidence for co-designing policy with Aboriginal and Torres Strait Islander peoples and what evidence-based learnings can support policymakers and Aboriginal and Torres Strait Islander peoples in this fundamental process?*). Focusing on drinking water policy spotlights the disparity in clean drinking water access within Australia, where Aboriginal and Torres Strait Islander communities are disproportionately disadvantaged.

The realist review is a publication titled 'Aboriginal and Torres Strait Islander Perspectives in Drinking Water Policy: A Realist Review.'. It was published in the Australian Journal of Social Issues (Australian Social Policy Association, Wiley) on 14 April 2025 (doi: https://doi.org/10.1002/ajs4.70020). The Australian Journal of Social Issues (Australian Social Policy Association, Wiley) authorised the inclusion of our open access article in this thesis.

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Aboriginal and Torres Strait Islander Perspectives in Drinking Water Policy: A Realist Review

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ABSTRACT

Aboriginal and Torres Strait Islander cultures have a deep, enduring connection to water. However, since Australia's colonisation in 1788, water management has shifted, creating ongoing issues for these communities. Notwithstanding the universal recognition of safe drinking water as a human right, significant inequities persist, particularly affecting Aboriginal and Torres Strait Islander peoples. Excluding Indigenous knowledge systems from drinking water policy design has exacerbated these issues. Contemporary discourse acknowledges the importance of integrating Indigenous knowledge into drinking water policy. Yet, the extent of Aboriginal and Torres Strait Islander influence on current drinking water policy remains unclear. Our realist review addresses two questions: (1) What evidence supports engaging Aboriginal and Torres Strait Islander peoples in drinking water policy design at macro, meso and micro levels? (2) What contextual factors and mechanisms influence this engagement? We systematically searched electronic databases and grey literature, resulting in five peer-reviewed studies and 33 grey literature sources. Our findings suggest that addressing complex water issues requires significant and permanent investment in Aboriginal and Torres Strait Islander governance and self-determination in policy design, implementation and evaluation. We propose a roadmap highlighting enablers and barriers, noting that future research should explore capacity-building for Indigenous water operators and decision-makers.

1 | Introduction

The fabric of Aboriginal and Torres Strait Islander culture weaves an unbroken bond with water, extending back more than 60,000 years (Marshall 2017). Through the ages, water has held a sacred place in the cultural identity of Aboriginal and Torres Strait Islander peoples. Yet, since colonisation, access to clean drinking water in Australia has remained a highly contentious issue (Moggridge, Thompson, et al. 2022b; Water Services Association of Australia 2022). This contention is notably accentuated by the exclusion of Aboriginal and Torres Strait Islander peoples in drinking water policy design and implementation (Moggridge 2021; Water Services Association of Australia 2022) and the complex interplay of responsibilities among local, state/territory and national governments (Wheeler et al. 2024). Similarly, Canadian Indigenous communities also face significant drinking water quality challenges, highlighting the need for increased investment in research consultation to

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shape better drinking water policies for Indigenous communities (Bradford et al. 2016).

Under Article 11(1) of the United Nation's International Covenant on Economic, Social and Cultural Rights, access to safe drinking water is a human right (UN 1966). However, in Australia, inequities persist in safe drinking water access. This is particularly evident for Aboriginal and Torres Strait Islander peoples, who face significant injustices in accessing clean and reliable water sources (Perry et al. 2022). Historically, colonisation and the imposition of Western water management systems have disrupted Indigenous water practices and contributed to ongoing inequities in drinking water access and quality. Despite efforts to address these disparities through various policy interventions and initiatives (Moggridge 2021), the extent to which Aboriginal and Torres Strait Islander peoples' knowledges, experiences and rights are considered in current safe drinking water policy remains unclear.

A comprehensive understanding of how Aboriginal and Torres Strait Islander perspectives are integrated into drinking water policy frameworks is essential to promoting equitable access to safe drinking water for Aboriginal and Torres Strait Islander peoples and all Australians.

The Australian Government Productivity Commission's review of the National Agreement on Closing the Gap 2024 (Commission 2024b) urges governments to intensify their efforts in fulfilling their commitments to the Agreement's four priority reforms (Coalition of Aboriginal and Torres Strait Islander Peak Organisations 2020). The Agreement's first priority reform requires governments to recognise the significant value Aboriginal and Torres Strait Islander peoples can bring to policy design and implementation by engaging in early and ongoing shared decision-making with Aboriginal and Torres Strait Islander communities. It also emphasises the need for investment in Aboriginal and Torres Strait Islander-led approaches to achieving meaningful and lasting improvements in health, education, economic and social outcomes for Aboriginal and Torres Strait Islander peoples Stefanelli et al. (2017).

Our paper explores how Indigenous ways of knowing, being and doing are integrated in Australian drinking water policy design. In recent years, there has been increasing recognition of the importance of centring Indigenous knowledge systems and perspectives into natural resource management policies, including those related to water governance. For instance, Stefanelli et al. explored the integration of Indigenous (Canadian and Australian) and Western knowledge systems in water research and management (Stefanelli et al. 2017). They found that community-based participatory research, along with fostering mutual trust and community ownership, is crucial in integrating Indigenous and Western knowledge systems to improve water management. Jackson and Altman (2009) also emphasise the imperative for Aboriginal governance in water policy and management, particularly in North Australia (Jackson and Altman 2009). The Committee on Aboriginal and Torres Strait Islander Water Interests (CAWI) (Australian Government Department of Climate Change 2024) is a national advisory body that exemplifies Indigenous governance. The CAWI is supported by the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) to advise '*...the National Water Reform Committee (NWRC); and separately the Australian Government, and Water and Murray-Darling Basin Ministers Council, on Aboriginal and Torres Strait Islander Water Interests*' (Australian Government Department of Climate Change 2024). The CAWI comprises Aboriginal and Torres Strait Islander peoples that are appointed on their expertise in Indigenous water management. One of the CAWI's key principles is ensuring ongoing access to clean and safe drinking water. This involves recognising Aboriginal and Torres Strait Islander peoples' values in water management policies, laws and decisions about data ownership (Interests 2023). Jaravani et al. (2016) research supports CAWI's approach by highlighting the importance of incorporating Aboriginal views on drinking water quality and acceptability to formulate effective water policies (Jaravani et al. 2016). However, the extent to which Aboriginal and Torres Strait Islander peoples' knowledges and experiences are considered in current safe drinking water policy in Australia remains an area of inquiry. Through a comprehensive synthesis of existing literature and policy documents, this review contributes to a deeper understanding of how Aboriginal and Torres Strait Islander voices are represented and valued in efforts to address water quality injustices in Australia.

Our paper's objective is to critically examine the integration of Indigenous knowledge systems and experiences within current drinking water policy in Australia through a realist review approach. We adopt a realist approach Pawson and Tilley, (1997) to map the landscape of national, state and four examples of local (urban, regional and rural/remote) drinking water policies to elucidate the contexts, mechanisms and outcomes for engaging Aboriginal and Torres Strait Islander peoples in policy design. We explicate realist principles and detail the methodology used for our literature search, selection and assessment. We present the synthesised findings and their policy implications. Finally, the paper concludes with a summary of key insights and future research recommendations.

2 | Methods

2.1 | Terminology

Aboriginal and Torres Strait Islander peoples: the first peoples of Australia, meaning they were here for tens of thousands of years before Australia's colonisation in 1788 (Studies 2022).

Policy: 'A publicly available statement of intent or expected practice that is not negotiable and requires mandatory compliance (with consequences if not complied with)' (Christie et al. 2023).

Safe drinking water: in Australia, safe drinking water meets specific quality standards outlined in the National Health and Medical Research Council's Australian Drinking Water Guidelines (Australia 2021).

2.2 | Research Question

Our paper sets out to answer the realist questions:

1. what is the evidence for engaging Aboriginal and Torres Strait Islander peoples in designing drinking water policy?

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2. what contextual factors and mechanisms (enablers and barriers) of engaging with Aboriginal and Torres Strait Islander peoples are associated with drinking water policy at macro, meso and micro-system levels?

2.3 | Indigenous Governance

Our study acknowledges and respects Aboriginal and Torres Strait Islander peoples' self-determination and sovereignty. Our research team comprises Aboriginal and Torres Strait Islander elders and Aboriginal and Torres Strait Islander and non-Aboriginal and Torres Strait Islander policymakers and researchers from the Djurali Centre for Aboriginal and Torres Strait Islander Health Research and Education (Djurali) and Co-design Brains Trust (CBT). While Djurali guides and provides Aboriginal governance (Institute 2023) for our study, the CBT provides cultural expertise throughout this study. The CBT is a small group of Aboriginal and Torres Strait Islander peoples with research, policymaking and co-design expertise (Fono et al. 2024). Djurali and the CBT members embed Indigenous knowledge systems, perspectives and priorities in this study's design and data collection, analysis, findings and manuscript development. This study is also implemented in accordance with AIATSIS' ethics (#REC-0161) and Djurali's Research and Education Group Research Advisory Panel approval.

2.4 | Yarning

Following the Rambaldini collective impact methodology, we employed yarning to gather, analyse and interpret our data (Gwynne et al. 2022). Yarning is an Indigenous research method for collecting data with and for Aboriginal and Torres Strait Islander peoples in Australia (Kennedy et al. 2022). To enable respectful narrative exchange and deepen our collective understanding of this research, we undertook collaborative yarning and research yarning (Bessarab and Ng'Andu 2010) via yarning circles. Our yarning circles respectfully engaged our Co-design brains trust (CBT), which included Aboriginal and Torres Strait Islander researchers, elders and policymakers, throughout our study. Our regular yarning circles prioritised Aboriginal and Torres Strait Islander ways of knowing, being and doing in our data collection, analysis and interpretation. Also, our collaborative yarning recognised Aboriginal and Torres Strait Islander knowledge systems by ensuring Aboriginal and Torres Strait Islander research team members' voices were privileged throughout each stage of our study.

2.5 | Realist Approach

A realist approach underpins our aim to investigate the contextual factors and underlying mechanisms shaping outcomes in drinking water policy concerning Aboriginal and Torres Strait Islander peoples. Realist reviews are grounded in realist philosophy and seek to understand how and why complex interventions work in specific contexts by examining the underlying mechanisms and contextual factors (Pawson et al. 2005). We adopted this method to provide a nuanced understanding of the complex interplay between cultural, social and environmental factors influencing the integration of Aboriginal and Torres Strait Islander knowledges in drinking water policy. Our realist review generated context-mechanism-outcome (CMO) configurations to inform a programme theory (Kent and Ajjawi 2022) to understand if and to what extent various facets of safe drinking water policy in Australia accommodate Indigenous perspectives. Our programme theory identified the necessary conditions (i.e., contextual factors and mechanisms) for how Indigenous knowledges are woven into drinking water policy design, should such instances exist. Further, our programme theory deepened our understanding of the impact of drinking water policies that integrate Aboriginal and Torres Strait Islander perspectives. The advantages of this approach include its ability to integrate diverse types of evidence, offer context-specific insights and develop explanatory theories that inform policy and practice (Pearsons et al. 2022). However, potential limitations include the complexity of distinguishing between mechanisms and contextual factors within policy development. To overcome this limitation, our collaborative yarning and yarning circles fostered open dialogue and mutual understanding among our research team, facilitating consensus on data synthesis and interpretation.

2.6 | Search Strategy

1. We compiled a search strategy with MeSH terms and keyword phrases including 'Aboriginal and Torres Strait Islander peoples', 'Australia', 'safe drinking water' and 'policy'. We used the following search strings: ('drink* water') AND ('Indigenous' OR 'Aborigin*' OR 'Torres Strait Island*' OR 'Aboriginal and Torres Strait Islander' OR 'First Peoples') AND ('Australia*') AND ('polic*' or 'govern*' or 'legislat*' or 'framework*' or 'strateg*' or 'roadmap' or 'act' or 'regulat*' or 'plan'). Our search strings were refined based on initial obtained results.
2. We searched electronic databases and grey literature sources in May 2024. We systematically searched the following electronic databases: PubMed, Medline, Embase, Scopus, Web of Science, Academic search premier, Indigenous Studies (AIATSIS) and Google Scholar. We searched for grey literature in the form of downloadable policy documents, reports and white papers from Analysis and Policy Observatory, Indigenous HealthInfoNet, CSIRO, and relevant national, state and local water governing websites.

2.7 | Eligibility Criteria

Our inclusion criteria were as follows:

1. geography: literature focusing on drinking water policy in Australia,
2. population: literature describing ways that Aboriginal and Torres Strait Islander perspectives are integrated in drinking water policy,
3. policy: literature pertaining to government drinking water policies (in alignment with our definition of policy),

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4. study type: literature involving qualitative and quantitative research methodologies, to provide a comprehensive understanding of the topic,
5. recency: current drinking water policies (i.e., not superseded by new policy), to ensure relevance and currency of findings and
6. accountability: literature linked to accountability mechanisms (e.g., regulation).

Our exclusion criteria were as follows:

1. geography: literature with a non-Australian focus,
2. population: literature with no reference to Aboriginal and Torres Strait Islander peoples,
3. irrelevance: literature focusing on outdated or superseded drinking water policy,
4. non-English: literature published in languages other than English, unless translations are readily available or deemed essential for inclusion and
5. duplicate studies: multiple versions of the same study or redundant publications on the same topic.

2.8 | Screening and Selection

Author 1 was assisted by a university librarian in conducting the initial searches using the search strategy detailed above. Results were exported to EndNote to manage references (including de-duplication). Authors 1–3 reviewed article titles and abstracts to determine relevance based on eligibility criteria. Articles that met the inclusion criteria were included, and irrelevant articles were excluded with reasons documented. Author 2 resolved any discrepancies. Authors 1–3 reviewed the full texts of included articles to confirm relevance. Our PRISMA diagram in **Figure 1** details our systematic study selection process, including the number of studies identified, screened, assessed for eligibility and included in our analysis.

2.9 | Data Extraction

Author 1 extracted key data from included articles, including literature aim, methods, findings and policy implications. Extracted data were verified by Authors 2–6 and 9 to ensure consistency and accuracy, and outlined in Table 1.

2.10 | Quality Assessment of Peer-Reviewed Academic Studies

We intended to use the Centre of Research Excellence in Aboriginal Chronic Disease Knowledge Translation and Exchange's (CREATE) Aboriginal and Torres Strait Islander Quality Appraisal Tool to assess the included studies. However, the study characteristics did not align with CREATE's assessment criteria, which determine research quality based on how the research prioritises the voices of, considers, includes and benefits Aboriginal and Torres Strait Islander peoples (Harfield et al. 2020). Four of the five included studies were

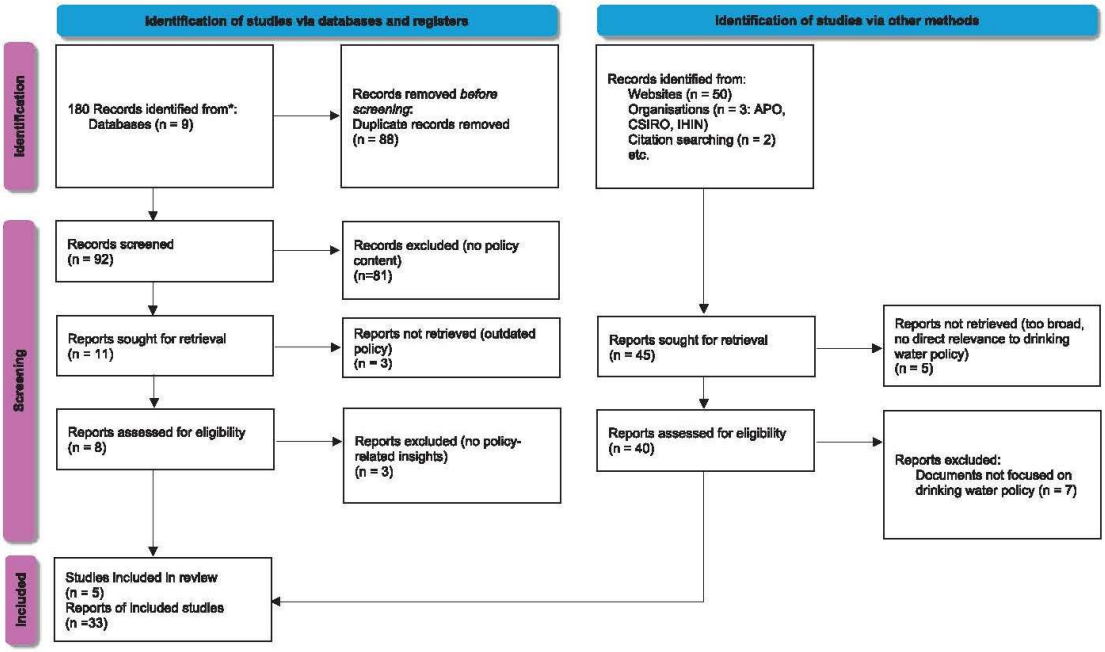


FIGURE 1 | PRISMA flow diagram.

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TABLE 1 | Studies and reports characteristics.

Evidence type	#	Author, year	Title	System level
Peer-reviewed studies ($n = 5$)	1	Balasooriya et al. 2023[24]	A review of drinking water quality issues in remote and indigenous communities in rich nations with special emphasis on Australia.	Macro
	2	Howey & Grealy, 2021[25]	Drinking water security: the neglected dimension of Australian water reform.	Meso (Northern Territory)
	3	Wyrwoll et al., 2022[23]	Measuring the gaps in drinking water quality and policy across regional and remote Australia.	Macro
	4	Vanweydeveld & Water Services Association of Australia (2022)[4]	Closing the water for people and communities gap: improving water services to Aboriginal and Torres Strait Islander remote communities.	Macro
	5	Moggridge & Thompson, 2021[42]	Cultural value of water and western water management: an Australian Indigenous perspective	Macro, Meso, Micro
Government documents ($n = 24$)	1	Australian Government National Health and Medical Research Council, 2011[14]	Australian Drinking Water Guidelines	Australian Drinking Water Guidelines
	2	Australian Government Productivity Commission, (2024)[26]	National Water Reform 2024	Macro
	3	Commonwealth Scientific and Industrial Research Organisation (CSIRO), 2023[43]	Water supply for remote Australian communities. Water quality review and treatment technology framework for remote community water supply.	Micro
	4	Green, Moggridge and Australian Government Department of Environment and Energy (2024)[44]	Australia State of the Environment 2024	Macro
	5	Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024)[45]	First Nations water policy	Macro
	6	DCCEEW (2024)[10]	Committee on Aboriginal and Torres Strait Islander Water Interests Insights Paper	Macro, Meso
	7	Australian Government Department of Environment and Energy (2021)[36]	Partnering with Indigenous organisations for a sustainable environment	Macro
	8	DCCEEW (2024)	National Water Initiative	Macro
	9	Moggridge and Mihinui, (2018)[46]	Indigenous principles for water quality (Australian and New Zealand Guidelines for Fresh and Marine Water Quality)	Macro

(Continues)

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TABLE 1 | (Continued)

Evidence type	#	Author, year	Title	System level
	10	Australian Government National Water Grid (2024)[47]	First Nations Water	Macro
	11	Watertrust Australia Ltd., (2023)[48]	First Nations engagement in water policy reform	Macro
	12	Watertrust Australia Ltd., (2024)[49]	The landscape of First Nations water rights and interests	Macro
	13	Watertrust Australia Ltd., (2023)[50]	Exploring a First Nations voice in water policy reform	Macro
	14	New South Wales Department of Climate Change, Energy, the Environment and Water, 2008-current[51]	Aboriginal Communities Water and Sewerage Program	Meso
	15	Victoria State Government Department of Environment, Energy and Climate Action (DEECA), 2024[52]	Aboriginal Water Program	Meso
	16	DEECA, 2020[53]	Water, Country and Community Program (2020–2024)	Meso
	17	Government of Western Australia Department of Water and Environmental Regulation, 2024[54]	Aboriginal Water and Environment Advisory Group	Meso
	18	Government of Western Australia Department of Water and Environmental Regulation, 2023[55]	Bring Together Walk Together Aboriginal Partnership Framework	Meso
	19	Northern Territory Government, 2023[56]	Territory Water Plan	Meso
	20	Tasmania Government Department of Natural Resources and Environment, 2024[57]	Aboriginal Freshwater Interests	Meso
	21	Government of South Australia Department for Environment and Water, 2024[58]	Annual Water Security Update 2024	Meso
	22	Government of South Australia Department for Environment and Water, 2022[59]	Water Security Statement 2022 Water for Sustainable Growth	Meso
	23	Queensland Government Department of Regional Development, Manufacturing and Water, 2023[60]	First Nations Water Strategy	Meso
	24	ACT Government, 2014–2044[61]	ACT Water Strategy 2014–44. Striking the Balance.	Meso

(Continues)

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TABLE 1 | (Continued)

Evidence type	#	Author, year	Title	System level
Case studies ($n = 4$)	1	Vanweydeveld & Water Services Association of Australia (2022)[4]	Northern Territory: A successful Aboriginal engagement through honest and genuine trusted relationships: the case of Borroloola.	Micro
	2		South Australia: Building community resilience in partnership with remote communities. The Anangu Pitjantjatjara Yankunytjatjara lands.	Micro
	3		Queensland: Safe and Healthy Drinking Water in Indigenous Local Government Areas Program	Micro
	4		Western Australia: Water Corporation 'Yesterday, Today, and Tomorrow'	Micro
Media ($n = 5$)	1	Australian Government National Water Grid, 2023[62]	Closing the Gap: $150 million towards First Nations water security	Macro
	2	Australian Broadcasting Corporation Rural, Clint Jasper, 2024[63]	Better climate science, greater First Nations participation flagged in national water policy overhaul	Macro
	3	Australian Government Department of the Prime Minister and Cabinet, 2023[64]	Next step towards closing the gap	Macro
	4	Moggridge, Beal and Lansbury, The Conversation, 2022[34]	Countless reports show water is undrinkable in many Indigenous communities. Why has nothing changed?	Macro
	5	Australian Broadcasting Corporation, Daniel Litjens, 2023[65]	NT government's first water plan to focus on safe drinking water for remote communities	Meso

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not Aboriginal and Torres Strait Islander-led research conducted by, with and/or for Aboriginal and Torres Strait Islander peoples and communities. Rather, the included studies offered insights into ways Aboriginal and Torres Strait Islander perspectives were integrated into drinking water policy. Therefore, we combined two tools to assess our included studies. First, we developed a set of culturally informed questions (informed by the CREATE tool) to evaluate the extent to which each study incorporated Indigenous knowledges and expertise and benefited Aboriginal and Torres Strait Islander peoples. Author 2 led the development of these questions with support from Authors 1 and 3. Second, we analysed each study's methodological quality using the Joanna Briggs Institute (JBI) Critical Appraisal tools for use in JBI Systematic Reviews Checklist for Qualitative Research (Institute 2017). Authors 1–3 discussed their cultural and methodological analysis of each included study. All authors independently assessed and rated each included paper before reaching consensus on the quality ratings of each study through yarning (Walker et al. 2014). Our assessment is outlined in Appendix A (Cultural and Quality assessment using cultural assessment tool and JBI Critical appraisal checklist for qualitative research).

2.11 | Synthesis and Reporting

Author 1 employed thematic analysis techniques to categorise and code the data. Authors 1–3 identified pertinent CMO themes and subthemes. All authors validated the resulting CMO configurations outlined in Figure 2. Key findings were presented to the CBT, and our yarning circles elucidated the broader implications of drinking water policies for Aboriginal and Torres Strait Islander peoples within diverse Australian contexts (Appendix B).

3 | Results

3.1 | Paper Selection

As shown in Table 1, we included five (5) peer-reviewed academic studies and thirty-three (33) grey literature files (including twenty-four (24) government reports, four (4) case studies and five (5) media files) in our review.

3.2 | Local Drinking Water Policy

Analysing drinking water policies for over 500 hundred local councils in Australia was beyond the scope of our study. Therefore, we included four local examples that described efforts to engage local Aboriginal and Torres Strait Islander communities in drinking water policy and management. These examples are listed as 'case studies' in Table 1 and highlight best practices within a local setting. We drew insights from these case studies to inform our understanding of the micro-level context, mechanisms and outcomes.

3.3 | Context-Mechanism-Outcomes

Authors 1–3 analysed the included evidence to inform our CMO table, which was verified by our CBT and outlined in **Figure 2**.

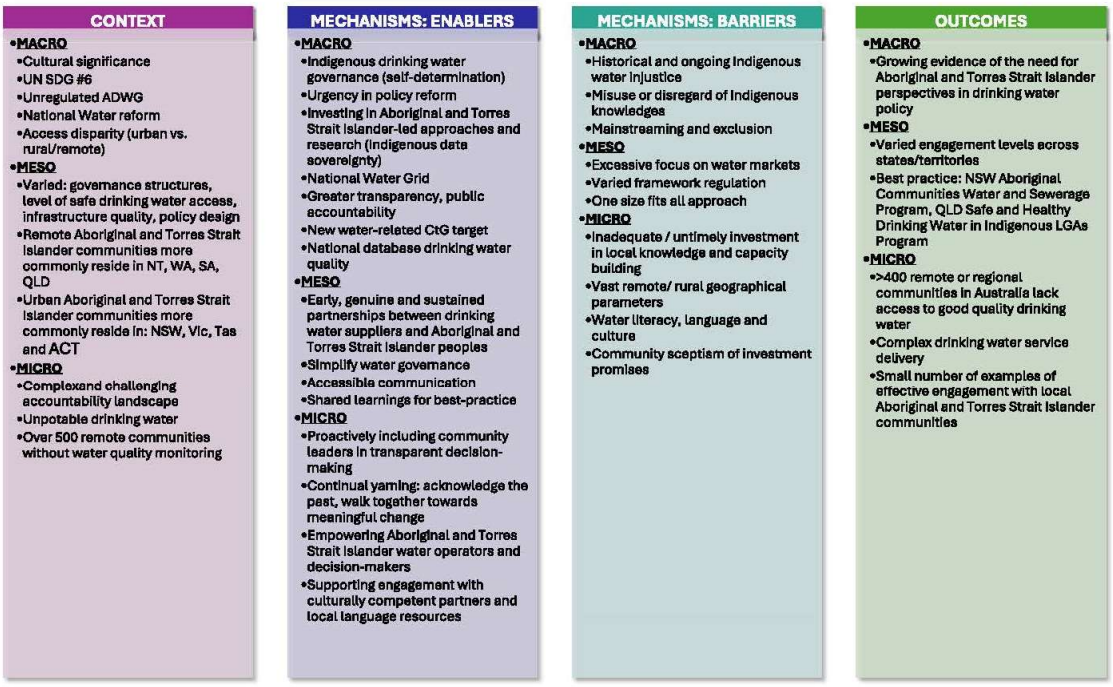


FIGURE 2 | Context-mechanism-outcome summary.

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3.4 | Context

Essentially, drinking water injustices experienced by Aboriginal and Torres Strait Islander peoples are severe and widespread (Balasooriya et al. 2023; Howey and Grealy 2021; Water Services Association of Australia 2022; Wyrwoll et al. 2022). Among the 1100 remote communities where approximately 150,000 Aboriginal and Torres Strait Islander peoples reside, 45% are located in the Northern Territory (Water Services Association of Australia 2022). Wyrwoll found that 408 remote and regional communities lack access to safe drinking water, with 40% of these being Aboriginal and Torres Strait Islander communities. Despite this scenario, we are uncertain of the precise extent of the drinking water gap. The evidence indicates the urgency required for policymakers to include Aboriginal and Torres Strait Islander perspectives in drinking water policy design. The context of drinking water policy is multi-faceted. At a global level, safe drinking water access is highlighted as a human right in the United Nations Sustainable Development Goal 6. At the macro (national) level, the Australian Drinking Water Guidelines (ADWG) set the national quality standards. However, they lack regulatory enforcement, thereby delegating safe drinking water responsibility to state/territory and local governments. National water reform efforts, such as the National Water Reform 2024, recognise that water holds cultural significance for Aboriginal and Torres Strait Islander peoples (Commission 2024a). Despite this, significant drinking water disparities persist across Australia. Urban centres typically encounter minimal issues, whereas rural and remote areas face extensive drinking water challenges. At the meso (state/territory) level, drinking water policy, governance, access and infrastructure quality significantly vary. Rural and remote Aboriginal and Torres Strait Islander communities predominantly reside in the Northern Territory, Western Australia, South Australia and Queensland, whereas urban communities commonly reside in New South Wales, Victoria, Tasmania and the Australian Capital Territory (Wyrwoll et al. 2022). The micro-level (local) context is marked by a complex and challenging policy landscape with minimal drinking water quality monitoring in over 500 remote communities (Water Services Association of Australia 2022). Compared to other states, Tasmania's engagement with Aboriginal and Torres Strait Islander peoples on drinking water policy is notably deficient (Green 2021).

3.5 | Mechanisms—Enablers

At the macro level, the evidence points towards the need to embed Aboriginal and Torres Strait Islander drinking water governance, knowledges and self-determination in national drinking water policy. The systemic change required to enable this is contingent upon policy reform prioritising significant investment in Aboriginal and Torres Strait Islander-led approaches and research, inclusive and transparent decision-making and streamlined public accountability. Mechanisms to facilitate this include a national drinking water quality database. At the mesolevel, genuine and sustained partnerships between drinking water suppliers and Aboriginal and Torres Strait Islander communities are vital. Simplifying drinking water governance and investing in culturally relevant resources to support engagement can strengthen these partnerships. A shared understanding of best practice is contingent upon cross-jurisdictional knowledge exchange of lessons learned in engaging Aboriginal and Torres Strait Islander peoples in policy design. At the micro level, actively including Aboriginal and Torres Strait Islander community leaders in transparent decision-making processes, undertaking continuous local yarning that acknowledges the past and fosters shared decision-making pathways, is also essential. Moreover, providing resources for local Aboriginal and Torres Strait Islander water operators through training, reliable drinking water infrastructure and local language resources is needed.

3.6 | Mechanisms—Barriers

At the macro level, barriers to effectively engaging Aboriginal and Torres Strait Islander peoples in drinking water policy include historical and ongoing Aboriginal and Torres Strait Islander water injustices which is compounded by the misuse or disregard of Aboriginal and Torres Strait Islander knowledge systems. Mainstreaming (i.e., focusing on the majority) in national water policies excludes Aboriginal and Torres Strait Islander perspectives which further exacerbates these issues. At the mesolevel, the differing degrees of Aboriginal and Torres Strait Islander involvement in regulatory frameworks highlight the variability in state and territorial openness to engaging with Aboriginal and Torres Strait Islander communities. While some state/territory drinking water policies have engaged Aboriginal and Torres Strait Islander peoples in their design (e.g., NSW), others are lagging. At the micro level, a 'one size fits all' engagement approach fails to consider and address the diverse needs of every Aboriginal and Torres Strait Islander community. Other issues hindering shared decision-making efforts include low water literacy, language barriers, vast geographical parameters of remote and rural areas and community scepticism towards investment promises.

3.7 | Outcomes

At the macro level, there is growing evidence supporting the inclusion of Aboriginal and Torres Strait Islander knowledges in drinking water policy design. At the mesolevel, notable best practice examples of shared decision-making include the NSW Aboriginal Communities Water and Sewerage Program and the Queensland Safe and Healthy Drinking Water in Indigenous Local Government Areas Program. We determined the best practice hallmarks in these policies by their strong community engagement, cultural integration into policy content and sustainability measures. Such characteristics can foster inclusive, culturally respectful and sustainable policy design. The micro level situation remains dire, with over 400 remote or regional communities in Australia lacking access to good quality drinking water (CSIRO 2023). Complex drinking water infrastructure and service delivery in these areas exacerbate the problem. Despite this, notable examples of successful local engagement with Aboriginal and Torres Strait Islander communities in drinking water management (not policy) provide valuable insights for adaptation in other local settings.

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3.8 | Programme Theory

Our programme theory is '*The complex and extensive drinking water issues impacting Aboriginal and Torres Strait Islander communities (context) necessitates the integration of Aboriginal and Torres Strait Islander governance and self-determination in policy design, implementation and evaluation (mechanisms). Long-term funding for transparent shared decision-making at all system levels (mechanisms) can empower Aboriginal and Torres Strait Islander peoples to co-design solutions with policymakers to overcome entrenched drinking water inequities (outcome)*'.

3.9 | Roadmap for Privileging Aboriginal and Torres Strait Islander Knowledges in Designing Drinking Water Policy

We consolidated our findings into a comprehensive roadmap (Figure 3). Our roadmap illustrates the essential enablers for advancing genuine involvement of Aboriginal and Torres Strait Islander peoples in drinking water policy and barriers impeding this objective.

4 | Discussion

We set out to understand if and how Aboriginal and Torres Strait Islander perspectives are integrated in drinking water policy in Australia. While a mounting body of evidence emphasises the fundamental requisite to engage Aboriginal and Torres Strait Islander peoples in designing drinking water policy, these efforts are only recently being recognised but not necessarily acted upon and remain fragmented across governments (Commission 2024a). Although current collaborative efforts signify positive advancement, they do not yet encompass all system levels (national, state and local) necessary to effect enduring and system-wide transformation. Instead, engagements with Aboriginal and Torres Strait Islander peoples are varied, misaligned and inconsistent across state, territory and local settings (Water Services Association of Australia 2022). This corresponds with drinking water incongruencies between urban and rural/remote contexts. While policy instruments that support Aboriginal and Torres Strait Islander peoples to engage in water reform exist in some places (e.g., National Cultural Flows Research Program (Project 2018)), a systematic focus on knowledge and capacity-building efforts to bolster water management remains inadequate (Commission 2024a). Thus, the complex bureaucracy web that Aboriginal and Torres Strait Islander peoples are expected to navigate reinforces the status quo of inequitable access to safe drinking water across Australia (CSIRO 2023).

While the United Nations acknowledges that access to safe drinking water is a human right, this is not enshrined in Australia's national, state and local legislation (Howey and Grealy 2021). Therefore, the government's inability to provide all Australians with safe drinking water does not inherently constitute a breach of its legal obligations. Thus, all levels of government are not held to account to uphold this human right. This manifests in the distinct drinking water disparity between urban and rural/remote settings, including inconsistent and nonstransparent publication of drinking water quality data (CSIRO 2023). Similarly, while policies acknowledge the cultural, spiritual and economic significance of water for Aboriginal and Torres Strait Islander peoples, including Aboriginal and Torres Strait Islander peoples in decision-making and policy design is not mandated across all system levels. Thus, drinking water policies

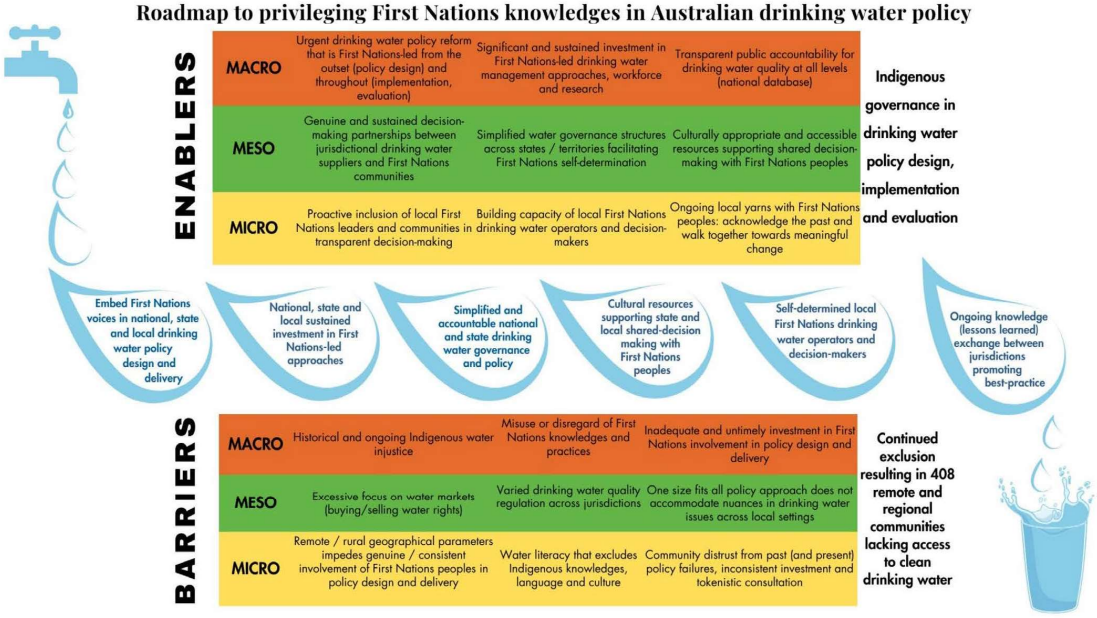


FIGURE 3 | Roadmap to privileging Aboriginal and Torres Strait Islander knowledges in Australian drinking water policy.

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do not meaningfully reflect culturally relevant and place-based knowledges that may inform sustainable outcomes (Jackson and Moggridge 2019). Instead, policies are generally designed to accommodate mainstream society, neglecting the unique needs of Aboriginal and Torres Strait Islander peoples (Water Services Association of Australia 2022). Also, a mutual lack of understanding exists between Aboriginal and Torres Strait Islander communities and water policymakers and managers (Water Services Association of Australia 2022). This is largely due to the exclusion of Aboriginal and Torres Strait Islander knowledges from technical water literacy frameworks, which often fail to grasp water's cultural significance and the ancient knowledges that informed access, use, supply, quality and sustainability for millennia (Moggridge 2021).

We also set out to understand the contextual factors and mechanisms of engaging with Aboriginal and Torres Strait Islander peoples associated with drinking water policy. The context and mechanisms content in the Results section addresses this line of inquiry. While Water Services Association of Australia's report yielded noteworthy findings for our review (Water Services Association of Australia 2022), it remains overlooked that such knowledges have long been disseminated by Aboriginal and Torres Strait Islander authors (Hall et al. 2022; Hall et al. 2021; Moggridge, Beal, et al. 2022a). This signifies the imperative to acknowledge that Aboriginal and Torres Strait Islander peoples hold custodianship over these knowledges, despite the prevailing narrative dominated by non-Indigenous-led research. Notable culturally relevant resources that set the precedence for engaging Aboriginal and Torres Strait Islander peoples in drinking water policy include 'Our Knowledge Our Way' (Woodward et al. 2020), Partnering with Aboriginal and Torres Strait Islander organisations for a sustainable environment' (Energy 2019), and 'National Water Reform 2024 Inquiry report' (Commission 2024a).

5 | Limitations, Future Research

While our search strategy (including database selection and search terms) was extensive, it may not have captured all relevant studies, potentially omitting critical perspectives. However, our continuous yarns refined our findings to inform our programme theory. We were unable to locate local government reports and case studies that comprehensively outlined the contextual factors, mechanisms (enablers and barriers) and outcomes associated with integrating Indigenous knowledges into drinking water policy. While we found Indigenous-led sources that offered valuable insights regarding broader water policy, these did not extend to specific information on drinking water policy. While the rigour of our included case studies may be subject to scrutiny, we relied on their insights to form a basic understanding of how Indigenous knowledges at the local and community levels were integrated into drinking water policy. This highlights a gap in the availability of more robust and peer-reviewed sources on this specific topic. Given the cultural and geographically diverse contexts, our findings are not generalisable to all Aboriginal and Torres Strait Islander communities. The challenge in adequately capturing the full complexity of the system-wide context may have oversimplified nuanced drinking water problems facing Aboriginal and Torres Strait Islander peoples. Also, ongoing policy changes may outdate some of our findings.

Future research could further explore the enablers for co-designing national, state/territory and local drinking water policy with Aboriginal and Torres Strait Islander peoples to inform a roadmap for drinking water for all Australians. This could also encompass an exploration of the barriers policymakers encounter in their pursuit of integrating Aboriginal and Torres Strait Islander knowledges in drinking water policy design. Future research could also look at the impact of system-wide capacity building for Aboriginal and Torres Strait Islander water operators, systems and decision-makers. Also, a longitudinal exploration of the progress and long-term impacts of drinking water policy on the health and well-being of Aboriginal and Torres Strait Islander communities. Assessing the effectiveness of existing policies, such as the NSW Aboriginal Communities Water and Sewerage Program and the QLD Safe and Healthy Drinking Water in Indigenous LGAs Program, could elucidate best practice standards.

6 | Conclusion

Our realist review examined the contextual factors and mechanisms influencing Aboriginal and Torres Strait Islander involvement in drinking water policy. We found that while there is increasing recognition of the importance of engaging Aboriginal and Torres Strait Islander peoples in drinking water policy, current efforts are fragmented and inconsistent across all government levels. Our findings informed our programme theory underpinning the dire situation pertaining to Aboriginal and Torres Strait Islander communities' access to safe drinking water. We presented key enablers to including Aboriginal and Torres Strait Islander peoples in drinking water policy design, implementation and evaluation (e.g., transparent, timely and continuous shared decision-making). We highlighted that generic and tokenistic solutions often fall short, and instead, drinking water policy and implementation should be tailored to local contexts to incorporate the unique cultural nuances. We recommend that future research build on these insights and evaluate current engagement efforts in policy design to advance our understanding and enhance the design and implementation of national, state/territory and local drinking water policy.

Author Contributions

Margaret Apolima Fono: conceptualization, investigation, writing – original draft, methodology, project administration, validation, data curation. **Felicity Chapman**: conceptualization, methodology, data curation, supervision, formal analysis, writing – review and editing, project administration, visualization. **Vita Christie**: conceptualization, methodology, writing – review and editing, formal analysis, project administration, data curation, supervision. **Carmen Parter**: conceptualization, methodology, writing – review and editing, visualization, supervision. **Jodi Knight**: supervision, methodology, conceptualization, visualization, writing – review and editing. **Simone Sherriff**: writing – review and editing, supervision. **Uncle Boe Rambaldini**: supervision, resources. **Bradley Moggridge**: conceptualization, methodology, supervision, writing – review and editing. **Kylie Gwynne**: conceptualization, methodology, supervision, resources, visualization, writing – review and editing.

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The authors acknowledge that the lands on which we live, work and play were never ceded and, therefore, always were and always will be Aboriginal and Torres Strait Islander people's lands. We pay our respects to all Aboriginal and Torres Strait Islander peoples, the traditional custodians of these lands. We honour their profound cultural connection to land, sea, sky and community and commit to reconciliation for all Aboriginal and Torres Strait Islander peoples in their homes, workplaces and social environments. The authors acknowledge the Australian Government Research Training Program Scholarship, Macquarie University, University of New South Wales and Onehealth Organisation (Stephanie Clerc, Benjamin Haynes and Louise Barrett) for their financial support for the corresponding author's PhD studies. Open access publishing facilitated by University of New South Wales, as part of the Wiley - University of New South Wales agreement via the Council of Australian University Librarians.

Ethics Statement

The Australian Institute of Aboriginal and Torres Strait Islander Studies granted ethical approval for this research (#REC-0161).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The authors have nothing to report.

Prior Presentations

No prior presentations.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the manuscript preparation, Author 1 used Grammarly and Copilot to edit and refine early manuscript drafts to enhance readability. After using Grammarly and Copilot, Author 1 reviewed and edited the content as needed and (along with all co-authors) takes full responsibility for the publication's content.

Positionality Statement of the Author Team

Authors 2, 4, 5 and 6 are Co-design Brains Trust (CBT) members. Author 2 is a proud Aboriginal woman (Stolen Generation descendant) living on Ngaro country. Author 2 is dedicated to honouring and preserving the ancient Aboriginal culture and supporting Aboriginal and Torres Strait Islander peoples and communities in sharing their culture (Weavers 2024). Author 2 played a lead role in our study's design, problem posing and data collection, analysis and interpretation stages. Author 4 is a proud Murri woman from Darumbai and Jura clans of the Birra Gubba Nation, born in Bowen, QLD. Author 4 has South Sea Island heritage from Tanna Island in Vanuatu. Author 4 has worked across local communities as a registered nurse, midwife and Aboriginal Women's Health Nurse Practitioner. Author 4 has also worked in national and state government, in child protection, law, justice and health policy and is also affiliated with Djurali (Education 2024). Author 4 played a key role in our study's problem-posing, data synthesis and manuscript drafting. Author 5 is a proud Barkindji woman, raised on Wiradjuri country and living on Dharawal lands, NSW. Author 5 has worked in Government and community-controlled sectors across social and emotional well-being and suicide prevention policy and programme development. Author 5 is dedicated to uplifting Community voices and ensuring self-determination and cultural ways of doing, knowing, being and healing are embedded in policy and programme design, delivery and implementation. Author 5 played a key role in our study's problem posing, design and data synthesis. Author 6 is a Wotjobaluk woman who lives and works on Wiradjuri Country where she is raising her family. Author 6 has worked extensively with the Aboriginal Community Controlled sector in NSW around research and programme design and implementation in the areas of food security, ear health, breastfeeding and child health. SS is passionate about Indigenous data sovereignty and supporting communities to lead research our way. SS provided feedback on the research and manuscript. Author 8 is a Kamilaroi water scientist currently in Academia but has spent many years in Aboriginal water and environmental knowledge/science, research, regulation, policy, across government, academia and private industry. Author 8's research aims to bridge the gap between Aboriginal Traditional Knowledges and Western Science by advocating for culturally relevant and sustainable policies. Author 8 provided feedback on the study approach and manuscript development. Authors 1, 3, 7 and 9 are affiliated with Djurali. Author 1 led this research and identifies as a non-Aboriginal and Torres Strait Islander Australian. Author 1 works in Aboriginal and Torres Strait Islander policy and is deeply committed to equitable policy promoting social justice and meaningful change for Aboriginal and Torres Strait Islander peoples. Author 3 is a non-Aboriginal and Torres Strait Islander Australian. Author 3 has built enduring connections with NSW Aboriginal communities and specialises in translational research in Aboriginal health (Institute 2024c). Author 3 played a key role in our study's design, problem posing and data collection, analysis and interpretation stages and manuscript drafting. Author 7 is a proud Bundjalung Elder from north coast New South Wales. Author 7 has worked across local, state and federal governments, and in the private and nongovernment organisation sector for over 35 years, with the majority of these positions in Aboriginal affairs (Institute 2024). Author 7 supported the research and manuscript development. Author 9 is neither Aboriginal nor Torres Strait Islander and has worked in health and human services for 30 years, building expertise in operational, governance and strategic leadership to tackle complex challenges with priority populations (Institute 2024a). Author 9 played a lead role in the study's conceptualisation and design, and manuscript drafting.

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Appendix A: Quality Assessment results for included studies A

Quality assessment using cultural relevance assessment and JBI Critical appraisal checklist for systematic review

Study 1: A review of drinking water quality issues in remote and Indigenous communities in rich nations with special emphasis on Australia (2023)	**Assessor**		
	Author 2	**Author 3**	**Author 1**
1. Does the research acknowledge and integrate Aboriginal and Torres Strait Islander peoples' knowledges into the research design and findings?	No	No	No
2. Does the research cite Aboriginal and Torres Strait Islander scholars and sources?	Yes* (%?)	Yes	Yes
3. Does the research describe Aboriginal and Torres Strait Islander peoples' specific needs and perspectives?	Partially	Yes	Partially
4. Are there reported outcomes for the Aboriginal and Torres Strait Islander communities involved in the research (including potential or actual benefits)?	No	No	No
5. Does the research build capacity in Aboriginal and Torres Strait Islander communities?	No	No	No
6. Does the research suggest the findings can be applied to improve policies, practices or future research affecting Aboriginal and Torres Strait Islander communities?	Partially	Yes	Yes
7. Are there any commitments to follow-up with the relevant communities post-research?	No	No	No
8. Is the review question clearly and explicitly stated?	Unclear	Yes	No
9. Were the inclusion criteria appropriate for the review question?	Unclear	Yes	Unclear
10. Was the search strategy appropriate?	Unclear	Yes	Unclear
11. Were the sources and resources used to search for studies adequate?	Yes	Yes	Yes
12. Were the criteria for appraising studies appropriate?	Unclear	Unclear	Unclear
13. Was critical appraisal conducted by two or more reviewers independently?	Unclear	Unclear	Unclear
14. Were there methods to minimize errors in data extraction?	Unclear	Unclear	Unclear
15. Were the methods used to combine studies appropriate?	Unclear	Yes	Unclear
16. Was the likelihood of publication bias assessed?	*Unclear	Unclear	Unclear
17. Were recommendations for policy and/or practice supported by the reported data?	Yes	Yes	Yes
18. Were the specific directives for new research appropriate?	Yes	Yes	Yes
Sub-total	**4**	**10**	**5**
Grand-total		**~35%**	

* questionable sources, political bias concern.

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Quality assessment using cultural relevance assessment and JBI Critical appraisal checklist for Textual evidence: expert opinion

Study 2: Drinking water security: the neglected dimension of Australian water reform (2021)	**Assessor**		
	Author 2	**Author 3**	**Author 1**
1. Does the research acknowledge and integrate Aboriginal and Torres Strait Islander peoples' knowledges into the research design and findings?	No	No	No
2. Does the research cite Aboriginal and Torres Strait Islander scholars and sources?	Yes (small %)	Yes	Yes
3. Does the research describe Aboriginal and Torres Strait Islander peoples' specific needs and perspectives?	Partially	Yes	Partially
4. Are there reported outcomes for the Aboriginal and Torres Strait Islander communities involved in the research (including potential or actual benefits)?	No	No	No
5. Does the research build capacity in Aboriginal and Torres Strait Islander communities?	No	No	No
6. Does the research suggest the findings can be applied to improve policies, practices or future research affecting Aboriginal and Torres Strait Islander communities?	Yes	Yes	Yes
7. Are there any commitments to follow-up with the relevant communities post-research?	Unclear	Unclear	No
8. Is the source of the opinion clearly identified?	Yes	Yes	Yes
9. Does the source of opinion have standing in the field of expertise?	Yes	Yes	Yes
10. Are the interests of the relevant population the central focus of the opinion?	Yes	Yes	Yes
11. Does the opinion demonstrate a logically defended argument to support the conclusions drawn?	*Unclear	Yes	Yes
12. Is there reference to the extant literature?	Yes	Yes	Yes
13. Is any incongruence with the literature/sources logically defended?	Unclear	No	Unclear
Sub-total	**6**	**8**	**7**
Grand-total		**~54%**	

* questionable sources, political bias concern.

Quality assessment using cultural relevance assessment and JBI Critical appraisal checklist for systematic review

Study 3: Measuring the gaps in drinking water quality and policy across regional and remote Australia (2022)	**Assessor**		
	Author 2	**Author 3**	**Author 1**
1. Does the research acknowledge and integrate Aboriginal and Torres Strait Islander peoples' knowledges into the research design and findings?	No	No	No
2. Does the research cite Aboriginal and Torres Strait Islander scholars and sources?	Yes (small %)	Yes	Yes
3. Does the research describe Aboriginal and Torres Strait Islander peoples' specific needs and perspectives?	Partially	Partially	Yes
4. Are there reported outcomes for the Aboriginal and Torres Strait Islander communities involved in the research (including potential or actual benefits)?	No	No	No
5. Does the research build capacity in Aboriginal and Torres Strait Islander communities?	No	No	No
6. Does the research suggest the findings can be applied to improve policies, practices or future research affecting Aboriginal and Torres Strait Islander communities?	No	Yes	Yes

(Continues)

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7. Are there any commitments to follow-up with the relevant communities post-research?	No	N/A	No
8. Is the review question clearly and explicitly stated?	Yes	Yes	Yes
9. Were the inclusion criteria appropriate for the review question?	Unclear	Yes	Unclear
10. Was the search strategy appropriate?	Yes	Yes	Yes
11. Were the sources and resources used to search for studies adequate?	Yes	Yes	Yes
12. Were the criteria for appraising studies appropriate?	Unclear	Yes	Unclear
13. Was critical appraisal conducted by two or more reviewers independently?	Unclear	Unclear	Unclear
14. Were there methods to minimize errors in data extraction?	Unclear	Unclear	Unclear
15. Were the methods used to combine studies appropriate?	Unclear	Yes	Unclear
16. Was the likelihood of publication bias assessed?	Unclear	No	Unclear
17. Were recommendations for policy and/or practice supported by the reported data?	Yes	Yes	Yes
18. Were the specific directives for new research appropriate?	Unclear	N/A	Yes
Sub-total	**5**	**9**	**8**
Grand-total		**~41%**	

Quality assessment using cultural relevance assessment and JBI Critical appraisal checklist for Textual evidence: expert opinion

Study 4: Closing the water for people and communities gap improving water services to Aboriginal and Torres Strait Islander remote communities – Full report (2022)	**Assessor**		
	Author 2	**Author 3**	**Author 1**
1. Does the research acknowledge and integrate Aboriginal and Torres Strait Islander peoples' knowledges into the research design and findings?	Yes	Yes	Yes
2. Does the research cite Aboriginal and Torres Strait Islander scholars and sources?	Yes	Yes	Yes
3. Does the research describe Aboriginal and Torres Strait Islander peoples' specific needs and perspectives?	Yes	Yes	Yes
4. Are there reported outcomes for the Aboriginal and Torres Strait Islander communities involved in the research (including potential or actual benefits)?	Yes	Yes	Yes
5. Does the research build capacity in Aboriginal and Torres Strait Islander communities?	Yes	Yes	Yes
6. Does the research suggest the findings can be applied to improve policies, practices or future research affecting Aboriginal and Torres Strait Islander communities?	Yes	Yes	Yes
7. Are there any commitments to follow-up with the relevant communities post-research?	Yes	Yes	Yes
8. Is the source of the opinion clearly identified?	Yes	Yes	Yes
9. Does the source of opinion have standing in the field of expertise?	Yes	Yes	Yes
10. Are the interests of the relevant population the central focus of the opinion?	Yes	Yes	Yes
11. Does the opinion demonstrate a logically defended argument to support the conclusions drawn?	Yes	Yes	Yes
12. Is there reference to the extant literature?	Yes	Yes	Yes
13. Is any incongruence with the literature/sources logically defended?	Unclear	N/A	Unclear
Sub-total	**12**	**12**	**12**
Grand-total		**~92%**	

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Quality assessment using cultural relevance assessment and JBI Critical appraisal checklist for Textual evidence: expert opinion

Study 5: Cultural value of water and western water management: an Australian Indigenous Perspective (2021)	**Assessor**		
	Author 2	**Author 3**	**Author 1**
1. Does the research acknowledge and integrate Aboriginal and Torres Strait Islander peoples' knowledges into the research design and findings?	Yes	Yes	Yes
2. Does the research cite Aboriginal and Torres Strait Islander scholars and sources?	Yes	Yes	Yes
3. Does the research describe Aboriginal and Torres Strait Islander peoples' specific needs and perspectives?	Yes	Yes	Yes
4. Are there reported outcomes for the Aboriginal and Torres Strait Islander communities involved in the research (including potential or actual benefits)?	Yes	No/NA?	Yes
5. Does the research build capacity in Aboriginal and Torres Strait Islander communities?	Yes	No/NA?	Yes
6. Does the research suggest the findings can be applied to improve policies, practices or future research affecting Aboriginal and Torres Strait Islander communities?	Yes	Yes	Yes
7. Are there any commitments to follow-up with the relevant communities post-research?	Yes	Yes	Yes
8. Is the source of the opinion clearly identified?	Yes	Yes	Yes
9. Does the source of opinion have standing in the field of expertise?	Yes	Yes	Yes
10. Are the interests of the relevant population the central focus of the opinion?	Yes	Yes	Yes
11. Does the opinion demonstrate a logically defended argument to support the conclusions drawn?	Yes	Yes	Yes
12. Is there reference to the extant literature?	Yes	Yes	Yes
13. Is any incongruence with the literature/sources logically defended?	N/A	N/A	N/A
Sub-total	**12**	**10**	**12**
Grand-total		**~87%**	

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Appendix B: Acronyms table

Acronym	Definition
ADWG	National Health and Medical Research Council's Australian Drinking Water Guidelines
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
CAWI	Committee on Aboriginal and Torres Strait Islander Water Interests
CBT	Co-design Brains Trust
CMO	Context-Mechanism-Outcome
CREATE	Centre of Research Excellence in Aboriginal Chronic Disease Knowledge Translation and Exchange's
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEECA	Victoria State Government Department of Environment, Energy and Climate Action
DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water
Djurali	Djurali Centre for Aboriginal and Torres Strait Islander Health Research and Education
JBI	Joanna Briggs Institute
LGA	Local Government Area
WSAA	Water Services Association of Australia
TAS	Tasmania, Australia
NT	Northern Territory, Australia
WA	Western Australia, Australia
SA	South Australia, Australia
NSW	New South Wales, Australia
VIC	Victoria, Australia
QLD	Queensland, Australia

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Realist review summary

In summary, our realist review identified discourse that broadly promotes inclusive policy design approaches. Yet, it also uncovered a deficiency in corresponding efforts by national, state/territory and local governments. We consolidated our findings into a roadmap for privileging Aboriginal and Torres Strait Islander knowledge systems in drinking water policy. Our roadmap signifies the imperative for Indigenous governance in drinking water policy design. We also highlight the potential for policy co-design approaches to address the human right to clean drinking water and drive societal change through culturally responsive drinking water policy. These findings pave the way for further research into the macro, meso and micro policy design instruments that can empower Aboriginal and Torres Strait Islander voices to shape drinking water policy design, delivery and evaluation (outlined in Chapter Five's, Future research section). Our insights also inform the development of our culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples, detailed in the following chapter.

Chapter Four: A culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples

This chapter presents our framework, which addresses our research question (*What is the evidence for co-designing policy with Aboriginal and Torres Strait Islander peoples and what evidence-based learnings can support policymakers and Aboriginal and Torres Strait Islander peoples in this fundamental process?*). Our framework synthesises the findings from Chapters one and three into a culturally grounded model. It can guide policymakers and Aboriginal and Torres Strait Islander peoples to incorporate policy co-design into developing culturally responsive policy.

Our framework is a publication titled 'A culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples'. It was published in Policy Design and Practice (Taylor and Francis), on 13 June 2025 (doi: http://dx.doi.org/10.1080/25741292.2025.2514340). Policy Design and Practice (Taylor and Francis) authorised the inclusion of our open access article in this thesis.

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A culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples

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ABSTRACT

Policy development in Australia has often overlooked Aboriginal and Torres Strait Islander knowledge systems, leading to policies that fail to address their unique needs and aspirations. Modern initiatives, such as the National Agreement on Closing the Gap, mark a transformative shift toward integrating Indigenous voices and experiences into policymaking. The existing evidence underscores the importance of co-design in Indigenous policy, underpinned by shared power, strong leadership, and culturally grounded principles. The literature suggests that co-designing policy with Aboriginal and Torres Strait Islander peoples can bridge the gap between Indigenous knowledge systems and policy development, fostering trust and creating meaningful, lasting change. We aim to develop a culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples by employing a framework synthesis approach and yarning methods. Our research question informs our purposive selection and appraisal of culturally relevant studies, data extraction, synthesis and interpretation to produce our framework. Humphrey et al.'s Aboriginal basket weaving framework underpins our framework synthesis method. Our proposed framework aims to amalgamate Indigenous perspectives into policy co-design, ensuring inclusive, effective and culturally informed policies. Our study contributes to the growing body of literature in co-design's public policy domain by introducing an Indigenised model for integrating Aboriginal and Torres Strait Islander ways of knowing, being and doing into modern policy design practices to generate culturally responsive policy. Future framework iterations can inform practical resources to support Aboriginal and Torres Strait Islander peoples and policymakers in meaningful policy co-design.

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Introduction

Background

Historically, policy development within the Australian context has largely disregarded the rich and diverse knowledge systems of Aboriginal and Torres Strait Islander peoples (Shay, Sarra, and Lampert 2023). This exclusion has precipitated profound misunderstandings of policy issues, resulting in policy objectives and implementations that have inadequately addressed the distinct needs and aspirations of Aboriginal and Torres Strait Islander communities (Schwab 1995; Larkin 2006). For instance, Sherriff et al. (2019) research recognises the profound distrust that First Nations peoples harbour toward researchers and policymakers alike (Sherriff et al. 2019). Tuhiwai links this distrust to a history of exploitative and invasive research practices conducted ***on*** Indigenous peoples (Tuhiwai Smith 2021). Christie et al. emphasise the requisite to embrace more culturally safe and inclusive policy frameworks, through their research on the failure of breast cancer policy to address the unique needs of Aboriginal women (Christie et al. 2023).

Recent years have seen a growing recognition of the importance of involving Aboriginal and Torres Strait Islander peoples in the policy-making process. The National Agreement on Closing the Gap (National Agreement) (Coalition of Aboriginal and Torres Strait Islander Peak Organisations and T.A.G 2020) is a landmark framework in Australia, signifying inclusive approaches to Indigenous policy and program development. The National Agreement advocates the need for all governments to genuinely partner with Aboriginal and Torres Strait Islander peoples to effectively address socio-economic disparities they experience. The National Agreement was '*…developed in genuine partnership between Australian governments and the Coalition of Aboriginal and Torres Strait Islander Peak Organisations* (Coalition of Aboriginal and Torres Strait Islander Peak Organisations and T.A.G 2020). The National Agreement epitomises a transformative shift toward privileging Indigenous knowledge systems in addressing issues impacting Aboriginal and Torres Strait Islander peoples. The National Agreement urges governments to embed Indigenous governance in policy design, delivery and evaluation. Similarly, the Productivity Commission's review on the National Agreement calls for foundational reform in government systems. Transformative approaches must aim to engender meaningful and lasting change through mechanisms that enable genuine shared decision-making with Aboriginal and Torres Strait Islander peoples (Commission 2024). However, significant work remains to be undertaken by Australian governments to close the inequitable gaps between Aboriginal and Torres Strait Islander and non-Aboriginal and Torres Strait Islander peoples (Commission 2024).

Co-designing policy

Although not a silver bullet, co-designing policy with Aboriginal and Torres Strait Islander peoples has been regarded as a critical undertaking seeking to bridge the gap between Indigenous knowledge systems and public policy development (Dillon 2021). Co-design emerged in Scandinavia in the 1970s as a way of involving end-users in designing technological products and services (Sanders and Stappers 2008). This innovative design approach set out to consolidate end-user expertise, perspectives and experiences into the product development process. Steen's widely cited work exemplifies how co-design offers end-users a 'voice' to improve product development, idea generation and long-term customer satisfaction (Steen 2013). Co-design has since evolved

into urban planning, architecture (Gaete Cruz et al. 2022) and public administration in liberal democracies, highlighting its adaptability in differing contexts (Watchorn et al. 2024). The growing use of co-design in public administration signifies the shift from top-down bureaucracy toward instilling lived experiences of communities in designing public services (Evans and Terrey 2016). Terry and Evans (Evans and Terrey 2016) argue that co-design is imperative for engaging citizens and stakeholders in policy development. By eliciting valuable insights from citizens, they posit that co-design can enhance governments' understanding of policy problems and create trust between public servants and the communities they serve. Parter's research in decolonising health policy calls for co-designing policy to respectfully privilege Aboriginal and Torres Strait Islander ways of knowing, being and doing (Parter 2021). Parter highlights the significance of the 3Es in Indigenous policy by initiating action (enact), enculturating the policy into routine practices (embed) and cultivating a supportive environment for sustaining and elevating its efficacy (enable) (Parter 2021). Notwithstanding its ubiquity in public sector, effective co-design is contingent on how it is practiced.

Done authentically, co-design can inform the way policy instruments align to the needs and aspirations of priority populations that lead to lasting change. For example, by employing co-design principles, the Remote Food Security Project addressed food insecurity issues with remote Aboriginal communities in Australia (Ferguson et al. 2023). It employed a strengths-based strategy to understanding the communities' lived experiences with food insecurity and collaboratively formulate solutions with the communities.

Done poorly, co-design can be tokenistic, erode trust and fail to achieve its objectives. For example, van Toorn (2024) describes the failure of an Australian government agency to meaningfully co-design with people with a disability in 2016 (van Toorn 2024). The project involved co-designing an artificially intelligent virtual assistant to support people with a disability in accessing various social services. The project's downfall was attributed, in part, to the agency's inadequate inclusion and engagement of people with a disability in the design agenda and process. Therefore, we set out to develop a culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples to guide Aboriginal and Torres Strait Islander peoples and policymakers undertaking this innovative process.

Policy vs. services

Policy and services differ fundamentally in their nature and scope. We highlight this distinction to emphasise our framework's primary focus on the policy domain (Blomkamp 2018). Policies are strategic and long-term, formulated through legislative processes to achieve broad societal impact (Larimer and Smith 2009). In contrast, services are operational and immediate, delivered through administrative mechanisms to address the specific needs of individuals and communities (Spicker 2009).

Existing evidence

We acknowledge the existing evidence for co-designing services with Aboriginal and Torres Strait Islander peoples, predominantly situated in the public health and academic research realms. Anderson et al. delineates best practices for co-designing with First

Nations peoples in a cancer control context (Anderson et al. 2022). Their key principles for co-designing with First Nations peoples include encompassing First Nations leadership, culturally grounded approaches and respecting Indigenous knowledges. Anderson et al.'s findings offer a comprehensive guide to co-design methodologies, effectively translating co-design principles into actionable practice. Similarly, Sherriff et al.'s SEARCH initiative illustrates how genuinely co-creating with Aboriginal peoples can yield meaningful and sustainable research outcomes. They identify nine critical success factors essential for co-design in Aboriginal health research, namely: '…shared power; strong credible leadership; shared vision, shared goals; willingness to take risks; connecting across cultures; empowering the community; valuing local Aboriginal knowledge; ongoing investment and collaboration; and adaptability' (Sherriff et al. 2019).

While studies focusing specifically on co-designing policy are scarce, examples of co-designed policies (e.g., National Aboriginal and Torres Strait Islander Health Plan 2021–2031 (NATSIHP) (Care 2022) and 'Co-design Findings and Next Steps. Child and Family Support System. June–October 2019' (Australia 2019)) offer practical considerations. For instance, Fono et al. describe how such examples underscore the criticality for policy co-design to address complex policy problems and creating enabling conditions for effective collaboration across hierarchical boundaries (Fono, Gwynne, and Rambaldini 2024). They elucidate that despite the challenges of co-designing policy, such pursuits aimed to empower people with lived experience, cultivate authentic shared decision-making and partnerships, and consider accountability and evaluation. Comparably, Fono et al.'s realist review offers an evidence-based roadmap for rooting First Nations peoples' perspectives in drinking water policy. It centers Indigenous governance throughout the drinking water system's interlaced macro, meso and micro policy levels (Fono, Parter, et al., 2025a). Similarly, Fono et al.'s realist evaluation of the NATSIHP posits a context-mechanism-outcome theory to explicate how specific contextual factors and mechanisms interact to produce a national co-designed policy (Fono, Chapman, et al., 2025b). A pivotal insight from Fono et al. realist evaluation urges policymakers to enshrine policy implementation and evaluation into the policy design phase, to closely align the resulting services. Vine et al.'s fundamental Indigenous evaluation principles that promote '…safe, respectful, and valuable' (Institute 2024) outcomes for Aboriginal and Torres Strait Islander peoples have significantly informed evaluation of Indigenous programs (Vine et al. 2023). Collectively, these findings underpin our framework to interweave Indigenous knowledge systems into policy development to generate culturally responsive policies that effectively address the needs and aspirations of Aboriginal and Torres Strait Islander peoples.

Objective

While the evidence illustrates the transformative potential of co-designing culturally responsive solutions, a gap remains for a consolidated framework for co-designing policy with Aboriginal and Torres Strait Islander peoples. Thus, we aim to develop a culturally grounded framework that answers our research question: *What does best practice and an evidence-based approach look like when co-designing policy with Aboriginal and Torres Strait Islander people?* Thus, our framework aims to elevate Indigenous knowledge systems in policy design, implementation and evaluation through showcasing what

meaningful policy co-design looks, sounds and feels like. Thus, we adopt a framework synthesis approach that draws on academic literature, case studies, government reports and research yarning circles to produce our framework. The remainder of our paper details our methodology, presents our findings, discusses our results' implications and concludes with recommendations for future framework iterations.

Language

We adopt the following terms to convey distinct concepts in our research:

Indigenous governance

Dodson and Smith's (2003) highly acknowledged work describes 'Indigenous governance' as the ways in which Aboriginal and Torres Strait Islander peoples, communities or groups make decisions, share power, set goals and assign duties and rules. Accordingly, we use the term 'Indigenous governance to denote Aboriginal and Torres Strait Islander peoples' formal role in a policy co-design process, which is to fundamentally self-determine the policy's design via co-design activities. Essentially, Indigenous governance signifies Aboriginal and Torres Strait Islander peoples' leading role in shaping the policy's design (Dodson and Smith 2003).

Indigenised

We use 'Indigenised' policy to characterise a policy design process that centers Aboriginal and Torres Strait Islander ways of knowing, being and doing. In doing this, Indigenised approaches consequently upend colonial influences (Darlaston-Jones et al. 2014).

Decolonized

We use 'decolonised' policy to describe a policy design process that dismantles or challenges colonial ideologies. Decolonized and Indigenized policy design approaches differ in their to an policy design approach in its aim to remove colonial principles, systems and methods from its policy design process and replacing it with Indigenous cultural influence.

Policy co-design and co-designed policy

We use 'policy co-design' to describe the approach for, or process of, co-designing a policy. We use 'co-designed policy' to describe a policy that has been designed using co-design approaches, and principles (Blomkamp 2018).

Culturally grounded

We use 'culturally grounded' to signify that our Framework is deeply rooted in the sacred Aboriginal and Torres Strait Islander cultural tradition of basket weaving.

Culturally responsive

We use 'culturally responsive' to describe a policy that meets the needs and aspirations of Aboriginal and Torres Strait Islander peoples, as defined by Aboriginal and Torres Strait Islander peoples.

Methods

Framework synthesis

We employed a framework synthesis approach (Barnett-Page and Thomas 2009) to organise and interpret our qualitative data and systematically compare and contrast our findings. This modality supports a culturally immersed approach to answering our research question by our application of Humphrey et al.'s Aboriginal basket weaving theoretical framework (Humphrey, Barlo, and Lasczik 2023). We selected framework synthesis over other decolonial and participatory action research methods as Humphrey et al.'s basket weaving principles and creativity deeply resonated with our Aboriginal and Torres Strait Islander participants. Humphrey et al.'s framework offered a culturally relevant lens for comprehending the complexities of co-designing policy with Aboriginal and Torres Strait Islander peoples.

Humphrey et al.'s Aboriginal basket weaving theoretical framework

Humphrey et al. use a basket weaving metaphor to guide research through a culturally grounded theoretical and methodological approach (Humphrey, Barlo, and Lasczik 2023). Their framework centers relationality, interconnectedness and Indigenous knowledges and practices (e.g., storying and yarning) in data collection, analysis and interpretation. Its five elements are:

1. Core (axiology): provides basket's structural integrity (usually requires a stiffer and/or more tightly woven materials);
2. Grasses (ontology): weave around the core creating the basket's beauty;
3. Steady hands (methodology): maintains basket's tension and shape;
4. Mind (epistemology): requires patience to repeat the weaving pattern and relax into storying and yarning; and
5. Needle (critical/transformative paradigm): connects, pulls and places the grass to attach it to the core.

We selected Humphrey et al.'s Aboriginal basket weaving theoretical framework to present our co-designing policy framework through a decolonising method of western research. We synthesised our data in accordance with Humphrey et al.'s five elements. The axiology is ethically situated in transformative paradigm, suitable for our framework's progressive objective. By drawing on existing evidence, our framework aspires to safeguard co-designing policy participants that navigate and adapt to the dynamic political environments impacting policy design and implementation. The relational ontology and epistemology support our yarning method for cultivating a culturally informed framework that can resonate deeply with Indigenous peoples and policymakers alike. The relational

ontology also underpins the collaboration dimension inherent in co-designing policy, nurturing a strong sense of shared ownership of the collaboration process.

Yarning

In Australia, yarning is an Aboriginal and Torres Strait Islander way of respectfully communicating (Kennedy et al. 2022). By centering Aboriginal and Torres Strait Islander ways of knowing, being and doing, yarning is uniquely distinct from Western qualitative methods, such as focus groups or interviews. Yarning creates culturally safe spaces for people to share knowledge and build connections through storytelling and listening (Kennedy et al. 2022). Bessarab and Ng'Andu (2010) seminal work demonstrates yarning's highly structured nature and different forms (including family, social, therapeutic and collaborative) (Bessarab and Ng'Andu 2010). Bessarab and Ng'Andu also signify yarning's legitimacy as a research method (Bessarab and Ng'Andu 2010). Barlo et al. (2020) elucidate the unique cultural protocols and principles governing yarning in a research setting, that protect yarning participants, their stories and data (Barlo et al. 2020). The cultural protocols encompass "*…gift, control, freedom, space, inclusiveness and gender specificity…*" (Barlo et al. 2020). The cultural principles include "*…reciprocity, responsibility, relationship, dignity, equality, integrity and self-determination…*" (Barlo et al. 2020).

We used two forms of yarning to respectfully engage all participants throughout our study. We undertook yarning circles with our Co-design brains trust (CBT) and collaborative yarning with our research team (Bessarab and Ng'Andu 2010). We followed The Rambaldini Model (Gwynne et al. 2022) of collective impact and used yarning to collect, review and understand our data (Gwynne et al. 2022).

Our CBT provided Indigenous governance for our research. Our CBT is a small group comprising Aboriginal and Torres Strait Islander researchers, Elders and policymakers. Our CBT was purposively recruited to ensure that cultural knowledge, co-design and policy development, and implementation and evaluation expertise were reflected throughout our research. Our CBT guided our research and ensured we privileged Indigenous ways of knowing, being and doing in collecting, analyzing and interpreting our data. Author 1 facilitated regular CBT yarning circles over an eighteen-month period, fostering a culturally safe space for the CBT to implement and monitor our research while sharing and reflecting on successes and learnings.

Additionally, our collaborative yarning with our research team engaged Aboriginal and Torres Strait Islander researchers, Elders and policymakers and non-Aboriginal and Torres Strait Islander researchers and policymakers throughout our research.

Our yarning circles and collaborative yarning prioritised the ethical considerations of cultural safety, respect, reciprocity, informed consent, confidentiality, reflexivity, transparency Indigenous data sovereignty and governance. Ethics approval for our research was provided by the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS, Reference: REC-0161).

Our yarning informed the following stages of our methods:

1. Defining our study's scope and research questions (as delineated in our introduction '*What does best practice and an evidence-based approach look like when co-designing policy with Aboriginal and Torres Strait Islander people?*');

2. Selecting Humphrey et al.'s Aboriginal basket weaving theoretical framework to guide our data analysis and coding process;
3. Purposively selecting evidence to inform our framework;
4. Appraising the selected evidence for relevance and quality to include only high-calibre (i.e., culturally relevant) research in our synthesis;
5. Extracting relevant data which involved data coding;
6. Systematically organising and analysing our extracted data in accordance with Humphrey et al.'s five elements;
7. Synthesising our data from the selected studies to generate novel insights which entailed identifying patterns, themes, and relationships within the data;
8. Interpreting and reporting our findings (as outlined in results section); and
9. Producing a framework to address our research question (as outlined in results section).

Evidence

We purposively searched for valuable insights to answer our research question. We based our search on evidence garnered from our previous policy co-design realist studies (Fono et al. 2025a, 2025b). Both studies explored the policy co-design processes within Indigenous policy contexts. We also searched electronic databases and grey literature sources including Scopus, Indigenous Studies (AIATSIS), Google Scholar, Analysis and Policy Observatory and relevant websites (e.g., Australia and New Zealand School of Government (ANZSOG), Australian Public Service Academy).

We used the following inclusion criteria to inform our selection process:

1. Cultural relevance: studies adopting culturally pertinent approaches, including transferable insights and findings from similar priority populations in other global contexts.
2. Recency: contemporary methods and examples of policy co-design to ensure the understand current approaches. We accepted older studies that described policy co-design's theoretical underpinnings.
3. Methodological rigor and quality: culturally relevant research design and implementation.
4. Relevance to our research Question: evidence that directly addresses our research question, providing applicable insights.

We collectively assessed the quality of our evidence in our CBT yarning circles to determine the agreed evidence sources to include in our analysis.

Results

Evidence

We extracted data from purposively selected evidence sources outlined in Table 1.

Table 1. Evidence sources.

Evidence type	#	Author, Year	Title
Peer-reviewed study (n = 12)	1	Akama, Hagen, and Whaanga-Schollum (2019)	Problematizing replicable design to practice respectful, reciprocal, and relational co-designing with indigenous people
	2	Anderson et al. (2022)	Development of Key Principles and Best Practices for Co-Design in Health with First Nations Australians
	3	Blomkamp (2018)	The Promise of Co-Design for Public Policy
	4	Butler et al. (2022)	A comprehensive review of optimal approaches to co-design in health with First Nations Australians
	5	Christie et al. (2023)	Does breast cancer policy meet the needs of Aboriginal and Torres Strait Islander women in Australia? A review.
	6	Dillon (2021)	Codesign in the Indigenous policy domain: Risks and opportunities
	7	Fono, Gwynne, and Rambaldini (2024)	Co-designing public policy in high-income colonial-settler countries–a systematic review
	8	Fono, Parter, et al., (2025a); Fono, Chapman, et al., (2025b)	Aboriginal and Torres Strait Islander Perspectives in Drinking Water Policy: A Realist Review
	9	Fono, Parter, et al., (2025a); Fono, Chapman, et al., (2025b)	Co-designing Australia's National Aboriginal and Torres Strait Islander Health Plan 2021–2031: a realist evaluation
	10	Ritchie (2021)	The path is made by walking: knowledge, policy design and impact in Indigenous policymaking
	11	Sanders (2002)	Toward an Indigenous order of Australian government: Rethinking self-determination as Indigenous Affairs policy
	12	Sanders and Stappers (2008)	Co-creation and the new landscapes of design
	13	Sherriff et al. (2019)	Building trust and sharing power for co-creation in Aboriginal health research: a stakeholder interview study
	14	Vine et al. (2023)	Culturally Informed Australian Aboriginal and Torres Strait Islander Evaluations: A Scoping Review
	15	Wright et al. (2021)	Co-designing health service evaluation tools that foreground First Nation worldviews for better mental health and well-being outcomes
Book (*n* = 2)	1	Anderson, et al. (2024)	Co-design with Indigenous Peoples
	2	McKercher (2020)	Beyond Sticky Notes
Government report (*n* = 5)	1	Australian Government Department of Health and Aged Care (2022)	National Aboriginal and Torres Strait Islander Health Plan 2021–2031
	2	Australian Government Productivity Commission (2024)	Review of the National Agreement on Closing the Gap: Study Report
	3	Coalition of Aboriginal and Torres Strait Islander Peak Organizations, The Australian Government (2024)	National Agreement on Closing the Gap 2020
	4	Commonwealth of Australia (2017)	My Life My Lead - Opportunities for strengthening approaches to the social determinants and cultural determinants of Indigenous health: Report on the national consultations December 2017
	5	Government of South Australia (2019)	Co-design Findings and Next Steps. Child and Family Support System. June-October 2019
Other (n = 3)	1	Burkett (2012)	An Introduction to Co-design
	2	Mark and Hagen (2020)	Co-design in Aotearoa New Zealand: a snapshot of the literature
	3	Parter (2021)	Decolonizing public health policies: rightfully giving effect to Aboriginal and Torres Strait Islander peoples' knowledges and cultures of ways of being, knowing, and doing in public health policies

The color shades differentiate the evidence type (i.e., Peer-reviewed study, Book, Government report, Other).

Data synthesis

This section presents our synthesised data in the form of our culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples (Framework), as outlined in Figure 1. We developed our Framework in accordance with Humphrey et al.'s five framework elements and re-arranged the element sequence to align with our Framework's objectives.

Mind

The weaver's mind visualises the basket's shape, texture, appearance and functionality by prudently introspecting, evaluating and testing the interconnectedness of its constructs. Analogous to co-designing policy, our Framework's mind requires cultural, political and intellectual insight to envision, plan and ultimately determine the policy's design. Thus, Figure 2 illustrates how the mind embodies the collective expression of perspectives to underpin our entire Framework. The mind anchors the policy in relationality and entwines relational thinking (Akama, Hagen, and Whaanga-Schollum 2019) throughout by critically examining where decision-making power, control and funding are situated before, during and after policy design—questioning who benefits at each stage. This scrutiny parallels the tactful positioning of each strand of grass in a woven basket. The mind must incorporate a mixed array of Aboriginal and Torres Strait Islander voices so that beneficiaries can see themselves reflected in the policy (Ritchie 2021). Our Framework prioritises reciprocity by upholding transparent decision-making that privileges Indigenous contributions, thereby recalibrating traditional power structures toward centering community needs. The mind fosters a creative and innovative approach to reimagining transformative, culturally relevant policy instruments that can tackle ingrained systemic and structural issues, such as racism and colonial trauma (Commonwealth of Australia 2017). Our Framework requires



Figure 1. Culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples.

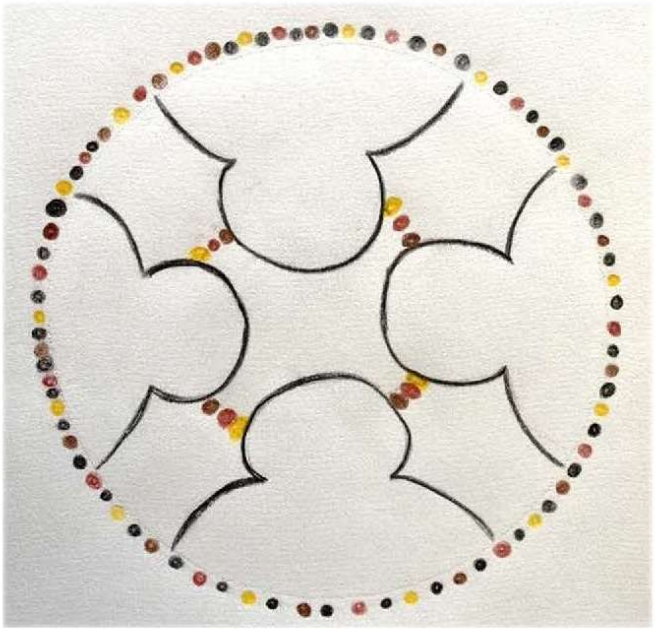


Figure 2. Mind (by Siosifa Fono).

participants to persistently adjudicate their unconscious and conscious biases. This means participants (particularly policymakers) must emulate humility in unlearning deeply entrenched false assumptions through cultural training and ongoing reflective practices. Thus, reflexivity underscores the mind's crucial role in shaping policies deeply rooted in Aboriginal and Torres Strait Islander ways of knowing, being and doing.

Core

Just as every woven basket needs a core, all co-designed policies require a resilient foundation characterised by co-design principles in policy design, delivery, and evaluation to sustain outcomes for Aboriginal and Torres Strait Islander peoples. In upholding Indigenous peoples' right to self-determination (Cambou 2020), our Framework's core endorses the inclusion of Aboriginal and Torres Strait Islander peoples' expert contributions from the policy problem identification stage. Throughout the weaving process, the core can sometimes become hidden, so Aboriginal and Torres Strait Islander ways of knowing, being and doing must be meaningfully incorporated to ensure its visibility from the very beginning and throughout. The core's hallmark will heavily influence the policy co-design process, precluding mis-informed assumptions regarding the policy problem context (Butler et al. 2022). The core also symbolises the foundational cultural values upon which the subsequent co-design process is built. Such principles immerse policy design, delivery and evaluation in Indigenous knowledge systems and practices, including Indigenous Data Sovereignty (Anderson et al. 2022), Indigenous Cultural Intellectual Property (Janke 2024), and Indigenous Evaluation (Wright et al. 2021).

Thus, the core embodies the co-design participants themselves, their roles and responsibilities, and the agreed non-negotiables for how they expect to work together.

These measures mitigate the influence of individual personalities that may lack robust leadership qualities or fail to uphold cultural principles. For example, Aboriginal and Torres Strait Islander peoples' voices should be privileged as they represent the lived experiences of navigating inequities arising from ineffective legacy policies (Anderson, et al. 2024). Similarly, irrespective of their bureaucratic rank or experience, policymakers are expected to cede or share decision-making authority and willingly embrace the associated risks (Deserti, Rizzo, and Smallman 2020).

The core's robustness sets the tone for collaboration, sustains relationships and reflects the resilience and adaptability required in co-designing policy. Therefore, Figure 3 illustrates our Framework's core which is anchored in co-design theory, addressing the frequent invocation of 'co-design' in public contexts which often lacks robust theoretical reason. The collective co-design theoretical underpinnings (Sanders and Stappers 2008; Burkett 2012; Akama, Hagen, and Whaanga-Schollum 2019; McKercher 2020) can inform participants of what co-design does and does not encompass. For example, co-designing policy integrates many and various Indigenous perspectives and knowledge systems from policy problem identification to evaluation, facilitating a holistic approach to addressing the unique needs and aspirations of Indigenous peoples (Sharmil et al. 2021). This empowers communities by involving them directly in decision-making, augmenting their acceptance and active support for its delivery. Similarly, communal weaving is a cultural activity involving multiple weavers contributing to an individual woven piece (Edmonds, et al. 2020). Different materials and weaving styles coalesce into its sturdy core. Its participatory approach parallels co-designing policy, championing a shared sense of ownership and emphasising reciprocity where everyone can contribute and benefit.

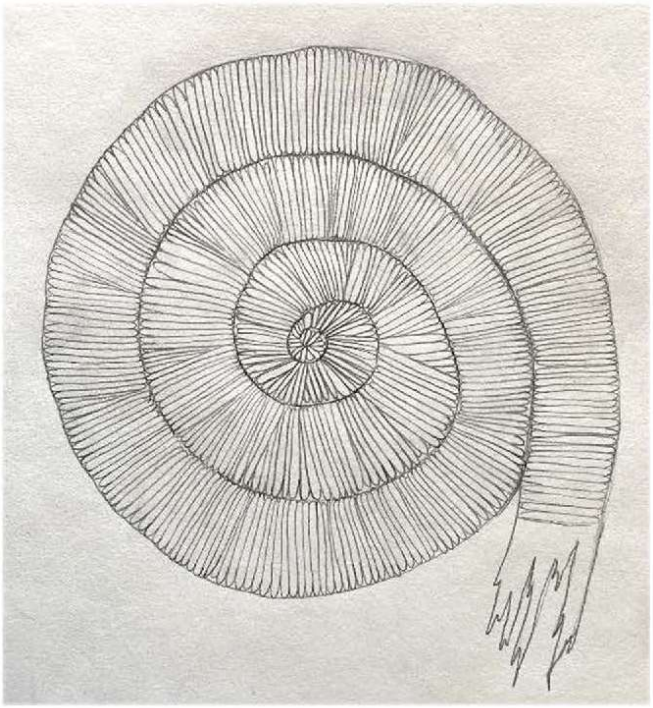


Figure 3. Core (by Siosifa Fono).

Hands

Our Framework's hands symbolise Indigenous governance and cultural agency, depicted in Figure 4. Co-designing policy must be Indigenous-led so that policy delivery, evaluation and accountability mechanisms (e.g. sustained funding) are woven throughout the policy's design. This ensures such constructs are not relegated to secondary considerations, which is often the case (Fono, Parter, et al. 2025a; Fono, Chapman, et al. 2025b). Just as hands select, gather and connect natural elements (e.g., grasses, leaves) in a woven basket, our Framework meaningfully harmonises culturally relevant knowledge systems with the policy's constructs. Specifically, the hands ascertain the grass' interconnectedness to determine how tightly or loosely the weaving flows from the core throughout the basket. Thus, they decide the extent to which participants' (e.g., Indigenous participants and policymakers) voices are woven into the policy's fabric. This influences how beneficiaries see themselves in the resultant policy and determines their acceptance and advocacy. Similarly, communal weaving (where everyone works on the same piece), allows observers to read the resultant weave and see the changeovers of hands reflected in different styles, tensions, and color choices. Just as this collective effort enriches the tapestry through diverse input, policy co-design nourishes a shared sense of ownership and empowerment. The co-design process' adaptability is also reflected in how the hands adjust needle's and grass' tension, direction, and placement. Adopting different techniques can strengthen the collaboration dynamics required for co-designing that consistently responds to the community's needs.

Grass

The grass and other natural weaving materials (e.g., leaves Figure 5) signify Aboriginal and Torres Strait Islander peoples' profound and continuous connection to the land

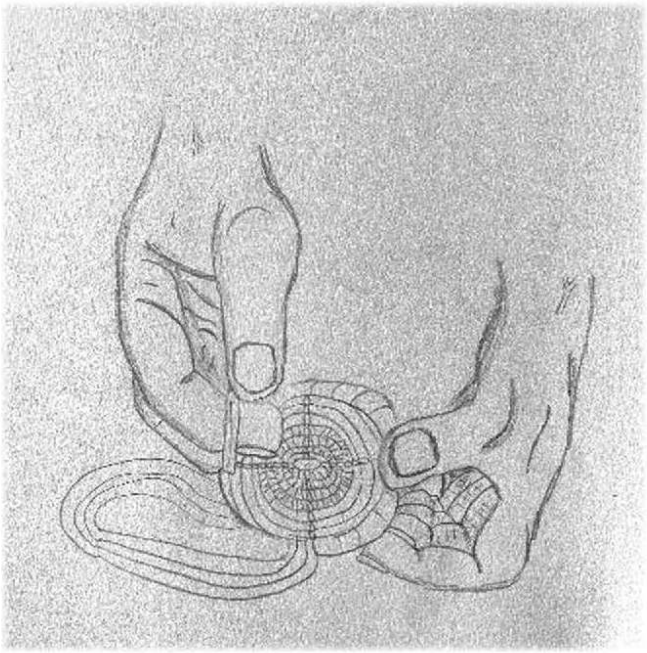


Figure 4. Hands (by Siosifa Fono).

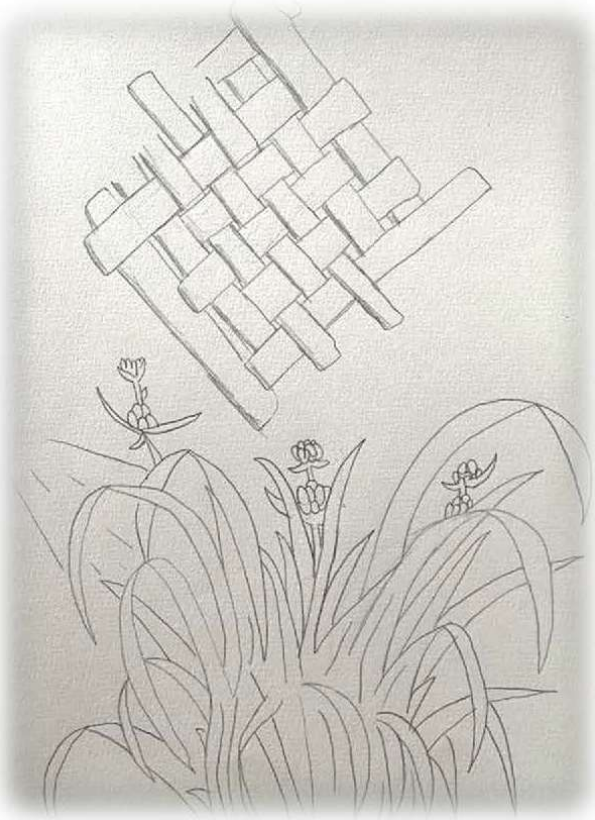


Figure 5. Grass (by Siosifa Fono).

and their environment. Just as the type of natural weaving materials determines the basket's resilience and adaptability, our Framework's capacity to withstand changing political circumstances and other challenges is dependent on the participants' voices informing the policy content. In weaving, the grasses possess their own narratives that deserve to be heard and not silenced. While weavers may have a preconceived vision, they must yield to the grasses, allowing their stories to take precedence. Consequently, the final creation may diverge markedly from initial expectations, embodying the true essence of the plants. Similarly, our Framework's mind, hands and needle need to be adaptable to centering Indigenous voices. These strands also symbolise the assortment of voices collaborating to shape policy content, structure, delivery, and evaluation, highlighting the importance of inclusivity and representation. Thus, yarning and storying are imperative to co-designing culturally informed policy as they preserve respectful and safe spaces for honest, open, non-linear and free-flowing dialogue to deeply enhance policymaker's understanding of complex policy problems (Bessarab and Ng'Andu 2010). Our framework's inclusivity principle also prompts participants to question who is missing from the decision-making table to vouch for robust and representative yarning and storying. This is especially critical for effectively representing the extensive diversity of cultural groups within Aboriginal and Torres Strait Islander communities.

Needle

The needle (Figure 6) represents the essential tools and resources required for co-designing policy, such as funding and facilitation methods like workshops. The needle relies on the hands for direction and control and helps to bring the mind's visions to life through careful and precise weaving. It facilitates the creative policy co-design process by bringing together participants' voices to contribute to a cohesive and well-informed policy. The needle executes the technical processes necessary to maintain the basket's integrity, symbolising the meticulous policy design. The needle also symbolises the pen writing the policy, which policymakers must be willing to surrender or share with Aboriginal and Torres Strait Islander peoples to uphold Indigenous governance. Different needles can be used for various tasks, reflecting the distinct roles and techniques (e.g., configuring feedback loops such as mid-term evaluation) required depending on the policy design requirements. This adaptability underscores the importance of using appropriate tools and methods to meet the specific needs of the policy and the community it serves. The needle carefully fuses these elements to secure inclusive, culturally relevant, and effective co-designed policy.

Our Framework

Figure 7 depicts our resultant Framework, integrating the above components into a cohesive paradigm for co-designing policy with Aboriginal and Torres Strait Islander peoples.

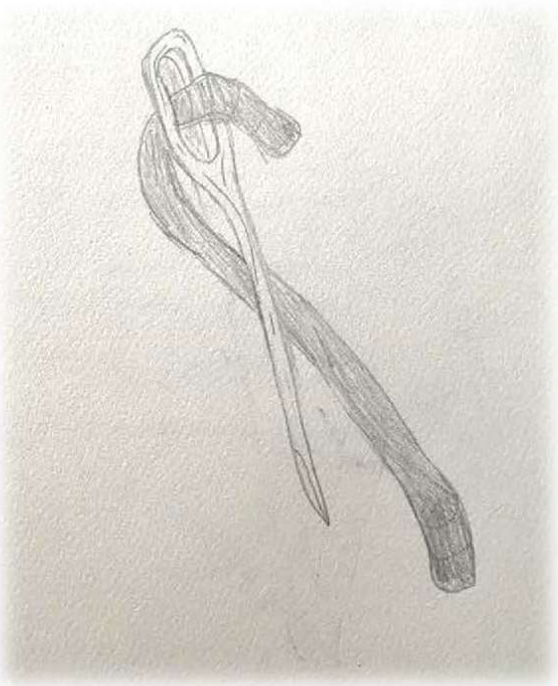


Figure 6. Needle (by Siosifa Fono).

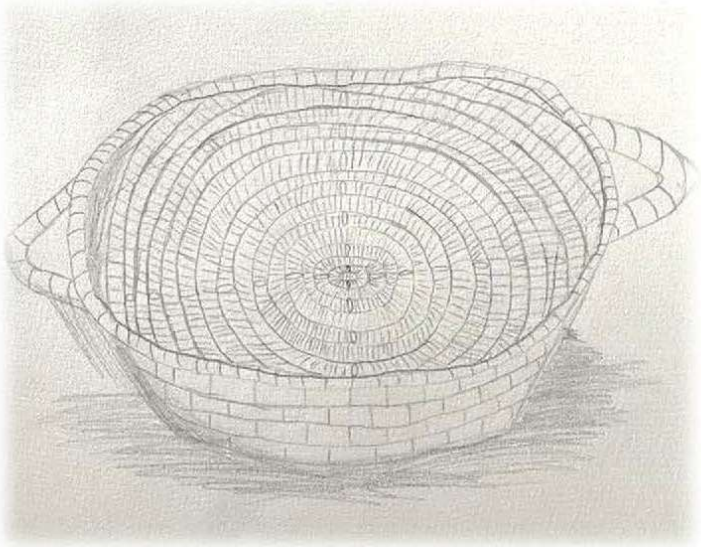


Figure 7. Aboriginal woven basket (by Siosifa Fono).

Framework application

Table 2 outlines how the NATSIHP's policy co-design process demonstrates our Framework elements in practice (Fono et al. 2025). Each framework element can be illustrated across various aspects of the NATSIHP's co-design processes. However, most elements are interconnected and woven throughout the entire process (e.g., centering Aboriginal and Torres Strait Islander ways of knowing, being and doing), while others are time-specific (e.g., bipartisan support required from the NATSIHP's inception).

Discussion

Culturally grounded framework

Our Framework takes a crucial step toward a future where policies are not only inclusive, but also deeply rooted in the cultural wisdom of Aboriginal and Torres Strait Islander peoples. Our Framework equips policymakers with an Indigenous policy design approach to building culturally responsive policies reflecting Aboriginal and Torres Strait Islander peoples' knowledge systems and aspirations (Ritchie 2021). The National Agreement's Priority Reform Three 'Transforming government organizations' requires governments to transform their approaches to improving life outcomes for Aboriginal and Torres Strait Islander peoples (Government 2024). Thus, indigenised or decolonised policy design are imperative for effectively closing the gap in inequities faced by Aboriginal and Torres Strait Islander peoples. Indigenisation integrates Aboriginal and Torres Strait Islander knowledges, practices into a process to promote self-determination, culture and identity (McIver et al., 2022; Darwin 1988). Comparatively, decolonisation involves unlearning and dismantling colonial

Table 2. Framework in practice.

Framework element	Application in co-designing the NATSIHP
1. Mind	Our framework's mind is characterised by the Department of Health and Aged Care's (Department): • Commitment to the National Agreement on Closing the Gap. • Bipartisan support for Aboriginal and Torres Strait Islander-led policy design. • Risk-embracing stance for an unconventional yet innovative policy co-design approach. • Genuine collaboration with Aboriginal and Torres Strait Islander peoples in critical policy design mechanisms. For example, the Co-Chair structure of the NATSIHP working group positioned Aboriginal and Torres Strait Islander peoples as equal decision-making partners in all policy development phases, from the outset. This centered Aboriginal and Torres Strait Islander ways of knowing, being and doing and established a relational foundation for shared decision-making, creativity and self-determination throughout the policy co-design. • Investment (of time and resources) into building meaningful relationships with and Aboriginal and Torres Strait Islander communities impacted by the policy problem. • Flexibility with policymaking time constraints. • Willingness to enhance staff cultural capability and reflexivity.
2. Core	Our Framework's Core is embodied by the: • Policy actors involved in co-designing the NATSIHP, namely ministerial office, the Department and Aboriginal and Torres Strait Islander peoples. • Aboriginal and Torres Strait Islander health sector's (sector) non-negotiable ways of working, which established the conditions for the policy co-design process. • Culturally safe environment that enabled Aboriginal and Torres Strait Islander peoples to share their experiences and opinions openly without adverse consequences. • Department's cultural capability training and mentoring that fostered respectful, strengths-based, and effective communication with the sector.
3. Hands	Our Framework's Hands are symbolised by the NATSIHP's Indigenous governance, which cultivated cultural agency throughout the community consultations, policy decision-making and policy content. Indigenous governance gave rise to Aboriginal and Torres Strait Islander-led dialogue, such that policy content addressed pertinent issues such as systemic racism, culturally safe healthcare and prioritising Aboriginal and Torres Strait Islander-led service delivery.
4. Grass	Our Framework's Grass is illustrated by the extensive Aboriginal and Torres Strait Islander-led "My Life My Lead" consultations (Cambou 2020). Around 600 Aboriginal and Torres Strait Islander participants took part in these consultations, which focused on the social and cultural determinants of health. Participants shared their lived experiences to inform the design, delivery and evaluation of health policies and programs. Key insights that shaped the NATSIHP's development were the pivotal role of culture in wellbeing and *"…governments cannot ignore factors such as the home environment, school and educational attainment, employment, community and experiences of social institutions and systems, and their corresponding influences on a person's health."* (Cambou 2020). Weaving these perspectives throughout the NATSIHP aimed to honour Aboriginal and Torres Strait Islander voices.
5. Needle	The My Life My Lead findings shaped the NATSIHP's policy co-design approach. The tools and resources required to support the policy co-design included meetings (in-person and virtual) that suited the sector, support for Aboriginal and Torres Strait Islander-led policy writing (e.g., departmental administrative support), and participant remuneration. These policy co-design aspects represent our Framework's Needle and highlight the need for a policymaker's openness, flexibility and creativity in empowering Aboriginal and Torres Strait Islander people to genuinely co-design policy.

ideologies to address colonisation's lingering effects (Darwin 1988; Gopal 2021). Both transformative approaches are distinct and complex ways of improving systems and processes to achieve better outcomes for Aboriginal and Torres Strait Islander peoples (Sefa Dei and Cacciavillani 2024). Our Framework represents an indigenised approach to designing policy as it does not start with, dismantle or fit into prevailing colonial policy design paradigms. Rather, it is a culturally grounded approach that weaves Indigenous knowledge systems, cultural practices and perspectives into policymaking, and subsequent service implementation and evaluation—from the beginning of the policy's development. Thus, our Framework aspires to yield culturally responsive

policies that deeply resonate with and effectively address the inequitable lived experiences of Aboriginal and Torres Strait Islander peoples. More importantly, its relational bedrock pursues stronger and lasting connections between communities and government institutions to naturally fabricate sustainable and impactful outcomes. Moreover, our Framework advances the quest toward self-determination, which the National Agreement regards as the ultimate benchmark for closing the gap and addressing historical injustices to achieve equity and reconciliation.

Practical relevance

While translating a cultural metaphor (e.g. Aboriginal weaving basket) into language that policymakers can grasp is challenging, policymakers need to firstly acknowledge our Framework's cultural significance in policy co-design. Few examples of policy co-design exist to highlight how policymakers can apply our Framework. However, Table 2 (Results) showcases practical ways policymakers have demonstrated our Framework elements. Essentially, policymakers must first setup the conditions to enact our Framework. This begins with investing time and resources into establishing meaningful and lasting relationships with Aboriginal and Torres Strait Islander peoples. This means meeting with Aboriginal and Torres Strait Islander peoples where they are at and on their terms. This may require policymakers to engage with Aboriginal and Torres Strait Islander peoples, communities and sectors beyond standard working hours and typical workplace environments. While some public agencies and policymakers have varying degrees of connections with Aboriginal and Torres Strait Islander peoples, communities and sectors, the time to establish and or fortify these bonds is now. This also involves policymakers partnering with counterparts within and across respective policy domains. This step is critical to garnering holistic and diverse perspectives of policy issues that Aboriginal and Torres Strait Islander peoples face and minimise inefficiencies. Our research shows how stronger relationships can improve policy design and enrich policymaker perspectives, by integrating Indigenous knowledge systems and lived experiences that would otherwise be neglected. Another key condition to enacting our Framework is enhancing policymaker cultural responsiveness through mandatory and regular cultural training. Australian Public Service (APS) employees are required to maintain and update certain essential qualifications, knowledges and skills such as 'Integrity in the APS' (Academy 2024). Similar training should also be mandatory for public servants working in policy areas impacting Aboriginal and Torres Strait Islander peoples. This ensures culturally responsive policy co-design approaches, outputs and impacts.

Benefits

Our Framework's implications are profound and multifaceted. Firstly, meaningfully implementing our Framework can facilitate policy design, delivery, and evaluation that are fit for purpose and culturally responsive to the needs and aspirations of Aboriginal and Torres Strait Islander peoples. Systems that enable genuine Indigenous-led policy co-design can enhance community trust and buy-in, leading

to empowered and more engaged communities with a stronger sense of belonging and greater participation in public initiatives. Additionally, better policy outcomes can strengthen policymaker credibility and contribute to a strengths-based discourse pertaining to policy co-design. Our Framework also promotes robust decision-making mechanisms by incorporating diverse and previously ignored perspectives, including lived experiences, and encouraging bold exchanges and innovative solutions. Finally, by involving communities from the outset, our Framework mitigates resource inefficiencies, ensuring more effective policy implementation.

Framework implementation challenges

While we present an opportunity for policymakers and Aboriginal and Torres Strait Islander peoples to embrace community-led policymaking, we recognise three challenges for implementing our framework in a public setting. Firstly, policymakers may be hesitant to embrace our framework as it is an unfamiliar approach that lacks precedence. This reluctance could stem from governments' low-risk appetite for innovative methods and a preference for conventional approaches (Potts 2009). Also, since cultural responsiveness varies across public contexts, some agencies may have more capacity to adopt and tailor our Framework than others. To overcome this, the National Agreement urges all government agencies to embrace the priority reform areas and fundamentally shift their attitude, willingness and approaches to supporting self-determination. Secondly, just as no two woven baskets are ever the same, co-designed policies will inherently differ. This highlights the unique political, bureaucratic and cultural contexts and mechanisms influencing their design. While a co-designed policy's characteristics are likely the product of participant contributions, they are more likely a reflection of the distinct contextual (e.g., political) landscape at a point in time. Therefore, institutional mechanisms and systems that can enact our Framework (e.g., shared decision-making between policymakers and Aboriginal and Torres Strait Islander peoples, depicted in Figure 3) are pivotal to its success (Ritchie 2021). They can insulate policy co-design from individual leader idiosyncrasies and unstable political landscapes. Thirdly, Aboriginal and Torres Strait Islander peoples have historically faced repeated disappointments from government initiatives, leading to a deep-seated mistrust. This poses a significant challenge for governments to engage Aboriginal and Torres Strait Islander peoples in co-design processes. Addressing this requires policymakers to genuinely empower Aboriginal and Torres Strait Islander voices by investing in respectful, transparent and consistent engagement that effects tangible outcomes.

Framework limitations

We acknowledge that our Framework is a version one scaffold that serves as a foundation for constructing future iterations. However, as policymakers tailor our Framework to their specific bureaucratic environments, it is critical to preserve its fundamental constructs (Mind, Core, Hands, Grass, Needle). For instance, policymakers could develop enacting frameworks to support implementing our Framework. This could involve cultural competency training. Future iterations could also translate Framework elements into specific resources that provide Aboriginal and Torres Strait Islander

communities with a clear understanding of what to expect from policymakers who wish to co-design policy with them. This form of knowledge translation is vital for empowering Aboriginal and Torres Strait Islander communities to actively participate in co-designing policy by advocating for their unique needs and aspirations. Future versions could also be strengthened with worked examples (e.g., case studies) and lessons learnt. Such iterations must advocate for Indigenous-led dialogue, respectful remuneration to value community representatives, culturally safe spaces for yarning and storytelling, and policymaker (or departmental staff) reflexivity to ensure policy co-design is respectful, effective and sustainable. Future research could also examine our Framework's application, as a development tool for policymakers in achieving tangible outcomes for Aboriginal and Torres Strait Islander peoples.

Conclusion

In conclusion, we present a culturally grounded framework for co-designing policy with Aboriginal and Torres Strait Islander peoples. We employed framework synthesis, guided by Humphrey et al.'s Aboriginal Basket Weaving Theoretical Framework, to uphold relationality, interconnectedness and Indigenous knowledge systems in our Framework. We used yarning as a data collection method, engaging Aboriginal and Torres Strait Islander researchers, Elders and policymakers in collaborative discussions to inform our Framework. Our Framework elements (mind, core, hands, grass and needle) epitomise an indigenised way of integrating cultural knowledge systems in policies to foster sustainable and impactful outcomes. Implementing our Framework presents several challenges such as policymakers' hesitancy, unfavorable bureaucratic mechanisms and Aboriginal and Torres Strait Islander peoples' legitimate mistrust of governments. However, future framework iterations can support policymakers to enact our Framework to strengthens genuine partnerships, advance shared decision-making and impactful policies for Aboriginal and Torres Strait Islander peoples. Essentially, our Framework is a call to action for policymakers to move beyond traditional approaches and embrace a culturally enriched process to facilitate lasting and meaningful change toward closing the gap.

Declaration of generative artificial intelligence in the writing process

During the manuscript preparation, Author 1 used Grammarly and Copilot to edit and refine early manuscript drafts to enhance readability. After using Grammarly and Copilot, Author 1 reviewed and edited the content as needed and (along with all co-authors) takes full responsibility for the publication's content.

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Framework summary

Our Framework publication answers our research question (*What is the evidence for co-designing policy with Aboriginal and Torres Strait Islander peoples and what evidence-based learnings can support policymakers and Aboriginal and Torres Strait Islander peoples in this fundamental process?*). The Framework also illustrates our culturally relevant findings, policy implications, benefits, limitations and practical recommendations for policymakers and Aboriginal and Torres Strait Islander peoples alike. We acknowledge the novelty of our Framework as a crucial first step and delve into a deeper discussion of its relevance, implications and future research opportunities in the following chapter.

Chapter Five: Discussion and Conclusion

5.1 Overall findings

We set out to analyse the evidence of Indigenous policy co-design and develop a framework to equip policymakers and Aboriginal and Torres Strait Islander peoples in co-designing culturally responsive policy.

We found that colonial policy design approaches perpetuate historical inequities and harm Aboriginal and Torres Strait Islander peoples. Policymakers have failed to recognise the significant impact of Western biases on policy design and subsequent funding, programs, and outcomes for Aboriginal and Torres Strait Islander peoples. Moving forward, a transformative shift is needed for developing culturally responsive policy that meets the needs and aspirations of Aboriginal and Torres Strait Islander peoples. Co-designing policy provides a means to accomplish this. While the rhetoric appealing for co-designing with Aboriginal and Torres Strait Islander peoples is becoming more widely acknowledged, progress is disjointed and inconsistent, and tokenistic in many cases.

This thesis broadens the scope of existing knowledge by consolidating best-practice evidence into a culturally grounded framework to support policymakers to co-design policy with Aboriginal and Torres Strait Islander peoples. Our Framework also empowers Aboriginal and Torres Strait Islander peoples to hold policymakers accountable to culturally responsive standards of policy co-design. We found that the

key framework implementation challenges include policymaker hesitancy and cultural unresponsiveness, conventional hierarchical political and bureaucratic contexts, and community mistrust.

5.2 Key findings

There are five key findings in this research.

Key finding 1: Co-design holds significant potential for enhancing the design and impact of complex policy impacting Aboriginal and Torres Strait Islander peoples.

Our research determined co-design's pivotal role in:

- Tackling highly complex policy problems spanning a breadth of policy domains (e.g., health, education, justice),
- Including and addressing diverse stakeholders' perspectives, and
- Responding to historical and systemic failures.

Four prerequisites are essential for effective policy co-design.

1.1 Policy co-design is not a one-size-fits all approach. Rather, core co-design tenets (e.g., inclusivity, valuing and empowering voices of people with lived experience and shared decision-making power) underlie a bespoke policy co-design process appropriate for different contexts. This means that it is incumbent on policymakers to meet Aboriginal and Torres Strait Islander peoples where they are at and to support them to authentically participate – not the reverse. This signifies the flexibility and innovative techniques required of policymakers to meaningfully engage Aboriginal and Torres Strait Islander peoples. Our systematic literature review highlights how policymakers' decision to hold co-design workshops via zoom excluded people who did not have access to digital technology from the process. Neglecting their viewpoints exposed the policy to the risk of being out of touch, ineffective, or even detrimental to those they intended to help. The need for inclusive collaboration was also evident in our realist review. It highlights the drinking water access disparity between Aboriginal and Torres Strait Islander peoples living in rural and remote, in comparison to people living in urban communities. Policymakers can support Aboriginal and Torres Strait Islander people with unconventional tools that allow them to fully participate and express themselves, rather than reverting to communication tools typically used in didactic settings (e.g., PowerPoint presentations, long reports). Our Framework supports McKercher's promotion of visual, kinaesthetic, oral techniques and in-language resources that can elevate participants to proactive collaborators [99]. Also, our protocol's adoption of storytelling, yarning, yarning circles and meeting on Country has culturally grounded our research in cultural practices that deeply resonate with Aboriginal and Torres Strait Islander peoples.

1.2 Policymakers (and their agencies) must be willing to co-design policy with Aboriginal and Torres Strait Islander peoples. Our realist review and realist evaluation found that policymakers differ in their appetite for and readiness to meaningfully co-design policy with communities. Similar to Adler's Ladder of Engagement, this shows that policymakers exhibit varying co-design maturity [51]. We discovered that policymakers can assess their individual, team and organisational co-design maturity using Blomkamp's Co-Design Maturity Model [100] . The model serves as an optimal starting point for assessing a policymaker's capability to implement our Framework. For example, according to Blomkamp's model, Aboriginal and Torres Strait Islander peoples' role in drafting the NATSIHP, resembles the Australian Department of Health and Aged Care's (Department) high co-design maturity. Their willingness and ability to yield decision-making power and remunerate Aboriginal and Torres Strait Islander participants models best-practice policy co-design. Contrastingly, drinking water policymakers displayed a lower co-design maturity. National, state and local drinking water policies indicate an awareness of the need for co-design, but this has not translated into purposeful action privileging Aboriginal and Torres Strait Islander knowledge systems.

1.3 Sharing decision-making power with Aboriginal and Torres Strait Islander peoples in a public context is not only possible, it is essential. Our realist studies and Framework supports the Australian Government Productivity Commission's Review of the National Agreement (2024) which states that '*Most critically, the (National) Agreement requires*

government decision-makers to accept that they do not know what is best for Aboriginal and Torres Strait Islander people.' [73, p. iii]. Moreover, our findings align with the Productivity Commission's recommendation that '*Power needs to be shared*.' [73, p. 7]. Indigenous policy legitimacy and responsiveness depends on Aboriginal and Torres Strait Islander knowledge systems guiding the discourse. Indigenous governance and community-led narratives and determinations are fundamental requisites of policy co-design. Such governance frameworks must clearly delineate roles, responsibilities and decision-making protocols so that no person can dominate the process. This demonstrates the practical implication of Dillon's (2021) viewpoint that effective policy co-design involves acknowledging and addressing the structural power imbalances between Aboriginal and Torres Strait Islander peoples and policymakers [97].

1.4 Our Framework's 'Mind' element outlines the need for policymakers and Aboriginal and Torres Strait Islander participants to collaboratively establish the policy co-design process and agreed expectations at its inception. This can be attributed to policymakers inconsistently interpreting the meaning of co-design and, more importantly, the action it warrants (and does not warrant). Our realist evaluation shows that an early, clear and shared understanding of how Indigenous policy will be co-designed addresses this and is pivotal to its success. This insight substantiates Blomkamp's (2018) and Evans and Terry's (2016) advice to involve people impacted by policy problems as early as possible (i.e., from problem definition stage) and throughout, to create shared expectations and proactively mitigate risks [77, 79].

Key finding 2: Policymakers must be culturally responsive to enact the conditions for co-designing policy with Aboriginal and Torres Strait Islander peoples.

A person's cultural responsiveness can be measured using a cultural capability continuum [101]. The continuum begins with cultural awareness which is a basic understanding of Aboriginal and Torres Strait Islander cultures and knowledges. It then progresses to a person's ability to reflect on personal values, biases and attitudes based on their cultural awareness. It then advances to cultural responsiveness where a person's values and skills actively seek to enhance outcomes for Aboriginal and Torres Strait Islander peoples [102]. Simply possessing leadership expertise and cultural awareness is not enough to effectively co-design policy with Aboriginal and Torres Strait Islander peoples. Each person's individual journey toward cultural responsiveness never ends. It requires us to take time and focus intently when learning about and appreciating Aboriginal and Torres Strait Islander peoples, their cultures and knowledge systems. For example, Aboriginal and Torres Strait Islander peoples do not exist as monolithic groups. Rather, Aboriginal and Torres Strait Islander peoples experience inequities in intersecting ways. Policymakers must recognise the compounding impacts of race, gender, disability, age, and economic status so that policies do not unfairly benefit one group while neglecting others. This means that policymakers must understand how to create and maintain culturally safe spaces for Aboriginal and Torres Strait Islander peoples to participate. Policymakers must figure out how culturally safe spaces for co-designing policy with Aboriginal and Torres Strait Islander peoples

activities look, feel, sound and taste. This needs to be worked out before it starts, not as an afterthought. Such spaces may differ between policy contexts and our realist evaluation outlines how Aboriginal and Torres Strait Islander peoples' willingness to participate was contingent upon a set of non-negotiable criteria. This included First Nations-led policy dialogue and decision-making that were embedded in strengths-based narratives. Policymakers must allow the culturally responsive journey to deepen their awareness which requires releasing firmly held biases and their accompanying colonial methods. This not only transforms the policymaker as a person but also evolves their co-design practice as their frame of reference expands to cultivate culturally respectful environments. It also provokes necessary bold exchanges that uncover underlying tension safely and compassionately. While cultural training is available to employees in some public agencies, the specific training mandates are not uniform across all agencies [103]. The Australian Government Department of Health and Aged Care (Department) requires employees at a specified level (i.e., Executive Director or EL2 and higher), to complete mandatory cultural awareness training. This demonstrates the Department's low cultural responsiveness expectations of its executive employees. While it may seem idealistic, cultural awareness training should be mandatory for all public servants, as their work inevitably impacts Aboriginal and Torres Strait Islander peoples. A strong respect for and understanding of Aboriginal and Torres Strait Islander culture, history and issues can help to nurture more compassionate relationships to enhance better Indigenous policy and systems. It is no longer acceptable to write policies that aim to serve the mainstream; such policies adopt a Western-centric design that have only harmed Aboriginal and Torres Strait Islander peoples.

Key finding 3: Co-designing policy impacting Aboriginal and Torres Strait Islander peoples should be mandatory because it delivers better value for the community and government.

Our realist review highlights the widespread discourse across macro, meso and micro policy contexts advocating for integrating Aboriginal and Torres Strait Islander perspectives in developing drinking water policy and service delivery. This was seen in national, state and local government departmental websites that acknowledge the need to respectfully garner and incorporate Aboriginal and Torres Strait Islander knowledge systems in drinking water policy design and implementation. These insights strongly correlate with and extend Evans and Terry's (2016) viewpoint that effective policy co-design is reliant on a policymaker's healthy risk appetite to embrace unconventional co-design approaches that oppose dominant policy design approaches [77]. Further, our roadmap for privileging Aboriginal and Torres Strait Islander knowledges in designing drinking water policy denotes the necessity for Indigenous governance in drinking water policy design, implementation and evaluation. Our realist evaluation highlights that policy co-design can be difficult for all stakeholders, but the rewards (e.g., strengthened relationships, policymaker's broadened and enriched perspectives) surpass the challenges.

Key finding 4: Our Framework requires meaningful setup, starting with building strong relationships with Aboriginal and Torres Strait Islander peoples.

4.1 Strong relationships with Aboriginal and Torres Strait Islander peoples are necessary for effective policy co-design.

Our Framework is not intended for appropriation or fragmented application. Rather, it necessitates a holistic application to be truly effective. This is analogous with the all-encompassing nature of Aboriginal and Torres Strait Islander health and wellbeing outlined in our realist evaluation. Before co-designing policy with Aboriginal and Torres Strait Islander peoples, policymakers need to invest time in grasping relationality. This means that policymakers must build strong partnerships with Aboriginal and Torres Strait Islander peoples who are impacted by the policy problem. These connections need to be premised on trust and credibility to ensure everyone has an opportunity to participate. In some cases, policymakers should be prepared when Aboriginal and Torres Strait Islander peoples advise that it is not the right time for co-designing policy [(99)]. Similarly, policymakers may be advised they are not the appropriate person to lead the policy co-design. In both instances, policymakers must respectfully honour Aboriginal and Torres Strait Islander peoples' preferences and keep working on building relationships on these terms.

While our realist evaluation emphasises the strong partnerships between the Department and the Aboriginal Community-Controlled Health Sector, other agencies may need to strengthen their connections. Our systematic review also shows how Indigenous policy complexities require strong connections across bureaucratic boundaries (intra and inter-agency) to better understand and collaboratively address the cultural determinants of Aboriginal and Torres Strait Islander peoples' health and wellbeing. Issues impacting individuals are often compartmentalised within and across silos throughout the public service, obliging communities to traverse convoluted and fragmented bureaucratic systems. Such terrains hamper the realisation of our Framework. Alternatively, cultivating partnerships across the system and within communities that pursue Indigenous self-determination, governance and leadership will naturally centre Aboriginal and Torres Strait Islander peoples and their culture, knowledge systems, experiences and voices from the outset of policy co-design and throughout. Our Framework calls for and supports stronger relationships that foster courageous conversations that move co-design from '*mere talking*' towards tangible measures.

4.2 Investment

Our Framework, realist studies and systematic review emphasise that failing to appropriately invest in policy co-design can result in its demise before it begins. Policymakers must ensure that Aboriginal and Torres Strait Islander peoples are empowered to fully participate on their terms. This means adopting accessible policy co-design activities. Participants must also be remunerated appropriately. This can

take various forms beyond financial compensation and should be determined by the Aboriginal and Torres Strait Islander participant. Sense-making activities should be available to support Aboriginal and Torres Strait Islander peoples to express themselves in culturally relevant ways. Visual, oral and other non-linear tools (e.g., storyboarding, mind mapping) may help Aboriginal and Torres Strait Islander peoples convey experiences with complex policy problems. Aboriginal and Torres Strait Islander peoples must also be supported to communicate in a language(s) of preference to remove language barriers and respectfully include people for whom English is not their first language.

4.3 Culturally safe spaces

Our realist evaluation demonstrates that culturally safe spaces are imperative to meaningful policy co-design and go beyond mere logistical and administrative considerations. Culturally safe spaces are environments where Aboriginal and Torres Strait Islander peoples can feel valued, respected, and empowered to share their experiences and insights without judgement or punishment. Culturally safe spaces must ensure the safety of participants, particularly when it comes to serious and potentially traumatic disclosures. While each space differs between policy contexts, all policymakers have a duty of care to create an atmosphere that prioritises social and emotional well-being. This enables Australian and Torres Strait Islander peoples to openly express themselves without fear of retribution or misunderstanding. Clearly delineating each person's rights and responsibilities early also fosters accountability throughout the policy co-design group. Care for each other is also a critical element, to

building strong interpersonal relationships within the co-design team that enhances trust and encourages a spirit of mutual support. This includes providing opportunities for healing and support, both inside and outside the co-design sessions, acknowledging that the emotional well-being of participants directly influences the success of the policy development process. Striking an appropriate balance between the number of government and community representatives in co-design activities is crucial to ensuring that voices from the grassroots level are empowered, adequately heard and integrated into policymaking. Moreover, as mentioned previously, Aboriginal and Torres Strait Islander peoples' contributions should be recognised and valued through pre-determined remuneration measures.

4.4 Bi-partisan support for policy co-design

Bi-partisan agreement symbolises political concord that bridges ideological barriers. Our realist evaluation highlighted bi-partisan endorsement as a critical enabler of effective policy co-design. This is because the process was not dependent on the benevolence of individual Departmental or community leaders but was instead rooted in the bureaucratic systems enacting the process. The policy co-design process was also strengthened by a joint political willingness to embrace the risks of a new policy design approach to effect lasting systemic change for Aboriginal and Torres Strait Islander peoples. This cross-party consensus also signifies how political unity can enact our Framework's constructs (Mind, Core, Hands, Grass and Needle), by contending with policymaker hesitancy and mobilising bureaucratic mechanisms to support effective policy co-design.

Key finding 5: Effective policy impacting Aboriginal and Torres Strait Islander peoples requires inclusive design, implementation and evaluation.

The National Agreement calls for culturally responsive policies deriving from disaggregated data collection and analyses, tailored interventions and a commitment to fundamentally address structural inequities. Further, the Australian Government Productivity Commission's Review of the National Agreement recommends that '*Stronger accountability is needed to drive behaviour change*' [73, p. 9]. This recommendation validates our realist evaluation's insights regarding accountability. We found that while the policy co-design process was trailblazing, effective and rewarding, the subsequent policy implementation and evaluation were inadequate and unacceptable. Such care, time and effort in co-designing this landmark policy has not yet fulfilled its intended impact. Co-designing strong implementation and evaluation strategies that give prominence to Indigenous data sovereignty and governance must take place during policy development. Doing this embeds accountability mechanisms for public agencies and governments to implement and evaluate co-designed policies. It also honours Aboriginal and Torres Strait Islander peoples' significant contributions. These insights correlate with and add evidence to Dillon's (2021) standpoint that effective policy co-design ensures that co-designed policy objectives, content and frameworks are implemented as intended [97].

Our realist evaluation demonstrated how policymakers often move between and across public agencies due to myriad reasons. It is likely that when policymakers move, the accumulated cultural understandings and relationships move with them, leaving their team to start over. In this case, re-consulting Aboriginal and Torres Strait Islander peoples can elicit harm as they are burdened to re-tell their story. Rather than reinventing the wheel, bureaucratic systems should be attuned to integrating Aboriginal and Torres Strait Islander ways of knowing, being and doing into their operations and culture. This safeguards the policy co-design process from Departmental personnel changes and enhances the policy's overall accountability. Policymakers can adopt digital and shareable documentation tools to ensure new staff are acquainted with the process to minimise the revisiting of previous discussions. Documentation must capture engagements and take stock of existing partnerships to strengthen policy co-design efforts regardless of individual policymaker (or team members) movements.

Key findings summary

Collectively, our findings tell us that co-designing policy with Aboriginal and Torres Strait Islander peoples is essential and possible, yet challenging. Our findings acknowledge that Aboriginal and Torres Strait Islander peoples are best placed to inform policymakers of the impact of current policies and chart the course towards equity. While a novel development, our Framework equips policymakers and Aboriginal and Torres Strait Islander peoples alike, paving the way towards genuinely co-designing policy together.

5.3 Implications

Our research has four implications.

Implication 1: Policy impacting Aboriginal and Torres Strait Islander peoples must be co-designed with Aboriginal and Torres Strait Islander peoples.

Co-designing Indigenous policy develops better policy for Aboriginal and Torres Strait Islander peoples and the wider community. Policy co-design is a shift from conventional and top-down policy development that devolves decision-making power by privileging Aboriginal and Torres Strait Islander knowledge systems. Policy co-design ensures that Indigenous policies reflect the realities facing Aboriginal and Torres Strait Islander peoples and culturally responsive solutions.

Implication 2: Policymakers are not co-designing policy effectively.

While public agencies articulate the need to co-design policy with Aboriginal and Torres Strait Islander peoples, their approaches are predominantly inconsistent and tokenistic.

Implication 3: Specific conditions are essential to co-design policy effectively.

Indigenous governance, culturally responsive policymakers (and agencies), strong relationships between policymakers and Aboriginal and Torres Strait Islander peoples,

culturally safe spaces and shared decision-making power are key requisites for effective policy co-design.

Implication 4: Our culturally grounded framework will equip people to genuinely co-design policy together.

Our research offers policymakers a framework for co-designing policy with Aboriginal and Torres Strait Islander peoples. Our Framework responds to the National Agreement's call for transforming government approaches to partnering with Aboriginal and Torres Strait Islander peoples to embed Indigenous governance in Indigenous policy design, implementation and evaluation.

5.4 Recommendations

We make four recommendations.

Recommendation 1: All policy impacting Aboriginal and Torres Strait Islander peoples should be co-designed with Aboriginal and Torres Strait Islander peoples.

Governments should institutionalise Indigenous policy co-design to embed Indigenous governance and Aboriginal and Torres Strait Islander knowledges in policy design, implementation and evaluation. Culturally responsive policy design approaches begin with purposeful engagement with Aboriginal and Torres Strait Islander peoples from the

outset. This process establishes Aboriginal and Torres Strait Islander governance, decision-making protocols and shared understanding of the policy issue itself.

Recommendation 2: All Australian governments committed to implementing the National Agreement should employ an effective regulation method such as our Framework to co-design policy with Aboriginal and Torres Strait Islander peoples.

We aim to disseminate our Framework via targeted workshops to equip policymakers with practical strategies for applying it in real-world policy contexts. These workshops demonstrate its use across the policy cycle and foster interactive learning. We seek to pilot our Framework and collaboratively evaluate outcomes with Aboriginal and Torres Strait Islander peoples to and strengthen policy co-design and policymaker accountability. Policymakers can use Blomkamp's Co-Design Maturity Model to assess their organisation's readiness for co-design by examining whether systems, staff capabilities, and organisational culture support meaningful engagement. Although the model does not explicitly measure policy co-design maturity, it helps policymakers decide when co-design is appropriate, determine feasible levels of ambition, and identify the organisational investments required to achieve culturally responsive policy co-design.

Recommendation 3: Public agencies should mandate ongoing cultural responsiveness training for policymakers and ongoing cultural awareness training for all staff.

Policymakers must cultivate both institutional and individual capabilities to establish the structural conditions necessary for policy co-design and to maintain trust, reciprocity, and authentic partnerships with Aboriginal and Torres Strait Islander peoples.

Recommendation 4: Public agencies should embed accountability mechanisms for implementing and evaluating co-designed polices.

Aboriginal and Torres Strait Islander policy co-design participants can use evidence-based co-design tools, like our Framework, to hold policymakers and their agencies accountable throughout the policy co-design process. Also, embedding regular and transparent reporting and feedback loops in the policy can ensure policies are implemented as intended and can adapt to changing circumstances. Public agencies should safeguard the policy co-design process from Departmental personnel changes.

5.5 Limitations

While our extensive literature search strategy informed our realist review insights, collecting primary data from local, state and national drinking water policymakers would have been more valuable. However, time restrictions made this unfeasible. Also,

our Framework uncovered policymaker setting gaps (e.g., lack of policy co-design knowledge and experience) that could impede its full realisation. Translating our Framework into a companion guide could support better policy co-design efforts. These limitations open new lines of research.

I recognise that my positionality shaped every thesis aspect. My upbringing, education, professional experience and social location influenced the framing of the research questions, adoption of realist theoretical frameworks and empirical data interpretation. While I applied reflexive practices, including sustained critical self-examination and deep engagement with CBT perspectives, I acknowledge that positionality cannot be entirely removed. Consequently, certain assumptions regarding policy design, collaboration methods and legitimacy are more evident, reflecting my perspectives. While this thesis was also necessarily shaped by the CBT's shared expertise, it was limited by the range of perspectives when compared to the extensive cultural diversity of Aboriginal and Torres Strait Islander Nations. Even so, it establishes a substantive basis for advancing this critical area of inquiry beyond this thesis.

Finally, although this thesis contributes to policy co-design scholarship, it does not frame co-design as a one-size-fits-all approach to addressing all Indigenous policy challenges. Instead, our Framework offers foundational principles for co-design policy with Aboriginal and Torres Strait Islander peoples, recognising that its application will vary across diverse policy contexts.

5.6 Further research

Our research presents six future research opportunities.

Future research opportunity 1: Co-designing policy with other priority populations.

Examine the potential for co-designing policy with other priority populations, including young people, older individuals, and culturally and linguistically diverse communities. A process evaluation of our protocol can inform co-designing policy with other priority populations.

Future research opportunity 2: A comparative analysis of long-term impacts of co-designed and non-co-designed Indigenous policies.

Explore the context and mechanism comparisons between a co-designed policy (NATSIHP 2021-2031) and the previous non-co-designed iteration (NATSIHP 2013-2023) to understand how both approaches shape short-term outcomes and long-term impacts.

Future research opportunity 3: Exploring co-designed policies that have embedded implementation and evaluation measures.

A case study analysing how a co-designed policy effectively incorporates implementation and evaluation within the policy's design.

Future research opportunity 4: Understanding national, state and local drinking water policy design mechanisms that can address drinking water disparities impacting Aboriginal and Torres Strait Islander peoples.

System mapping of the macro, meso and micro policy design instruments that can empower Aboriginal and Torres Strait Islander voices to shape drinking water policy design, delivery and evaluation.

Future research opportunity 5: Translating our Framework findings into accessible resources (e.g., policy co-design playbook) to support policymakers and Aboriginal and Torres Strait Islander peoples to implement our Framework.

Participatory action research aiming to co-design inclusive, purposeful and practical tools to guide policymakers and support Aboriginal and Torres Strait Islander peoples in co-designing policy.

Future research opportunity 6: Examine the impact of our Framework on policy co-design.

A case study examining how our Framework is applied to a policy co-design process. This includes understanding our Framework's role in shaping a culturally responsive policy, outcomes for Aboriginal and Torres Strait Islander peoples and policymaker cultural capability.

5.7 Critical reflection

Positionality

As a non-Aboriginal and Torres Strait Islander person, researcher and public servant, my calling from this thesis' outset was to advocate self-determination principles. I ensured this by grounding our research in Aboriginal and Torres Strait Islander ways of knowing, being and doing. As a woman of colour, I have lived experience of discrimination and racism as a direct result of public policy design. My experiences have afforded me unique insights to empathise with comparable priority groups such as Aboriginal and Torres Strait Islander peoples. However, while I belong to a minority ethnic group, this research required me to put aside my lived experience and continually reflect on my positionality as a privileged migrant to this country. This research taught me how to sit with the discomfort that unceasing critical reflection brings, especially in grappling with Indigenous policy complexities. Over time, it also illuminated the flaws in rigidly held convictions I was taught to believe. It has also driven me to actively and widely disseminate our findings to push for urgently needed bureaucratic change and support others in the deep reflexive practice required for policy co-design.

I am deeply grateful to have cultivated deeper connections with my Aboriginal and Torres Strait Islander peers and mentors who have profoundly enriched my life through this research. Though my primary and secondary education did not encompass 'truth-

telling', I am grateful that my children's educational experiences do, as future generations need to be amply equipped to redress the injustices facing Aboriginal and Torres Strait Islander peoples.

Indigenous governance

The governance provided by our Co-design Brains Trust (CBT) members was pivotal to ensuring that both cultural and policymaker experts were guiding every aspect of our research. It was also critical to ensure the right voices were willing to advocate our findings in their respective spheres of influence. CBT members were invited to co-author three publications to respectfully recognise their indispensable contributions. Hospitality, humility, generosity and accountability characterised our collaboration and each yarning circle and yarn impressed on me a sense of urgency to progress our significant work's contribution to close the gap. We acknowledge that our findings have warranted their publication in high-impact journals within the fields of policy design, public health and social justice. We are also conscious to proactively advocate our Framework in policy design forums and translate them into useful and accessible community resources.

The Voice Referendum 2023

The Voice Referendum 2023 (the Voice) took place during our research and provided a unique context. The Voice proposed enshrining an Indigenous voice in the form of an advisory body (Voice to Parliament) into the Australian Constitution. In the lead up to

the voice, Australia witnessed a shift from what was intended to be a unifying proposition to a polarising interplay of politicisation. The Voice's failure emboldened racist rhetoric and discrimination against Aboriginal and Torres Strait Islander peoples. The rejection of the Voice reinforced Australia's historical exclusion of Aboriginal and Torres Strait Islander peoples from decision-making impacting their lives and deepened distrust in governments' management of Indigenous affairs. The emotional and psychological toll on our CBT members and Aboriginal and Torres Strait Islander friends and colleagues was seen and felt in the lead up to and after the referendum. This pivotal event in Australia's history taught me about the necessity for clarity and transparency in Indigenous affairs. I also learnt about the indispensable value of Indigenous governance, genuine co-design and partnership in Indigenous affairs. In the face of resistance to including Aboriginal and Torres Strait Islander voices, our research presents an imperative to continue advocating for justice and self-determination through co-designing Indigenous policy. Romlie Mokak validates this assertion in his Inaugural Oration (2024) with his statement '*At the heart of it all, must be the people. Aboriginal and Torres Strait Islander people. And we must be at the centre of policy decision-making, program design and implementation. It's as simple as that. We are not just another stakeholder in our own futures. Not just another cohort to consult with. We are not just another population group to cover or another segment of the market to survey. We are the First Peoples of this place. With our sciences knowledges and solutions.*' [104, p. 9].

5.8 Conclusion

Aboriginal and Torres Strait Islander peoples and their knowledge systems must take the lead in shaping the policies concerning them. Our findings enrich policy design literature by addressing the gap in policy co-design evidence that supports policymakers and Aboriginal and Torres Strait Islander peoples to meaningfully co-design policy together. Our insights also add to participatory policy design literature by illustrating that the benefits of departing from tokenistic consultation towards inclusive and dynamic exchanges of bold viewpoints overshadow the bureaucratic risks.

There is no excuse for public agencies to continue traditional colonial approaches that are failing Aboriginal and Torres Strait Islander peoples. In the long run, effective policy co-design saves time and resources and can enhance policy when policymakers and public agencies invest in setting up the enacting conditions. Policymakers must incorporate cultural and contextual nuances so that Aboriginal and Torres Strait Islander peoples can see their own experiences and ideas mirrored in the policy content and contribute to resolving societal problems. Our Framework equips policymakers to take the first step in meeting Aboriginal and Torres Strait Islander peoples where they are at; thus, leaving behind flawed policy design approaches to pursue a culturally responsive way to closing the gap.

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