

## **Truth & tooth: Co-designing evidence for an anti-racist dental health system in Australia**

Brianna Poirier, Joanne Hedges, Dandara Haag, Yin Paradies, Tamara Mackean, João Bastos, Catherine Leane, Gustavo Soares, Sneha Sethi, Jessica Manuela, Pedro Santiago, Kelli Owen, Natalie Bauer, Jodie Milne, Ashleigh Smith, Kelly Smith, Priscilla Larkins, Madison Cachagee, Vaibhav Garg, Latisha Sykora, Nicolas Reid, Michael Larkin, Jayde Fuller, Lisa Jamieson

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## Abstract

**Background:** Racism arrived in Australia with colonisation and its intentionally oppressive policies and actions towards Aboriginal and Torres Strait Islander Peoples. To a large extent, the colonial and biomedical agenda are maintained by Australia's health system that underlies much of the racialised health inequities in the country. Dentistry significantly lags behind medicine and other health care areas in the uptake of antiracism, with the dental accreditation body only acknowledging racism as a determinant of oral health in 2022.

**Objective:** This project will comprehensively develop the evidence required for an anti-racist dental health system in Australia through co-design of the following objectives: (1) Development of an anti-racist curriculum for dental students; (2) Workforce strategies that support the attraction, retention, and wellbeing of the Aboriginal and Torres Strait Islander dental workforce; and, (3) Oral health promotion training for Aboriginal Health Workers/Practitioners (AHW/P).

**Methods:** This project is grounded in decolonising methodologies and Indigenous methodologies, which inform our ways of working at the knowledge interface. Co-design Yarning sessions will inform the development and implementation associated with each of the objectives through tabulation and narrative synthesis of sessions. Objectives will be evaluated with both quantitative and qualitative measures and analysed accordingly with Inverse Probability of Treatment Weighting, content analysis, or reflexive thematic analysis.

**Results:** The study received ethical review approval in February 2024 and received funding in June 2024. The co-design phase for each objective will run from July 2024 to February 2025. The dental curriculum will be developed in 2025 and delivered to the 2026 student cohort. Evaluation data will be collected from the comparator student cohort in 2025 and the implementation cohort in 2026. Data collection for the development of workforce strategies will be collected from October 2024 to July 2025, the framework will be developed from August to December 2025 and disseminated in 2026. Oral health promotion training will be developed from August to February 2024, implemented from March to June 2025, and qualitative evaluation data will be

collected between July to September 2025.

**Conclusions:** The proposed research will enhance anti-racism training of non-Indigenous health practitioners, support Aboriginal and/or Torres Strait Islander dental workforce, and improve oral health training for AHW/P. Together, these strategies will build oral health knowledge at the Community level, in turn supporting Aboriginal and Torres Strait Islander self-determination of oral health.

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## Original Manuscript

**Title:** Truth & tooth: Co-designing evidence for an anti-racist dental health system in Australia

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## Abstract

### Introduction

Racism arrived in Australia with colonisation and its intentionally oppressive policies and actions towards Aboriginal and Torres Strait Islander Peoples. To a large extent, the colonial and biomedical agenda are maintained by Australia's health system that underlies much of the racialised health

inequities in the country. Dentistry significantly lags behind medicine and other health care areas in the uptake of antiracism, with the dental accreditation body only acknowledging racism as a determinant of oral health in 2022.

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### **Methods**

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### **Discussion**

The proposed research will enhance anti-racism training of non-Indigenous health practitioners, support Aboriginal and/or Torres Strait Islander dental workforce, and improve oral health training for AHW/P. Together, these strategies will build oral health knowledge at the Community level, in turn supporting Aboriginal and Torres Strait Islander self-determination of oral health.

**Keywords:** Racism; Anti-racism; Dentistry; Aboriginal and Torres Strait Islander; Dental workforce; Dental curriculum; Oral health promotion; Aboriginal Community Controlled Health Organisations; Aboriginal Health Workers/Practitioners

## **INTRODUCTION**

It is widely accepted that social determinants of health (1, 2), and for some, commercial determinants of health (3), directly impact one's oral health outcomes. There remains a disconnect between the role structural factors play in shaping one's oral health among clinicians, public servants, and researchers (4). Beyond debating the use of race as an indicator for certain dental procedures (5) or to assess racial disparities in oral health outcomes (6), limited action has been taken to address the role structural racism plays in creating oral health inequities (7, 8). Both cultural and structural racism emerge within dentistry, impacting oral health outcomes in several ways. At a cultural level, racism is perpetuated through interpersonal racism and implicit bias, whereby clinicians discriminate against patients upon the basis of race and ethnicity (9). At a structural level, racism manifests as

institutional practices, policies, and ideologies that inherently afford advantages to some racial groups over others (10, 11). Racism is in fact a dental public health threat due to its intentional deprivation of access to health equity and sovereignty, further entrenching cycles of disease burden within racially oppressed communities (9).

Racism arrived on the shores of Australia in 1788 with colonisation and the intentional dehumanisation of Aboriginal and Torres Strait Islander Peoples by settler colonists (12, 13). Colonisation violently established whiteness as the societal and human ideal in Australia, and indeed in other settler colonial nations, based on the rights of 'white possession' and individual sovereignty (14). Aboriginal and Torres Strait Islander Peoples had better oral health outcomes than non-Indigenous Peoples up until the 1970s, which demonstrates that the oral health inequities are grounded in persistent racialised ideologies of colonial care (15). The institutionalisation of care within Australia via state welfare maintains 'white ignorance' (16) and colonial ideologies within the reality of ongoing and systemic racial violence (17). Whilst medicine and other areas of health care have been slow in the uptake of an anti-racist agenda into their conduct of practice, dentistry significantly lags behind (7, 9). The accreditation process for all dental practitioners, as established by the Australian Dental Council, failed to identify racism as a determinant of oral health until 2022 (18). This exemplifies the racialised foundations of the Australian dental health system and provides rationale for why dental decay remains the most prevalent chronic condition experienced by Aboriginal and Torres Strait Islander Peoples, across all age groups (19). Racism embedded in Australia's infrastructure is not restricted to the dental health system but manifests across mutually reinforcing structures, from child removal and incarceration (20) to missing and murdered women and children (21). Widespread and ongoing stereotyping across all aspects of Australian society perpetuates racialised discourses about Aboriginal and Torres Strait Islander Peoples and leads to embedded discrimination in systems experienced when accessing care, which negatively affects access to health care and culminates in negative health outcomes (22). There remains a relational and moral obligation to uptake anti-racism as the *modus operandi* (23).

Structural racism in Australia's dental health system creates differentials in professional leadership, workforce representation, advocacy and access to services. For example, while Aboriginal and Torres Strait Islander Peoples represent 3.8% of the Australian population, as of 2020, only 0.4% of all practicing dentists were Aboriginal and/or Torres Strait Islander. Across Australia's nine dental schools and peak national dental bodies, none of these institutions are led by an Aboriginal and/or Torres Strait Islander person. Such degree of underrepresentation is one of the largest among all health professions (24), making dentistry significantly behind the targets of the National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan (25). These imbalances created and perpetuated by structural and cultural forms of racism also normalise expressions of interpersonal racism in dental clinical settings. Research indicates that patients' race affects providers' clinical decisions (26), which affects quality of care. Due to power imbalances between students and educators or patients and clinicians, oral health practitioners in Australia are rarely accountable for discriminating against Aboriginal and Torres Strait Islander patients, reflecting the inability of the dental health system to provide culturally safe care. This intensifies oral disease inequities, as evidenced by lower dental attendance for Aboriginal and Torres Strait Islander patients (27). Subsequently, oral health practitioners' assumptions that racial minorities do not give importance to oral health are reinforced by the racial ideologies that initially influenced oral health inequities. The impact of oral diseases spans across the life course, affecting outcomes such as identity, chronic diseases, lost economic productivity, social and emotional wellbeing, as well as difficulty finding a job (2). The Australian dental system's inability to properly address the oral health needs of Aboriginal and Torres Strait Islander Communities demonstrates how oral health inequities are rooted in are rooted in racialised systems that continue to perpetuate a cycle of trauma



and intergenerational disadvantage for Aboriginal and Torres Strait Islander Peoples.

It is critical to apply collaborative solutions that tackle the racism within the dental health system in Australia and promote the delivery of culturally safe and quality dental care for the First Peoples of this country (7). This project will build the evidence to mitigate the impacts of structural and interpersonal racism across different contexts of Australia's dental health system. Grounded in decolonial methodologies, we will comprehensively co-design strategies that foster an anti-racist dental health system in Australia.

### **Study Aims**

This project aims to generate evidence and apply best practice for dental health system changes that foster the provision of anti-racist dental care in Australia, through the following co-designed objectives:

1. Develop and implement an anti-racist curriculum for dental students that can be robustly evaluated. The benefits include an evidence-based model and pedagogical framework for a curriculum that will provide the necessary foundation for anti-racist practice across Australia's dental health system.
2. Generate a framework of strategies to be implemented across a number of professional settings (i.e. dental organisations, dental schools, and dental clinics) to support the attraction, retention, and wellbeing of the Aboriginal and Torres Strait Islander dental workforce. The benefits include fostering support and growth of the Aboriginal and Torres Strait Islander dental workforce in Australia.
3. Create and evaluate an oral health promotion training module for AHW/P. The benefits include supporting Aboriginal and Torres Strait Islander wellbeing by sharing oral health promotion information in a manner that equips AHW/P with knowledge to have everyday yarns about oral health with Community members.

## **METHODS**

### **Positionality statement**

Our appreciation of the importance of positionality and relationality has largely been influenced by decolonising frameworks and Indigenous methodologies (28, 29). As a collective coming to this work, we intentionally position ourselves within these processes to acknowledge our connections, relationships, and responsibilities (30-32). As a team comprised of Aboriginal and Torres Strait Islander researchers, dental professionals, Community leaders and non- Indigenous researchers, we are grateful for the opportunity we share to work alongside Aboriginal and Torres Strait Islander Communities. We are led by a proud Yamatji woman and a project governance committee consisting of 25 Aboriginal and Torres Strait Islander leaders from across so-called Australia. The supporting team consists of Indigenous and non-Indigenous members from Turtle Island, Australia, Brazil, India, and Aotearoa/New Zealand. The strength of this team is in our diverse perspectives and experiences related to racism, our shared values, and our commitments to anti-racist health care, equity, social justice, and self-determination. We remain grateful for our relational foundations of this work and committed to (un)learning throughout our individual and collective life-long journeys of anti-racism.

### **Methods**

#### ***Decolonising methodologies***

This study will be informed by decolonising methodologies, and therefore, grounded in an understanding of settler colonialism in Australia and resistance to colonial marginalization from dominant culture through assertions of individual and collective sovereignty (33-35). Whereby,

dominant culture is understood as aligning with colonial and biomedical values and health systems. In decentring colonial values, this project will follow processes that centre Aboriginal and Torres Strait Islander identity, cultural and collective action, as well as self-determination (36, 37). Decolonising methodologies counteract colonial research processes that are embedded in a history of appropriation, exploitation, misrepresentation, and unethical practices (29, 37-40). The generation, validation, and dissemination of knowledge through colonial research practices enables control of dominant ideologies that subordinates Indigenous Knowledge systems (38, 41). The failure of colonial research practices to adequately address Aboriginal and Torres Strait Islander experiences of inequitable health is fundamentally related to the power held by those who determine the value of knowledge and research processes (36). Therefore, decolonising methodologies will be utilised in this project to explicitly acknowledge the impacts of colonisation and settler colonialism, resist dominant deficit discourses of Aboriginal and Torres Strait Islander ill health (42), and advance Aboriginal and Torres Strait Islander health sovereignty. In the context of dentistry, this requires our team and our project to challenge statements and beliefs rooted in colonial and racial ideologies, demand truth telling, and collectively commit to (un)learning. As Aboriginal and Torres Strait Islander research leadership and governance is critical in ensuring respectful, reciprocal, and culturally safe practices, this project will be governed by a Project Governance Committee (PGC). In undertaking this work from a decolonial standpoint, we acknowledge our continued reliance on colonial processes for findings to have translatable impacts, particularly with regard to advocacy for health system reform. Therefore, we will equally value and weave together three types of evidence: lived experiences, professional experience, and academic evidence. We recognize that research will never be entirely “decolonised,” as research itself is rooted in colonial foundations; however, we contend that there remains an ethical compulsion to create space and drive Aboriginal and Torres Strait Islander-led programs (Figure 1).

Figure 1. Ways of working conceptual model that weaves together lived experiences, academic evidence, and professional experiences throughout iterative processes which centre around shared values.



### **Indigenous research methodologies**

Employing Indigenous research methodologies and methods support decolonial values and processes by shifting paradigms and power from colonial academic institutions to Aboriginal and Torres Strait Islander ways of knowing, being, and doing (43). Indigenous research methodologies necessitate embedded relationality from project inception through to sharing of findings (28, 35), the notion of relationality is represented by the hands sharing our collective responsibilities in Figure 1. Iterative process of co-design Yarning with external and internal team members and stakeholders underpins the entire project. Yarning sessions amongst the research team, throughout the co-design phase, and beyond will dynamically move through the Yarning Process developed by Bessarab, from Social Yarns to Research, Work, and Topic Yarns as well as Collaborative and Therapeutic Yarns and back again (44). This commitment to continuous and relational Yarning (45, 46) is critical when exploring (anti)racism due to the need for ongoing individual and collective reflexivity (47) and the creation of a spaces that foster agency for individuals to share information and opinions at their discretion (35). Our approach to this research is guided by our relationships, prioritises Indigenous research methods, is accountable to and informed by Aboriginal and Torres Strait Islander Communities, and led by our Aboriginal and Torres Strait Islander Project Governance Committee (PGC) (48).

The PGC is comprised of leaders from partnering organisations, with whom we have established relationships, to ensure that all aspects of the project are conducted in a culturally safe manner that prioritises self-determination, demonstrates respect, and privileges Aboriginal and Torres Strait Islander ways of knowing, being and doing (35, 43). Membership includes Aboriginal Community Controlled Health Organisations (ACCHOs) representatives, Elders, Aboriginal and Torres Strait Islander dentists, current Aboriginal and Torres Strait Islander dental students, Community leaders, representatives from regulatory and organisational dental bodies, and members of the research team. Aboriginal and Torres Strait Islander members of the PGC are honoured not only in their roles as academics, health practitioners, or Community leaders but also for their roles as Mothers, Fathers, Aunties, Uncles, and Grandparents with lived experiences and vested interest in the oral health of

their families and Communities. The PGC will provide governance and input into curriculum development, AHW/P training development, data interpretation, and dissemination of findings. PGC meetings will be held quarterly throughout the duration of the project, with feedback sought outside of meetings on an ongoing basis. The PGC will be comprised of more than 75% Aboriginal and Torres Strait Islander leaders and will ensure that project processes and outcomes remain relevant and in alignment with Community values, needs, and experiences (Appendix 1).

### ***Knowledge interface***

Working at the knowledge interface (49) within colonial research spaces utilising decolonial and Indigenous research methodologies allows different knowledge systems to be brought together with the aim of generating contextual evidence and novel insights. This requires reciprocal and trusting partnerships that centre, rather than marginalise, Aboriginal and Torres Strait Islander ways of knowing, being, and doing (43). We will prioritise a collaborative approach to knowledge creation, through iterative co-design processes across all project objectives whereby lived experiences, professional experiences, and academic evidence are valued equally, which is visually represented by the hands supporting our collective responsibility in Figure 1. To navigate the epistemological tensions that exists when working in decolonial ways at the knowledge interface, as a team we will continuously engage in individual and collective reflexivity, through weekly team meetings, independent journalling, and supporting (un)learning processes. This process of engaging in decolonial knowing, has previously been termed “dialoguing with the tensions,” and is a critical step in moving from individual immersion in resources and knowledges to collective and transformative discussions and action (50). Positioning our project at the knowledge interface is a significant strength of our approach as this enables the prioritisation of decolonial ideologies and Aboriginal and Torres Strait Islander ways of knowing, being and doing, within a colonial academic institution.

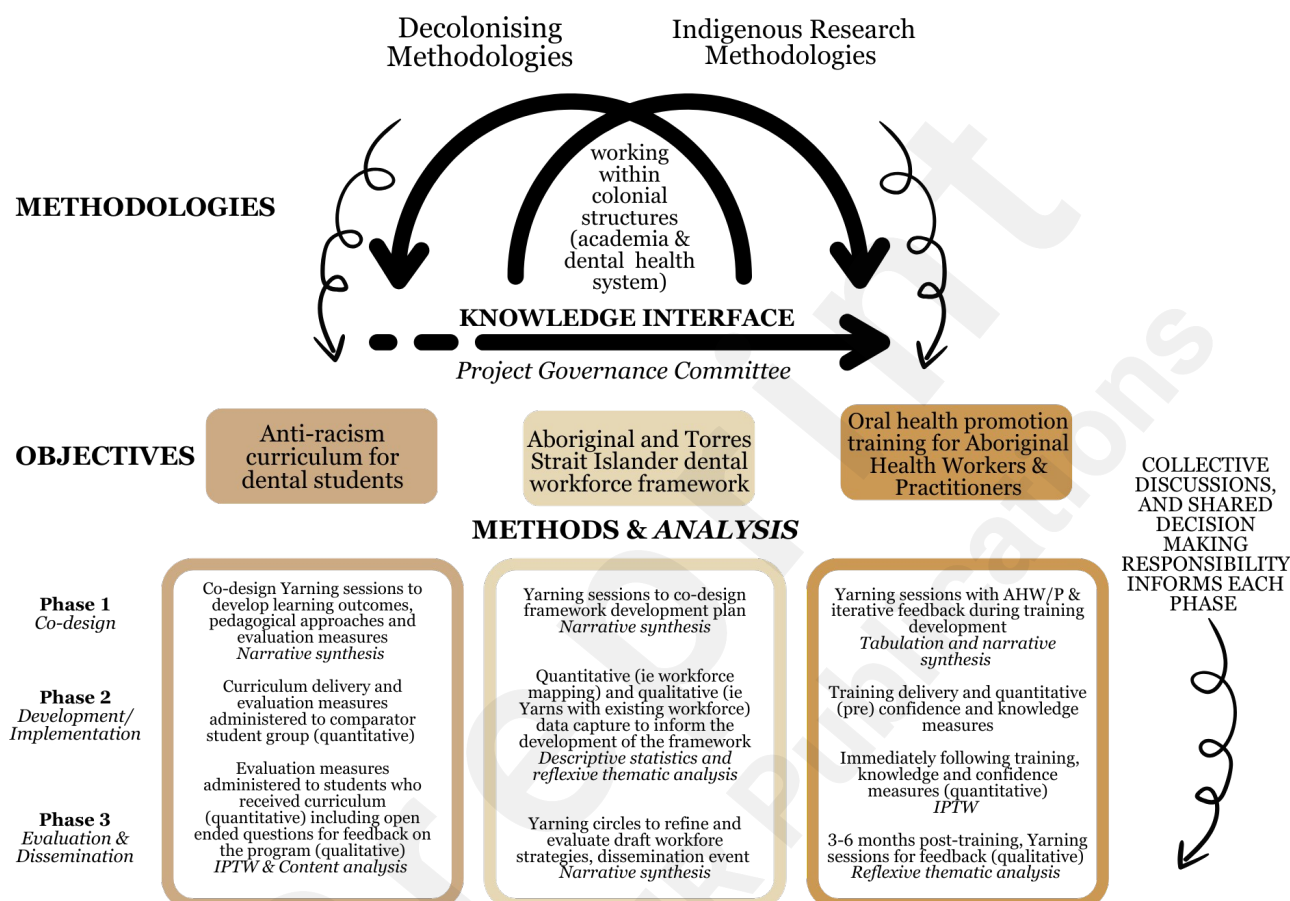
### ***Study design***

As a result of relationships and experiences, this project brings together Aboriginal and Torres Strait Islander leadership, lived experiences, Community engagement and research experience across Australia. The project is grounded in collaborations between the University of Adelaide’s Indigenous Oral health unit, three ACCHOs (Yadu Health Aboriginal Corporation in Ceduna, Moorundi Aboriginal Community Controlled Health Service in Murray Bridge, and Umoona Tjutagku Health Service in Coober Pedy), the South Australian Dental Service, the Indigenous Dental Association of Australia (IDAA), the Australian Dental Association (ADA), and the Australian Health Practitioner Regulation Agency (Ahpra). The three objectives of this study described above occur over three phases: co-design, implementation, as well as evaluation and dissemination (Figure 2).

Co-design Yarning sessions will provide the foundation of enquiry for each of our three objectives (44). Multiple cycles of Yarning sessions, as a qualitative research method for data capture, will be required for the iterative co-design process. Yarning sessions will be guided by Aboriginal and Torres Strait Islander team members (46), ensuring the prioritisation of Aboriginal and Torres Strait Islander research leadership, respect, Community benefits, culturally grounded approaches, inclusive partnerships, and robust evidence-based decision making (51). In accordance with co-design principles, each Yarning sessions will be centred around a collective goal and those engaging in sessions will share the responsibility to prioritise equity, partnership, inclusivity, respect, and trust throughout the sessions (46, 51). Yarning sessions will be driven by three types of evidence: lived experience, professional experience, and academic evidence. Existing academic evidence pertaining to the collective goal of sessions will be collated by our team and disseminated to co-design participants prior to Yarning sessions. Utilising the knowledge interface as our guiding methodology,

we will bring together lived experiences, Community-driven evidence, academic evidence, and professional experiences to determine appropriate next steps as per the respective objective (Figure 1).

Figure 2. Study design illustrating the interaction between methodologies, methods, and analysis across the objectives and phases of the project. *AHW/P: Aboriginal Health Workers and Practitioners; IPTW: Inverse Probability of Treatment Weighting.*



### **Objective 1: Development of an anti-racism curriculum**

**Phase 1: Co-design Yarning.** The co-design Yarning sessions for objective 1 will be an iterative process that actively engages various stakeholders to design and co-construct the curriculum. The collective goal of Yarning sessions will be to develop an anti-racism curriculum that equips students to identify racism within the dental care system as well as develop knowledge, skills and attitudes needed to mitigate racism and its associated consequences. The sessions will be informed by a scoping review of existing anti-racism training programs for health trainees (i.e. medical and nursing students) and a critical review of evaluation measures of anti-racism trainings in health contexts. Overall, the co-design process will be guided by the domains of the Aboriginal and Torres Strait Islander Health Curriculum Framework: respect, communication, safety and quality, reflection, and advocacy; these domains comprise key descriptors such as racism, cultural knowledge, history, strengths- based approaches, equity, and human rights (52). Working at the knowledge interface, academic evidence from the two reviews will be woven together with professional experiences and lived experiences to identify the relevant, theoretically sound, and feasible learning outcomes, pedagogical approaches, and evaluation measures to be included in the curriculum structure.

**Phase 2: Implementation.** Students enrolled in year 4 of the Bachelor of Dental Surgery (BDS) at

the Adelaide Dental School (approximately 70 students) will receive the anti-racism curriculum as a core component of the programs. We will pilot the curriculum with students enrolled in 2026, allowing approximately one year for curriculum development. The comparator group will be students enrolled in the same year in 2025. The comparator students, all things being equal, will have access to no educational offerings that are discernibly different to the study cohort, apart from receiving the anti-racist curriculum. Multiple pedagogical techniques will be employed as determined by co-design sessions; this may include cultural immersion, expert-facilitated small group workshops and clinical simulation activities. Small group tutorials (flipped classroom, with online short lectures and video or text resources), and simulation exercises will take place in standard tutorial rooms and workshop areas. The curriculum will be delivered by the research team and invited guests who have a combination of lived experiences, expertise in empirical research on racism in healthcare settings, and extensive training in population health teaching. Those delivering the curriculum will undergo multiple anti-racism training programs, and will create space for ongoing collective discussions that allow all team members to continue “dialoguing with the tensions,” and ensuring decentring of colonial and racialised ideologies (50).

**Phase 3: Evaluation & Dissemination.** Both student groups (2025 & 2026) will complete a set of evaluation measures related to curriculum competencies at the end of their respective years. The evaluation items will be directly informed by the co-design process and related to anti-racist behaviours and knowledges, such as the Harvard Implicit Association Test (53) and the Anti-Racism Behavioural Inventory (54). For students who receive the anti-racism curriculum, evaluation will also include open ended questions that provide an opportunity for feedback on the curriculum (55).

**Objective 2: Supporting the attraction, retention, and wellbeing of the Aboriginal and Torres Strait Islander dental workforce**

**Phase 1: Co-design Yarning.** Working in partnership with the Indigenous Dental Association of Australia (IDAA), objective 2 will develop meaningful and effective strategies to recruit, support, graduate, and sustain Aboriginal and Torres Strait Islander dental practitioners. Currently, there is minimal infrastructure supporting the Aboriginal and Torres Strait Islander dental workforce within Australia; therefore, co-design Yarning sessions will aim to (1) identify quantitative metrics to be captured with regard to current workforce that can inform strategies (i.e. number of Aboriginal and Torres Strait Islander staff within dental schools); (2) identify qualitative data to be collected to inform workforce strategies (i.e. directed yarns with existing dental practitioners); and (3) identify key stakeholders important for the dissemination of workforce strategies at the end of the project, so that engagement and relationship building can co-occur throughout development. Prioritising relationality is key to our collective approach to research and the iterative processes of co-design in this project (28); hence, the importance of identifying workforce stakeholders at the beginning of the project to ensure relevance of workforce strategies and uptake of recommended strategies amongst stakeholders. The feedback from these co-design Yarning sessions will directly inform our ‘development plan’ for the workforce strategies.

**Phase 2: Development.** Based on collective discussions during co-design Yarning sessions, we will seek to collect data that aligns with development plan. We anticipate both qualitative and quantitative data will be collected during the development phase. This will likely include mapping of current Aboriginal and Torres Strait Islander leadership and employment in Australian dental schools and peak dental bodies (quantitative) and Yarning about experiences of Aboriginal and Torres Strait Islander dental practitioners and students with existing support pathways available (qualitative). In an iterative fashion, we will share this data back with IDAA, our PGC, and other stakeholders involved in the initial co-design Yarning sessions. We will organically begin to collate data as related to the six strategic directions outlined in the National Aboriginal and Torres Strait Islander Health



Workforce Strategic Framework and Implementation Plan (25) (Table 1). The final step, once all data outlined in the development plan is collected, will be to develop a draft of the workforce strategies, with leadership from IDAA and our PGC.

Table 1. Adapted strategic directions of the National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan (25)

1	Aboriginal and Torres Strait Islander people are represented and supported across all dental health roles and functions	4	There are sufficient numbers of Aboriginal and Torres Strait Islander students studying and completing dental health qualifications to meet the future dental care needs of Aboriginal and Torres Strait Islander peoples
2	The Aboriginal and Torres Strait Islander health workforce has the necessary skills, capacity and leadership across all dental health roles and functions	5	Aboriginal and Torres Strait Islander dental health students have successful transitions into the workforce and access clear career pathway options
3	Aboriginal and Torres Strait Islander people are employed in culturally safe and responsive workplace environments that are free of racism across dental health and all related sectors	6	Information and data are provided and shared across systems to assist dental health workforce planning, policy development, monitoring and evaluation, and continuous quality improvement

**Phase 3: Evaluation & Dissemination.** The draft workforce strategies will be shared widely with stakeholders involved throughout development, as well as others with vested interests in the dental workforce. Feedback on the workforce strategies will be garnered in a collective workshop format where everyone comes together to review and share any remaining considerations for the final draft of the workforce strategies. Also at this time, stakeholders will review dissemination plans from the initial co-design Yarning sessions and discuss any other pathways for advocacy and knowledge sharing to support the implementation of the workforce strategies.

### **Objective 3: Oral health promotion training**

**Phase 1: Co-design Yarning.** Oral health promotion training for AHW/P is a previously identified Community need (56, 57). We will conduct a scoping review to identify existing oral health promotion materials and previous training programs for Indigenous Health Workers globally. This academic evidence will provide information for co-design Yarning sessions with AHW/P, whereby both lived experiences and professional experiences will be shared by staff at each of the three ACCHO sites. To ensure that this program is relevant and easily integrated by AHW/P, the co-design Yarning sessions will discuss (1) what information is most important to be included in the training; (2) the format of the training sessions; and (3) the evaluation of the training. Support provided for different oral health topics from AHW/P will be tabulated and qualitative data (audio recordings, text feedback, and field notes) will be narratively synthesised. Data will then be used to develop a training outline, and in alignment with the iterative nature of our co-design approach, we will hold further Yarning sessions with our PGC, ACCHO management, and AHW/P prior to final training development. Information will then be expanded upon as based on the shared outline and any queries raised during this process will be resolved by the PGC or ACCHO representatives. This iterative process is essential to ensure Aboriginal and Torres Strait Islander leadership drives community-based actions to address oral diseases, in alignment with the National Aboriginal Community Controlled Health Organisation (NACCHO) strategic directions (58).

**Phase 2: Implementation.** The pilot of the AHW/P oral health promotion training program will be implemented at three partnering ACCHOs in South Australia who have identified the lack of oral health promotion training for their AHW/P staff as a priority area (Yadu Health Aboriginal Corporation in Ceduna, Moorundi Aboriginal Community Controlled Health Service in Murray

Bridge, and Umoona Tjutagku Health Service in Coober Pedy). Training will be delivered by team members who have established relationships with AHW/P at each site.

**Phase 3: Evaluation & Dissemination.** Prior to the delivery of the training program, AHW/P knowledge and confidence on promoting oral health will be discussed and recorded via a short questionnaire. Immediately following the delivery of the training program, the same questionnaire will be provided to AHW/P to understand impacts of the training program. Three to six months following delivery of the training, Yarning sessions with AHW/P at all sites will be conducted to debrief on the impact of training and specifically understand any enablers and challenges of transferring knowledge gained during the training program into everyday practice. The findings of the training evaluation will be disseminated to peak bodies, including the Aboriginal Health Council of South Australia, the Victorian Aboriginal Community Controlled Health Organisation, and NACCHO to strengthen capacity for advocacy of state-wide and nation-wide implementation of oral health promotion training for AHW/P.

### Ethics and consent

Ethical approval for this project has been obtained from Aboriginal Health Research Ethics Committee (#04-23-1085), and the University of Adelaide's Human Research Ethics Committee (#38988). All study participants will be required to provide written informed consent.

### Recruitment

This research will be conducted in partnership with Aboriginal and Torres Strait Islander Peoples, organisations, and stakeholders who have experience and knowledge related to each objective of the project. This will include ACCHO staff, research institutes, universities, training organisations, and national regulatory bodies. Participants for all objectives will be recruited utilising relational processes across our existing partnerships and networks (46, 59). Participants will be identified and mapped in our stakeholder database with information relating to their cultural and professional backgrounds, including lived experience to clinical and research perspectives, as well as geographic location. As members of the team are introduced to more people working in this space, we will collectively add stakeholders to our database to invite to participate in relevant aspects of the project. Participants for co-design and implementation of Objective 3 will be primarily recruited directly through the ACCHO sites (Table 2). Participants who have English as a second or third language will also be invited; interpretation services will be offered to those who want to participate. Participants eligible for participation will be provided with information on participating in this project via email or hardcopy depending on context. These documents will outline the purpose of the study, the rights of participants, and details regarding how data will be collected, analysed, and disseminated.

Table 2. Participant eligibility criteria for each project objective.

	Participant eligibility criteria
Objective 1	<ul style="list-style-type: none"> <li>• Be aged over 18-years.</li> <li>• <i>Co-design phase</i>: Have expertise and knowledge related to anti-racism training or racism within Australia's healthcare system, including lived experience, clinical experience, and research experience in this area.</li> <li>• <i>Implementation phase</i>: Be enrolled in either the Bachelor of Oral Health or Bachelor of Dental Science program receiving the pilot anti-racist curriculum.</li> </ul>



Objective 2	<ul style="list-style-type: none"> <li>• Be aged over 18-years.</li> <li>• Identify as an Aboriginal and/or Torres Strait Islander dental stakeholder OR occupy a position related to the Aboriginal and/or Torres Strait Islander dental workforce (i.e., University dental school dean).</li> </ul>
Objective 3	<ul style="list-style-type: none"> <li>• Be aged over 18-years.</li> <li>• Identify as an Aboriginal and/or Torres Strait Islander AHW/P OR hold a management position at an ACCHO.</li> </ul>

### Participant reimbursement

Reimbursement for time will be provided to participants who provide their expertise during co-design Yarning sessions to recognise their valuable contributions (\$50 gift voucher suitable for each region will be provided per engagement in sessions).

### Data analysis plan

#### Objective 1

Data from a scoping review of previous programs and a critical review of evaluation measures, will inform a draft curriculum outline. During the co-design phase, this outline will be reviewed and discussed amongst key stakeholders for alignment with our three types of evidence: lived experiences, professional experiences, and academic evidence. Co-design will be an iterative process whereby feedback is included in the outline following each session for consideration in the following session. Co-design data will either be audio recorded or documented via notetaking during sessions. Once the curriculum outline is established through collective decision making amongst those engaged in this process and our PGC, we will re-visit co-design Yarning sessions to expand the outline to a full curriculum. This will include discussions about pedagogical approaches and evaluation measures that align with the outline. All data collected throughout this iterative process will then be collated and narratively synthesised (60) to document the co-design process of the curriculum development.

Data captured during the implementation and evaluation phase will be quantitative (both student groups) and qualitative (only 2026 group that receives training). Both groups will be administered the evaluation measures at the end of the semester of their respective year levels. We anticipate there will be approximately 70 students in each group. Student scores from both years will be analysed using Inverse Probability of Treatment Weighting accounting for potential differences in classroom composition (61). Any textual data provided by students who receive the anti-racism curriculum will be analysed utilising content analysis (62).

#### Objective 2

Data gathered during the co-design phase will be narratively synthesised (60) and will inform the development plan for a framework of workforce strategies. Quantitative data related to mapping of Aboriginal and Torres Strait Islander leadership and employment in the dental health system will be analysed with descriptive statistics. Directed yarns with Aboriginal and Torres Strait Islander dental practitioners (44) and students will be collectively analysed by both an Aboriginal and/or Torres Strait Islander researcher and a non-Indigenous researcher utilising reflexive thematic analysis (63). This data will then be compared to the six strategic directions of the National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan (25) and recommendations will initially be co-developed with IDAA and our PGC. Through an iterative

process of co-design, stakeholders will be invited to provide feedback on the strategies prior to and during a collective workshop.

### **Objective 3**

Data garnered through the co-design phase, including audio recordings, text feedback, and field notes, will be tabulated and narratively synthesised into a training outline. The development will be continuously informed and adjusted through iterative cycles of collective discussions as questions arise during development.

Prior to training delivery, AHW/P knowledge and confidence will be discussed and recorded via a short questionnaire. This same questionnaire will be completed immediately following the training program. Data will be analysed utilising Inverse Probability of Treatment Weighting, similar to objective 1 (61), to understand any immediate changes amongst AHW/P as a result of the training. Three to six months following delivery of the training, yarns with AHW/P (44) will be conducted and audio recorded to understand the usability of the training program in everyday circumstances. Qualitative data from these directed yarns (44) will be analysed utilising reflexive thematic analysis (63). The analysis of the yarns will aim to identify patterns across the data that provide insights into improvements that can strengthen the usefulness of training for AHW/P.

## **DISCUSSION**

If dental inequities are to be eliminated, comprehensive understanding of the complex factors leading to inequitable oral health outcomes needs to be established. The structural racism embedded in Australia's dental health system plays a key role in these inequities. The proposed initiative is a novel and innovative project that builds upon over a decade of relationships, collaborations, and engagement with Aboriginal and Torres Strait Islander Community organisations and leaders. The outcomes will directly contribute to fostering an anti-racist dental health system that prioritises cultural safety, quality dental care and Aboriginal and Torres Strait Islander leadership.

This proposed research will generate evidence and outcomes amenable to translation into policy and practice change, including: an anti-racist dental curriculum, Aboriginal and Torres Strait Islander dental workforce strategies, and an oral health promotion training for AHW/P. These outcomes will directly enhance training of non-Indigenous dental health practitioners, support the attraction, retention and wellbeing of the Aboriginal and Torres Strait Islander dental workforce, and the embedding of oral health within ACCHOs. These strategies will contribute to oral health knowledge at the Community level, in turn supporting Aboriginal and Torres Strait Islander self-determination of oral health. Translation of strategies and learnings will be achieved through dissemination of the research findings to health organisations, services, peak bodies, and universities involved in the research, and subsequent collective advocacy for adoption of evidence into practice guidelines at a practitioner, university, ACCHO, and regulatory level. The collective responsibility and relational nature of this work enhances the feasibility of this work to have tangible impacts across the dental health system in Australia.

## **CONCLUSION**

This protocol outlines an anti-racist health services and system research project which seeks to intervene at three levels of Australia's dental health system to address structural racism. The findings and materials generated will directly inform policy regarding the development of an anti-racist dental health workforce, including anti-racist dental practitioners, supportive environments that increase the

number of Aboriginal and Torres Strait Islander dental practitioners, and AHW/P equipped with oral health knowledge. The approach utilised in this project is vital as dental health systems research has predominantly occurred using biomedical, colonial, deficit, and Western perspectives of oral health and healing (64), therefore missing opportunities to address structural racism and resolve oral health inequities effectively, particularly as they pertain to Aboriginal and Torres Strait Islander Peoples (36).

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## CONFLICTS OF INTEREST

None to declare.

## ABBREVIATIONS

**ACCHO:** Aboriginal Community Controlled Health Organisation

**ADA:** Australian Dental Association

**Ahpra:** Australian Health Practitioner Regulation Agency

**AHW/P:** Aboriginal Health Worker/Practitioner

**BDS:** Bachelor of Dental Surgery

**BOH:** Bachelor of Oral Health

**IDAA:** Indigenous Dental Association of Australia

**IPTW:** Inverse Probability of Treatment Weighting

**NACCHO:** National Aboriginal Community Controlled Health Organisation

**PGC:** Project Governance Committee

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## Supplementary Files

## Multimedia Appendixes

Project governance committee terms of reference.

URL: <http://asset.jmir.pub/assets/66330c9974e5bd55ba28d74fcf876e6e.pdf>