

Characterising health promotion in Aboriginal and Torres Strait Islander languages: A content analysis of COVID-19 and maternal health resources

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Abstract

Issue addressed: Health promotion resources in Aboriginal and Torres Strait Islander (Indigenous) languages are being widely translated and disseminated at the community, health service and government level. In addition to outlining the relevant Australian policy context and evidence base, this study sought to describe the availability and characteristics of COVID-19 and maternal health promotion resources incorporating Indigenous languages.

Methods: Health promotion resources published online between June 2005 and June 2020 were identified by a desktop scan and screened against quality inclusion criteria. A content analysis by resource type, health topic, purpose, use of language and source was conducted.

Results: A total of 215 resources was eligible for inclusion, incorporating 50 different Indigenous languages and representing a varied approach to language use and health promotion. Almost 7 times as many COVID-19 resources were identified than maternal health materials.

Conclusions: In contrast to maternal health, COVID-19 has seen a sharp rise in the number of health promotion resources produced in language, especially in formats capable of streamlined replication in multiple languages. Strong use of narrative, storytelling and alternative primary aims such as language education suggests potential for greater collaboration between health promotion organisations and other community groups and services. Bilingual resources may have applications for communities where traditional language knowledge is being reawakened.

So what?: Emerging capacity to efficiently produce health promotion resources in multiple Indigenous languages could be capitalised for health topics beyond COVID-19. However, further research in determining best practice and user perspectives is essential in guiding the development of these resources.

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KEYWORDS

Aboriginal and Torres Strait Islanders, culturally and linguistically diverse people, health equity, health literacy, health policy

1 | INTRODUCTION

The latest National Agreement on Closing the Gap makes clear the failure of successive governments to correct disparities in health outcomes between Aboriginal and Torres Strait Islander (Indigenous) and non-Indigenous people.¹ Given persisting disparities, in recent years policy makers have placed an increased focus on innovative approaches to reducing health inequality, such as incorporating culture into health initiatives.² Emerging evidence indicates connection to traditional language and culture plays a protective role in fostering wellbeing and good health for Indigenous people, indirectly improving health outcomes such as rates of suicide and diabetes.³⁻⁵ In Australia, research in this space has primarily focused on the current state of Indigenous languages, the importance of preserving languages in order to foster strong cultural identity, and the impacts of language reclamation programs on social and emotional wellbeing, an Indigenous holistic and whole-of-life view of health.⁶⁻⁹

There is scope to consider the role of Indigenous languages in health promotion to provide avenues for directly improving health outcomes. In addition to traditional knowledge sharing, Indigenous languages have been incorporated into resources relating to a wide variety of health topics, such as maternal health, for many years now. However, the coronavirus disease 2019 (COVID-19) pandemic has also illustrated the capacity of organisations to rapidly produce and disseminate health promotion resources in Indigenous languages, with messages being translated and distributed within only months of the first recorded COVID-19 cases in Australia.¹⁰ Despite resources already being published in Indigenous languages at the community, health service and government level, little research has been conducted on this form of health promotion. The result is a gap in our understanding of the development, distribution and impact of health promotion materials in Indigenous languages. There is a need to characterise online health promotion in this space as a foundation for further research measuring if resources in language translate into better community knowledge and exploring how users perceive these resources. Examining maternal health and COVID-19 provides opportunities for the comparison of a range of health promotion resources produced both consistently and reactively on a national scale.

This article outlines the Australian policy context and evidence base informing the use of Indigenous languages in health promotion and presents a content analysis of online maternal health and COVID-19 resources incorporating Indigenous languages. The aim of the study is to describe the availability and characteristics of COVID-19 and maternal health promotion resources in Indigenous languages. To achieve our aim, we will identify publicly available maternal health and COVID-19 health promotion resources

incorporating Indigenous languages, and characterise these resources by resource type, health topic, purpose, use of language and source.

This study forms the first part of a multi-staged project which will aim to extend the work conducted in this study to explore health worker and user perspectives of resources in language and evaluate the impact of different approaches to the publication and dissemination of health promotion resources in language. A digital database of resources identified in this study will be made publicly available.

2 | BACKGROUND

2.1 | Current state of Australian Indigenous languages

Indigenous languages in Australia are undergoing a renaissance. Of more than 120 Indigenous languages still in use, at least 31 language varieties are currently being reawakened by communities in Australia. 12 Indigenous languages are still considered 'strong', meaning they are spoken by all age groups and acquired by children.¹¹ In the 2016 Australian census 63,754 people, or 10% of Aboriginal and Torres Strait Islander respondents, reported speaking an Indigenous language at home. Of the people who spoke an Indigenous language at home, 85% reported speaking English well or very well, while 11% reported they did not speak English well at all.¹² Statistics focused on language use 'at home' may be misleading, failing to account for individuals currently in the process of reclaiming knowledge of traditional languages, or communication difficulties that run deeper than language barriers alone. This includes misunderstandings rooted in differing culturally derived health concepts and worldview, the way groups of people categorise and conceptualise their cultural realities.^{13,14}

2.2 | Navigating the policy context

Characterising the use of Indigenous languages in the Australian public sector necessitates recognition of the legacy of past oppressive policies. Although Indigenous languages have increasingly gained political support, comparatively few firm policy changes have reflected this shift.^{15,16} Despite acknowledging the need to do so, the Australian government has not published a national policy update on Aboriginal and Torres Strait Islander languages since the 2009 National Indigenous Languages Policy, which was criticised for failing to address issues with implementation, funding, and inter-departmental and interstate policy coordination.^{16,17} In the media, discussion has also at times been marked by the argument that there

are 'too many' Australian Indigenous languages to support increased use in the public sector.^{18,19}

The Closing the Gap Refresh consultation process identified language and culture as a priority area, and it has been allocated targets in the 2020 National Agreement on Closing the Gap.^{1,20} These targets, aligning with the UN declaration of the International Year of Indigenous Languages in 2019, also complement the Commonwealth Government International Year of Indigenous Languages Action Plan which includes a commitment to promote Indigenous languages in health literacy, prevention and education materials. Additionally, the Action Plan outlines a commitment to consider Indigenous languages in strategies that address the cultural determinants of health in the next iteration of the Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013-2023.²¹

Indigenous peak health organisations understand that sharing culturally safe resources that incorporate language that is easily understood results in more effective messages. The Australian Indigenous Doctors' Association defines cultural safety as the accumulation and application of knowledge of Indigenous values, principles and norms in order to overcome the cultural power imbalances of places, people and policies.²² In their Cultural Safety Framework, the National Aboriginal and Torres Strait Islander Health Worker Association specifies that public policy 'must recognise and accommodate for the diversity and difference within and between Aboriginal and Torres Strait Islander communities and the multifaceted differences, experiences and realities that define them.'²³ This concept of 'local cultural contextuality' within cultural safety is particularly relevant to the use of language in health resources, as the incorporation of localised voices, narratives and culture through language may provide a means of addressing this domain. Within the context of health system effectiveness and clinically appropriate care, the National Aboriginal and Torres Strait Islander Health Plan 2013-2023 currently identifies the implementation of cultural safety and quality of care agendas as a key strategy.²¹ This reflects the global importance of culture within the determinants of health, as cultural determinants are recognised as factors that promote resilience, foster a sense of identity, and support good mental and physical health and wellbeing.²⁴

2.3 | Existing evidence base for health promotion in Indigenous languages

Formal evaluations of Indigenous health programs are limited in number and quality, and the need for better evaluation in this sector is well recognised.^{25,26} In the area of health promotion in Indigenous languages, the literature primarily consists of case reports, organisation-led assessments, and brief discussion within broader qualitative studies of culturally appropriate health materials. Anecdotal evidence from health professionals working with Indigenous communities indicates that oral education or information dissemination in the first language of the patient can counteract communication failures and information deprivation.^{14,27,28}

Illustratively, an early report of the Aboriginal Community Controlled Health sector response to the COVID-19 pandemic described how the creation and distribution of tailored and culturally appropriate resources, including those using Indigenous languages, was effective in delivering trusted health promotion and crisis communication across multiple platforms.¹⁰ Public health awareness and education campaigns in other areas such as breast cancer screening have also incorporated Indigenous languages as an adjunct to other forms of health promotion.²⁹ Additionally, the literature finds that health promotion in language goes beyond solely the translation of messages, to also consider worldview, culturally-based teaching styles and visual aids.^{27,28} For instance, evaluations of health promotion programs with slogans in language such as 'No More Boondah' (No More Cigarettes) in Canberra and 'Yaka Njarali' (No Smoking) in East Arnhem Land suggest messages in language are engaging, recognisable and acceptable to community.^{30,31} One report describes a family taking such ownership of this message as to place a Yaka Njarali sign on their home to show it was smoke free.³⁰

Despite not explicitly examining traditional Indigenous languages themselves, studies of culturally appropriate resources provide insights into the impacts and barriers to health promotion in language. For instance, the use of 'familiar colloquial language' in Indigenous health promotion resources contributes to improving the acceptability of message delivery.³² The iconic safe-sex promoting 'Condoman' is a clear example of the impact of this use of Aboriginal English in health promotion, with the message 'Don't be shame be game - Use condoms' achieving high levels of recognition in Australia.³³ Not all findings have been so positive. Another study of resources using common Indigenous Australian terms such as mob and Elder found that despite the availability of culturally appropriate resources, health professionals participating in the study were unaware of their existence, potentially due to poor accessibility or ineffective dissemination techniques.³⁴

Indigenous health promotion research is increasingly recognising a desire for resources in language. In a study of the use of culturally appropriate educational flipcharts, carers identified a desire for flipcharts to be transcribed into language, specific to community.³⁵ In another study, participants overwhelmingly cited language as both the single most important feature of educational resources and the most significant barrier to effective communication. Participants perceived best-practice to be the removal of medical jargon, and the translation of plain English to local language using 'culturally safe' concepts, with a preference for an electronic format emphasising interactive pictures and less text unless in spoken and written local language.²⁸

2.4 | A focus on maternal health and COVID-19

The COVID-19 pandemic has had a disruptive impact on the Indigenous health sector. Recognition of the increased risk faced by Indigenous people due to higher rates of comorbidities, barriers to healthcare, and socio-cultural factors has led to mobilisation

and action at all levels of community, government, and health organisations. Aboriginal Community Controlled Health organisations and their peak bodies developed health messages about COVID-19 even before the World Health Assembly declared COVID-19 a global pandemic in March 2020.¹⁰ By contrast, maternal health has been a long-standing issue in Indigenous health. It is usually defined as the health of women before and during pregnancy, childbirth and the postpartum period. A particular emphasis should be placed on maternal health given the importance of early and continued engagement with antenatal care for long-term health outcomes. In our study, maternal health also incorporates broader aspects of women's health that may be applicable to maternal health, such as women's mental health and postnatal child health, in accordance with holistic Indigenous approaches to health and wellbeing. The primary care sector is equipped to deliver maternal health promotion, with a 2014 systematic search of Indigenous maternal and child health interventions finding health promotion, education, advice and support to be documented in 70% of the literature reviewed.³⁶ Given the emerging importance of Indigenous culture and languages in Australian health policy and the health promotion literature, this study aims to explore online health promotion resources through content analysis, and address the following question: What are the availability and characteristics of COVID-19 and maternal health promotion resources in Indigenous languages?

3 | METHODS

We defined health promotion resources as posters, brochures, videos, or other tools designed to inform or enable, and thereby improve the physical, social, emotional and cultural wellbeing of Indigenous people.²⁵ Taking a strengths based approach, the study was guided by the National Health and Medical Research Council guidelines on ethical conduct in Aboriginal and Torres Strait Islander health research, and was approved by the ANU Human Research Ethics Committee with support from the Congress of Aboriginal and Torres Strait Islander Nurses and Midwives (Protocol 2020/112).³⁷

3.1 | Content analysis: search plan, screening process and categorisation

We identified COVID-19 and maternal health promotion resources in a desktop scan conducted in July 2020, using a search plan that incorporated five sources and the following quality inclusion criteria:

1. The resource is free and publicly available online, published in Australia between June 2005 and June 2020 inclusive.
2. The resource content focuses on maternal health and/ or COVID-19 health promotion.
3. The resource incorporates at least one Australian Indigenous language, including both traditional and recently developed

Indigenous languages, as defined in the National Indigenous Languages Report.¹¹

4. The resource aims to promote health and wellbeing of Aboriginal and Torres Strait Islander people, such as by providing educational information.

The five sources of the search plan were: (i) the Australian Indigenous HealthInfoNet, (ii) peak Aboriginal Community Controlled Health organisations (ACCHOs), (iii) Federal, State or Territory health department websites (iv) relevant grey literature databases, and (v) Google search engine. Search terms included 'Indigenous language' AND 'COVID-19' OR 'coronavirus' OR 'social distancing' OR 'maternal health' OR 'pregnancy' OR 'antenatal care' OR 'postnatal care' OR 'women' OR 'Aboriginal and Torres Strait Islander health' OR 'health promotion'. Websites linked to relevant search results were then further searched to determine the presence of any additional resources through a process of snowballing. Resources were excluded at this point if they did not meet the inclusion criteria, were duplicates, or were associated with broken web-links (Figure 1).³⁴

On reviewing the entire sample, a coding table was developed inductively by the primary investigator to capture a range of resource features and address the study aims (Table 1).³⁸ All eligible resources were coded according to this coding table, to inform a content analysis of resources by resource type, health topic, purpose, use of language and source.

4 | RESULTS

4.1 | Availability of resources

The review identified 215 resources published between 2005 and 2020 eligible for inclusion. These resources included 68 written materials (books, booklets, flipcharts, posters, and brochures), 44 audio materials (radio segments), 100 visual materials (videos), and 3 interactive materials (mobile applications and web applications). Both COVID-19 and maternal health resources utilised a range of visual and written methods to communicate with audiences, however no interactive COVID-19 resources were identified, and no audio materials in maternal health were identified (Table 2). In total, 188 COVID-19 resources and 27 maternal health resources were included.

The majority of resources ($n = 202$) were identified through the Australian Indigenous HealthInfoNet and comprehensive searching of Indigenous organisation websites linked to HealthInfoNet results such as Aboriginal Medical Services Alliance Northern Territory (AMSANT) and Meigim Kriol Strongbala. Of the maternal health resources included in this study, 59.3% were produced by only two organisations, the New South Wales Department of Community Services ($n = 9$) and the Ngaanyatjarra, Pitjantjatjara and Yankunytjatjara Women's Council ($n = 7$). Remaining resources were published by both Indigenous and non-Indigenous health organisations, not-for-profit organisations, and land councils. Land

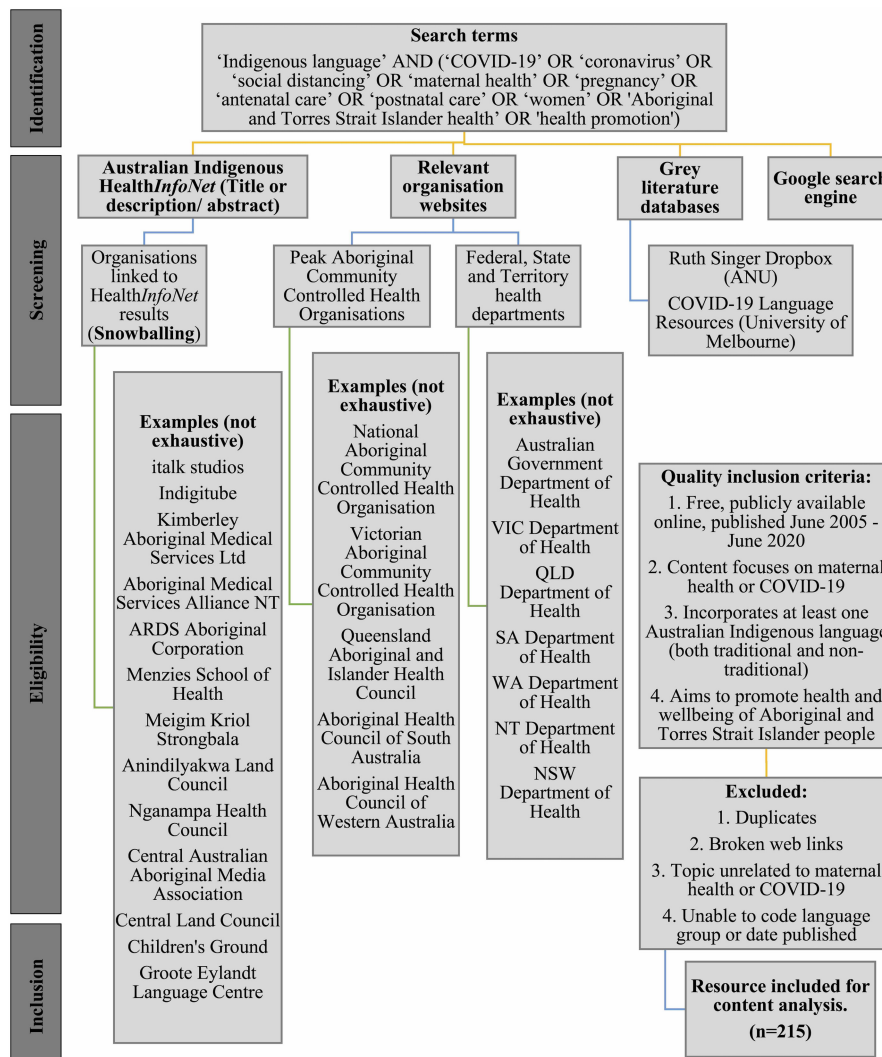


FIGURE 1 Search plan for online review of COVID-19 and maternal health promotion resources incorporating Aboriginal and Torres Strait Islander languages, including search terms, sources, and eligibility criteria. Using this search plan 215 resources were identified for inclusion in the study

councils and local Aboriginal Corporations were the biggest source of COVID-19 health promotion resources in language (n = 43), followed by the Northern Territory Department of Health (n = 38). Not-for-profit organisations, Aboriginal Health Peak organisations, community language and culture centres and non-Indigenous health organisations also created health promotion resources in language (Table 2). Resources were available in 50 different languages, with language groups represented across all states and territories excluding the Australian Capital Territory (Figure 2). Language group was coded according to the Australian Institute of Aboriginal and Torres Strait Islander Studies AUSTLANG Database (Table 3).³⁹

Charting the publication of maternal health and COVID-19 resources makes clear the comparative explosion of resources generated in response to the pandemic (Figure 3). In this study 87.4% of resources were related to COVID-19, with 188 resources produced in just 6 months following the outbreak. In contrast, 27 maternal health promotion resources were identified for the entire preceding

15-year period, making up only 12.6% of all resources included in the study.

4.2 | Use of language

The extent of incorporation of Indigenous languages varied greatly between health promotion resources (Table 2). 10.7% of the identified resources limited use of language to a single word or phrase within a key element of the resource, such as the title (n = 23). For instance, a poster by Children's Ground using Arrernte used the message '*Alengele atneye (stand at a distance). My family are at risk from COVID-19.*'⁴⁰ When such an approach to language was used, the word or phrase was mostly understandable across multiple languages and contexts. For instance, the Royal Women's Hospital's resource *You and Your Boorai: Taking Care During Pregnancy* described the use of the word 'boorai' (baby) as such:

Category	Definition
Date published	Month/ year when the resource was published. Where no month was provided, resources were coded as having been published in January of that year.
Type of resource	Resource media. Options: "visual" (video), "audio" (radio segment/ recording), "written" (book, booklet, brochure, flyer), "interactive" (mobile application, web application).
Language group	Australian Indigenous language used. Language was recorded from resource description or investigated where possible using Indigenous language dictionaries and contextual information.
Use of language	Number of words (or approximate percentage of the resource) incorporating Indigenous languages. Options: "full" (entirely in language), "partial" (approximately half the resource, excluding subtitles), "phrase" (1-2 sentences) or "word(s)" (1-5 words).
Health area	Health area addressed. Options: "maternal health" or "COVID-19".
Topic	Topic addressed within maternal health or COVID-19. Determined from resource abstract/ description or content of resource itself.
Source of publication	Name of resource publisher and/ or author. Determined from resource abstract/ description or content of resource itself.
Type of source	Subclassification of publisher. Options: "academic" (University or other educational institution), "ACCHO" (Aboriginal Community Controlled Health Organisation, such as an Aboriginal Medical Service), "ACCHO peak" (representative state or territory Aboriginal Community Controlled Health Organisation, or member of the Coalition of Peaks), "federal government", "state government", "Language service" (Organisation or centre based around Indigenous languages), "local government" (Land council, locally-based Aboriginal Corporation), "other Indigenous organisation" (Indigenous owned/ operated organisation not otherwise defined), "non-Indigenous organisation" (non-Indigenous owned/operated organisation not otherwise defined).
Approach to translation	Distinction between resources replicated into multiple different languages from an English template or tailored to the local context beyond language. Options: "not series" (not part of a series), "series - identical" (part of a series where resources are identical excluding language used), "series - not identical" (part of a series where resources are not identical).
English translation	Presence of an English translation. Options: "no" (no translation), "yes separate" (translation provided separately, such as in another version of the resource), "yes integrated, excluding subtitles" (translation viewable while viewing the resource), "cues only" (translation limited to highly simplified essential information), "partly" (some translation provided), "subtitles", "translation in non-English language".
Purpose	Purpose of the resource. Options: "advertisement/ informative only", "documentary format", "narrative-based" (storytelling), "language education", "entertainment (such as music videos)".

TABLE 1 Coding categories and definitions used for content analysis

We use the word boorai in this book, because it is common to many Aboriginal languages throughout Victoria. The book will be used by families from outside Victoria and we hope you understand the importance of using words that are meaningful to our local communities.⁴¹

Similarly, an advertisement by Bega Garnbirringu Health Service used the slogan 'If you want a baby, are having a baby, or breastfeeding, wiya wama, no alcohol is the safest choice' to raise awareness of the dangers of drinking during pregnancy.⁴² The

phrase 'wiya wama' (no alcohol) is common across several Western Desert languages such as Pitjantjatjara and Ngaanyatjarra, however it was used in this advertisement without acknowledgement of a singular language.⁴³

89.3% of resources (n = 192) were entirely published in language, whether this be in a written, audio, visual or interactive format. In 40.9% of resources (n = 88), English translations were provided separately, for instance in the video description, and not directly integrated into the resource. Over a third of resources integrated their translation, such as by using English subtitles (n = 78). Two resources used subtitles in another language, such as Kriol.

TABLE 2 Characteristics of a sample of 215 COVID-19 and maternal health promotion resources incorporating Aboriginal and Torres Strait Islander languages

Category	Characteristic	Count, by health topic		
		COVID-19	Maternal health	Total
Availability	Number of resources identified	188	27	215
Type of resource	Written	58	10	68
	Audio	44	0	44
	Visual	86	14	100
	Interactive	0	3	3
Source of publication	Academic	8	1	9
	Aboriginal Community Controlled Health Organisation (ACCHO)	16	3	19
	ACCHO peak	24	0	24
	Federal government	21	0	21
	State government	38	9	47
	Language service	9	0	9
	Local government	43	8	51
	Other Indigenous organisation	13	2	15
	Other non-Indigenous organisation	16	4	20
Use of language	Majority of resource entirely in language	178	14	192
	Phrase in language (1-2 sentences)	6	9	15
	Word(s) in language (1-5 words)	4	4	8
Approach to translation	Not part of a series of resources	90	12	102
	Series, identical (part of a series where resources are identical excluding language used)	94	6	100
	Series, not identical (part of a series where resources are not identical)	4	9	13
English translation	No translation provided	47	0	47
	Translation provided separately	82	6	88
	Translation integrated, including subtitles	31	8	39
	Partial translation provided, including cues	26	13	39
	Translation provided in non-English language	2	0	2
Purpose	Advertisement/ informative only	180	14	194
	Documentary format	1	2	3
	Narrative-based (storytelling)	1	10	11
	Language education	4	1	5
	Music video	2	0	2

4.3 | Approaches to language

46.5% of resources identified in the desktop scan were part of resource collections where, excluding language of delivery, health promotion materials were indistinguishable from each other ($n = 100$) (Figure 4). In other words, the resource had initially been created in English, translated into multiple languages, and the translations then dubbed over the original or used to replace the original text. For instance, the Northern Land Council's short film series about COVID-19 was produced in 18 different languages, with translations completed by the Aboriginal Interpreter Service.⁴⁴ In these resources, messages in language were voiced over the same English

version of the short film. Similarly, the Australian Government Department of Health 'Stay COVID free, do the three' radio ad series in language provided an identical transcript for all 6 translations of the health promotion message.⁴⁵

In contrast, 6% of resources were part of a resource collection where the graphics, imagery or use of language was different between resources ($n = 13$). For instance, Menzies School of Health produced 4 videos in language targeting people living in remote communities with chronic health conditions, encouraging them to stay on country, continue treatment for their health condition, stop smoking, and look to family, community and country for emotional support.⁴⁶ Each video had a similar format and message, but

Geographic distribution of Australian Indigenous languages used in Maternal Health and COVID-19 resources (2005-2020)

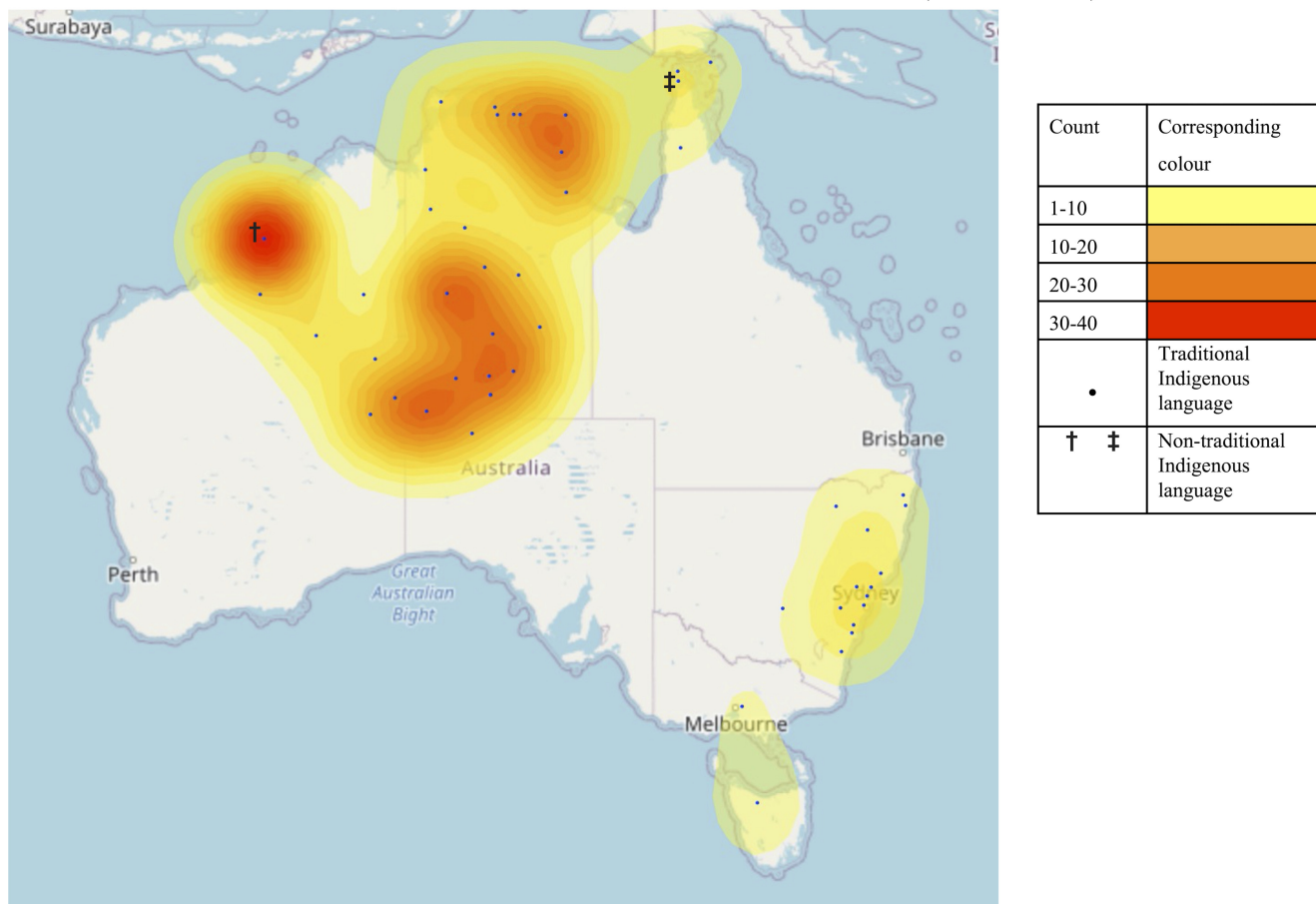


FIGURE 2 Distribution of Indigenous languages used in a sample of 215 COVID-19 and maternal health promotion resources in language, by geographic location of traditional homeland and number of times language identified. This heatmap, produced in a web-enabled heat mapping program, demonstrates the geographic distribution of languages used in the results of a desktop review of health promotion resources, as determined by content analysis.⁵⁵ Geographic localisation of languages has been coded according to the Australian Institute of Aboriginal and Torres Strait Islander Studies AUSTLANG Database.³⁹ Where longitude and latitude coordinates were not provided, the geographic coordinates of an appropriate Aboriginal Language Centre/Land Council were used. †Kriol and ‡Yumplatok are non-traditional Indigenous languages and incorporate several dialects. For the purposes of this graph these languages have been mapped in a single location, however their true distribution of origin extends across a far wider region of Australia and the Torres Strait

featured different members of the relevant community who introduced themselves and then delivered the message in language. Similarly in maternal health, a series of 8 parenting books produced by the New South Wales Department of Corrections acknowledged that it was adapted from a 2005 Far North Coast Aboriginal parenting book, *Doorarnbee Muggy Jarjums*.⁴⁷ Despite being based on the same book, these resources all employed different images, illustrations and references to community and place.

47.4% of resources used in this study ($n = 102$) were not part of a wider series of resources. Many of these resources were closely related to the local context from which they originated, featuring videos or photos of local Elders, prominent community members, buildings, and country. For instance, a video created by Numbulwar Culture and Media for community members of Numbulwar featured

a film clip of the local community health centre during dialogue in Kriol encouraging persons having travelled overseas and feeling unwell to attend the clinic for a check-up.⁴⁸

4.4 | Format and engagement

Narrative and storytelling were key components in almost 60% of maternal health visual and interactive resources ($n = 10$), and 37% of all maternal health resources (Table 2). Stories were communicated through both live-action performance, and a combination of voice over and animation. For instance, one live-action resource directed by Indigenous women and produced by Rheumatic Heart Disease Australia provided the following opening description of its storyline;

TABLE 3 Distribution of Aboriginal and Torres Strait Islander languages used in a sample of 215 COVID-19 and maternal health promotion resources in language

Language name	Count
Alyawarr	5
Anindilyakwa	11
Anmatyerr	5
Awabakal	1
Bundjalung	1
Burrara	5
Darkinyung	1
Dharawal	1
Dharug	1
Dhurga	1
Eastern/ Central Arrernte	12
Eora	1
Gamilaraay	2
Guringai	1
Kala Lagaw Ya	1
Kriol	38
Kukatja	1
Kunwinjku	4
Luritja	1
Martu Wangka	7
Maung	3
Meriam Mir	1
Mudburra	2
Murrinh Patha	4
Ndjebbana	1
Ngaanyatjarra	8
Ngaatjatjara	2
Nganyawana	1
Ngarinyman	2
Nyangumarta	1
Palawa kani	4
Pertame	1
Pintupi	1
Pintupi-Luritja	2
Pitjantjatjara	20
Tiwi	5
Wandanian	1
Warlmanpa	1
Warlpiri	23
Warumungu	5
Western Arrarnta	5
Wik	2
Wiradjuri	1

(Continues)

TABLE 3 (Continued)

Language name	Count
Worimi	1
Wurundjeri	2
Yaegl	1
Yankunytjatjara	2
Yanyuwa	9
Yolnu Matha	12
Yumplatok	5

Note: Language used was determined by content analysis. Languages have been coded according to the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) AUSTLANG Database. The total number of times languages were identified ($n = 228$) is greater than the total number of resources ($n = 215$), as some resources used more than one Indigenous language. For consistency and to avoid duplication of languages where languages are referred to by several names, the language name corresponds to the AIATSIS reference name and not to the language name used in the resource.

The story opens with Tess in her bedroom. Tess texts with her boyfriend who says he would like to get serious and have a baby with her! Tess is surprised and happy but she has not told him that she has RHD! She phones her best friend Tina and they talk about the issues; they have many questions...⁴⁹

Comparatively few COVID-19 resources identified in this scan utilised similar narrative techniques, with only one resource incorporating a storyline. The resource, a short animation created by Kimberley Aboriginal Medical Services in Western Australia, described a scenario in which COVID-19 was transmitted in a remote community by people who shared a car ride to a grocery store. The resource used local language and referenced local cultural protocol;

... But Mike already got corona. Now he bin give it to Tom, who bin give it to Sam, who bin give it to Beth in the car. Now they altogether got him [coronavirus]. This is the sneaky way that virus get around la us. We gotta treat everyone outside la home like a lumbarra, like a poison cousin...⁵⁰

Almost all COVID-19 resources were designed in a directly informative or advertisement-like format ($n = 180$). However, many of these resources utilised interviews with Elders and community leaders to communicate information. For instance, a video by the Western Desert Lands Aboriginal Corporation published on YouTube purely consisted of the Chairman of the organisation speaking directly to a camera about COVID-19 in local language.⁵¹ No maternal health visual resources were identified that similarly featured interviews with Elders or community leaders, though one video did include interviews with respected local Aboriginal health workers. Overall, only

Publication of Maternal Health and COVID-19 resources in Australian Indigenous languages (2005-2020)

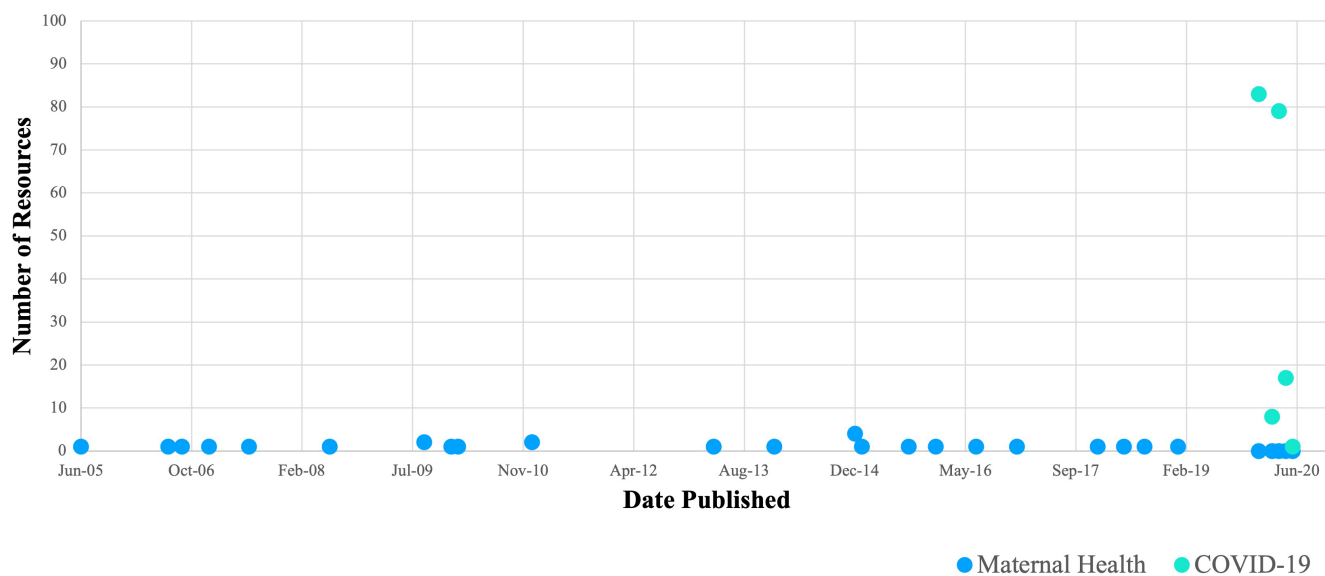


FIGURE 3 Month/ year of publication of resources in a sample of 215 COVID-19 and maternal health promotion resources in language, by health topic and number of resources identified. This graph, produced in Excel, indicates the incidence of the publication of health promotion resources using Indigenous languages between June 2005 to June 2020. 215 resources were published in 27 different months, with maternal health resources spanning June 2005 to January 2019, and COVID-19 resources spanning January 2020 to June 2020. The maximum number of maternal health resources coded to a single month was 4 (January 2015), and the maximum number of COVID-19 resources coded to a single month was 83 (January 2020). Date published was determined by content analysis of the results of a desktop review

Approach to language translation in Maternal Health and COVID-19 resources in Australian Indigenous languages (2005-2020)

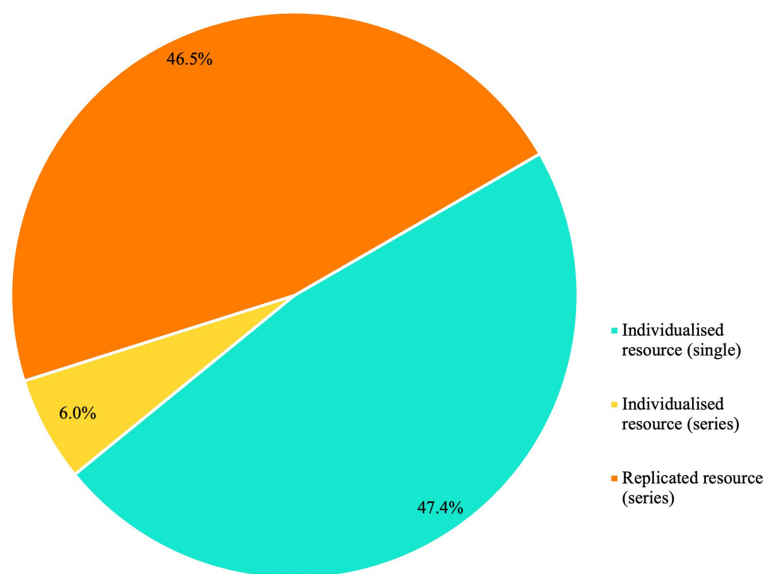


FIGURE 4 Approach to translation in a sample of 215 COVID-19 and maternal health promotion resources incorporating Indigenous languages, by approach and percentage of all resources. This chart, produced in Excel, illustrates the distribution of approaches to translation of resources using Indigenous languages between June 2005 to June 2020. Approach to translation is defined as follows to distinguish between resources replicated into multiple different languages from an English template or tailored to the local context: "Replicated resource (series)" refers to resources from a series of identical resources excluding language used, "Individualized resource (series)" refers to resources from a series of non-identical resources, and "Individualized resource (single)" refers to resources not part of a series. Approach to translation was determined by content analysis of the results of a desktop review

51.9% of maternal health resources used a primarily informative or advertisement-like format ($n = 14$).

Some resources included in this study promoted health messages secondary to an alternative primary aim, such as language education or entertainment. For instance, a series of short videos produced by the Tasmanian Aboriginal Centre promoted a Palawa Kani language program to be run in April 2020, while also outlining public health messages such as '*Krakani (stay). Liprini (home). Krakani liprini (stay home)*'.⁵² Another COVID-19 resource used a music video format to promote safe behaviours such as proper handwashing.⁵³ Entertainment also featured in maternal health resources, with one 16-minute video identified in the scan using animation and voice-over to outline the impacts of social and emotional determinants of health in the context of maternal and child health. A description of the film provided the following outline;

Tjulpu and Walpa is the story of two young Anangu girls – one who has a difficult path growing up, while the other has a happy upbringing. Originally developed in the format of a book, the story of Tjulpu and Walpa has now been adapted to an animated film.⁵⁴

5 | DISCUSSION

This desktop review collated a selection of publicly available online health promotion resources incorporating Indigenous languages, and characterised these resources by resource type, health topic, purpose, use of language and source. It appears to be the first systematic assessment of the availability and characteristics of online health promotion resources in Indigenous languages at a national level in Australia. Due to a focus on language use, resources identified in the review were not assessed for cultural competency before inclusion. The use of Indigenous languages in these resources should therefore not be conflated with cultural safety. Resources are part of a suite of tools that assist clinicians and service providers however they do not replace the need for cultural safety to be a part of service delivery and care. Although resources may act as an adjunct to cultural safety, there is still a requirement for non-Indigenous clinicians to walk alongside their Aboriginal and Torres Strait Islander colleagues and create a two-way learning.

Although attempts were made to ensure complete and systematic searching of websites and databases in the search plan, the complex nature of the topic made developing conclusive search terms challenging. The inclusion criteria did not allow for the capture of resources not publicly available online, and therefore may have resulted in community-based resources being underrepresented in the sample. Due to the scarcity of maternal health resources and consideration of the holistic Indigenous approach to health and wellbeing, definitions of 'maternal health' were relaxed to incorporate broader aspects of women's health that may be applicable to maternal health, such as women's mental health and postnatal child health. Both maternal health and COVID-19 are

significant health concerns which have historically and contemporaneously been greatly involved with health promotion. Though examination of these resources may provide an insight into health promotion in language as a whole, these findings may not reflect approaches to health promotion in language in all health areas. Additionally, given the ongoing and rapidly changing nature of the COVID-19 pandemic, it should be noted that the results included in this study relate only to the first 6 months of the pandemic. Planning for this piece of work preceded the COVID-19 pandemic, which has heightened the need to distribute information to Indigenous communities using a range of approaches.

Despite acknowledging the limitations of the study's scope, the scarcity of maternal health materials ($n = 27$) as compared with COVID-19 resources ($n = 188$) is apparent. Although the identification of a significant number of COVID-19 resources is likely to have been fuelled by the critical nature of the COVID-19 pandemic, this proliferation of health promotion resources in language also aligns with policy and research shifts towards increased recognition of the role of language and culture in Indigenous health, such as the 2020 National Agreement on Closing the Gap Target 16 'Aboriginal and Torres Strait Islander cultures and languages are strong, supported and flourishing'.^{1,21} Despite this increasing prevalence, practical policies and guidelines on the distribution and use of Aboriginal and Torres Strait Islander languages in health literacy, prevention and education materials are lacking. In light of evidence of resource publication in language at the government and non-government level, policy and practice guidelines need to catch up with existing health promotion activities.

While the majority of the existing literature on health promotion in Indigenous languages has focused on resources and programs developed and run by the Aboriginal Community Controlled Health sector, only 20% of resources identified in the scan were published by ACCHOs or representative state or territory ACCHOs ($n = 43$).^{14,30,31} This review identified a large number of resources in language produced by government and non-Indigenous organisations, suggesting capacity and responsibility for creating and disseminating such resources is being taken up beyond the Aboriginal Community Controlled Health sector. It is possible these resources were created in collaboration with ACCHOs and then published and distributed by non-Indigenous organisations. However, this finding challenges the literature, which suggests that the Indigenous health sector is best placed to deliver health promotion materials in areas such as COVID-19 where public trust is critical.¹⁰ Given ACCHOs are focused on service delivery, communication is primarily delivered locally. It is likely that health promotion resources produced by ACCHOs were not as widely available in the sources used in the search plan, utilising other means of distribution which were not systematically searched in this study, such as social media and Indigenous radio stations.¹⁰ Additionally, government and non-Indigenous organisations may currently be better resourced than ACCHOs to create resource collections in multiple Indigenous languages, especially where the topic is related to a national public health emergency.

Health promotion resources identified in this study incorporated 50 different languages, almost four times the number of languages currently considered 'strong'. The Australian Government Department of Health alone produced audio messages about COVID-19 in 21 different languages. This use of language raises a strong counter example to the argument that there are too many Indigenous languages to enable wider translation in the public sector.¹⁸ It also suggests there may be scope to consider further translation of health messages in languages less widely spoken at home, such as those currently being reclaimed. The assumption may be that resources in Indigenous languages replace resources in English, particularly benefiting individuals for whom English is a second, third or even sixth language. While this can certainly be the case, the literature suggests that for the majority of Indigenous people who do not report speaking an Indigenous language at home, engagement and connection with language within health promotion resources may serve a purpose other than discrete information communication. Indigenous languages, by encompassing explicit and implicit meaning and deep links to history, culture, and shared experiences, can provide an opportunity to engage audiences with health promotion regardless of whether the message can or cannot be understood in English. Incorporation of words in language within culturally safe resources may serve a dual purpose of communicating primary health promotion and enabling connection to traditional language and culture, indirectly fostering wellbeing.^{6,8,14}

Similarly, it is apparent that many resources identified in this review approached health promotion directly or indirectly through narrative and storytelling. This incorporation of storytelling may add a culturally appropriate element to Indigenous health promotion by echoing oral traditions, while also providing an entertaining means of delivering health information in language. Maternal health resources used storytelling more frequently than COVID-19 resources, which may reflect the challenges in developing creative resources when faced with time-critical health problems. In contrast, COVID-19 resources more frequently featured trusted community leaders and Elders, an effective health promotion technique in the context of a health issue marred with uncertainty. While outside the scope of this study, both these kinds of resources, often distributed on Indigenous media websites or social media, yielded high levels of engagement. Further research aiming to characterise and understand engagement with Indigenous health promotion resources on social media may contribute to better understanding effective methods of disseminating culturally appropriate health resources, including those utilising language.

Finally, when examining resources in language, a distinction can be made between resources converted directly from English into language, and those built up in language from conception. Without insight into the translation process or traditional language knowledge, it is not possible to confidently judge whether a message in language has been developed conceptually or translated literally. However, the production of resources in language with identical graphics, imagery, and available English translations, implies a process of indiscriminate translation from English. Of the material in this study meeting the

inclusion criteria, 46.5% of resources utilised this generic approach. These resources were almost exclusively related to COVID-19. This approach to the incorporation of Indigenous languages is potentially cost effective, as it reduces the work required to create a health promotion resource and maximises the number of languages a resource may be translated into. This could have significant implications for health promotion in Indigenous languages, with potential applications to existing health promotion resources in other health topics, or future health promotion projects where a national scope is appropriate such as vaccination campaigns. That being said, such an approach may contradict cultural safety principles which suggest a preference for local cultural contextuality, where culturally safe practice recognises and accommodates for the diversity and difference within and between Indigenous communities.²³ Anecdotally, some communities have reported the perception that generic translation of resources into language is disrespectful. Principles of cultural safety would suggest the need to tailor the entirety of resources to local contexts, and it remains to be seen whether tailoring of language alone would be sufficient to establish individual and community-level connections with health messages in other health topics.

6 | CONCLUSION

This article explored the availability and characteristics of online health promotion resources in language in the context of both the longstanding public health issue of maternal health and the public health emergency of COVID-19. A desktop scan of resources from a 15-year period resulted in a broad range of publicly available digital resources, though community-based resources may have been underrepresented. Despite this, the capacity to produce and distribute health promotion resources incorporating Indigenous languages has been clearly demonstrated in the context of COVID-19. Even with a 14-year headstart, the review identified almost seven times as many COVID-19 resources than maternal health materials. This could remain isolated to the emergent context of COVID-19; however, if the COVID-19 pandemic marks the start of an upsurge in the wider production of health promotion materials in language, the Australian policy context and evidence base must adapt with it.

This review also highlighted the prevalence of resources produced in a format whereby replication in multiple languages is facilitated at the expense of incorporating features specific to local cultural contexts. While this demonstrated capacity to efficiently produce health promotion resources in multiple Indigenous languages could be capitalised for health topics beyond COVID-19, further research is required to investigate how relevance to local context impacts the effectiveness of resources when local languages have already been incorporated, and how users perceive these resources. In addressing the gaps in our understanding of the development, distribution and impact of health promotion materials in Indigenous languages, Aboriginal and Torres Strait Islander leaders and communities must be given the opportunity to lead the way we design and deliver health messages.

7 | RECOMMENDATIONS

As a result of this review, the authors make the following recommendations:

1. Indigenous health promotion resources must be developed and guided by Aboriginal and Torres Strait Islander communities.
2. Messages should be locally tailored, exclude medical jargon and use language that is recognisable and easy to understand.
3. Resource design and imagery should include Aboriginal and Torres Strait Islander artwork and cultural references.
4. Electronic formats should be used, as these allow for interactive pictures and oral narration, integrated use of English and facilitated distribution through social media.
5. The replication of a single resource into multiple versions, each translated into or incorporating a different Indigenous language, allows for cost-effective and rapid expansion of audience reach, which may be appropriate for health crisis messaging; however, it should be noted that this may also come at the cost of incorporating local community input and cultural safety principles.
6. The use of only single words or phrases in language within a resource must not be seen as insufficient and may increase the accessibility and acceptability of resources for those in the process of reclaiming traditional language knowledge.
7. Engagement with resources is increased when community leaders and Elders are included in health campaigns to tell stories and share messages, and the production of health promotion resources should consider collaboration with community groups to incorporate techniques such as narrative and storytelling, language education and entertainment.
8. Organisations must ensure strong resource dissemination plans are in place which include the Aboriginal Community Controlled Health sector.
9. Resources must be integrated in broader health education programs which allow users to access culturally safe health professionals who can explain information and answer questions.
10. Practical policies and guidelines on the distribution and use of Indigenous languages in health resources are needed to guide increasing publication and demand.
11. Further research is needed to measure if resources in language translate into better community knowledge, explore how users perceive these resources, and evaluate the impact of different approaches to the publication and dissemination of health promotion resources in language.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICS APPROVAL

This study has been approved by the ANU Human Research Ethics Committee (Protocol 2020/112).

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