

# Scoping review of knowledge translation in Aboriginal and Torres Strait Islander research contexts in Australia



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## Abstract

**Purpose** Knowledge translation (KT) has always been an essential part of Indigenous lives and cultures. Indigenous communities worldwide develop, share, translate and apply knowledge for community benefit. As a result of settler-colonial structures, KT processes in academia are predominately informed by Euro-Western ways of thinking that are inappropriate for Indigenous communities and undermine Indigenous ways of knowing, being and doing.

**Methods** A scoping review of KT literature in Aboriginal and Torres Strait Islander research contexts in Australia was conducted to lay the groundwork for developing KT methods and tools for this context. Items were eligible if they purposefully recruited Aboriginal and/or Torres Strait Islander participants, were in English and described ongoing or completed KT processes. Item screening and charting was iteratively conducted by Aboriginal and Torres Strait Islander peoples.

**Main findings** Forty-seven items were found. Of these, eight were considered examples of KT and aligned with cultural ways of translating knowledge. There was limited information on KT in the included items: 35 did not state a theory, 19 did not define KT, 26 did not state Indigeneity of authors and 23 did not disclose any Aboriginal and/or Torres Strait Islander governance or partnership.

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**Principal conclusions** Knowledge translation has always been a core component of Indigenous cultures and there is opportunity to leverage this strong base to incorporate Indigenous KT in research. The meaningful application of Indigenous KT will ensure that research agendas and priorities are identified and driven by Aboriginal and Torres Strait Islander peoples, and that knowledge is appropriately translated to ensure long-term benefit for these communities.

**Keywords:** Knowledge exchange; Knowledge transfer; Knowledge mobilisation; Indigenous; Aboriginal; Torres Strait Islander

## Highlights

- Indigenous peoples have been translating knowledge for generations.
- Knowledge translation methods in Australian Indigenous research is lacking.
- Indigenous knowledge translation will strengthen research impacts.

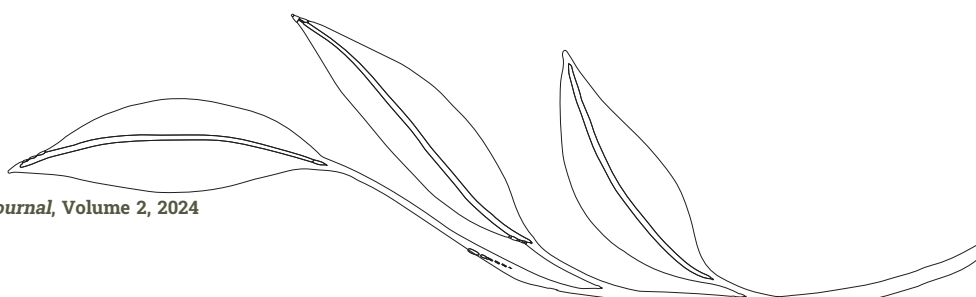
## Introduction

This study acknowledges the sovereign Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of their lands, waterways and skies, who have cared for and maintained Country, culture and community since time immemorial. This research was conducted across many Aboriginal and Torres Strait Islander ancestral lands, including land of the Ngannawal, Ngambri and Yirrganydji peoples. The authors acknowledge and respect the lands on which this research was conducted and thank the Elders and ancestors for safe passage through Country. They recognise the ongoing nature of settler-colonial Australia, where European colonisers came to this place in 1788 and never left, and that ‘invasion is a structure, not an event’ (Wolfe 2006, p. 388). It is acknowledged that Aboriginal and Torres Strait Islander peoples have continued to survive and thrive and have kept cultures and communities strong despite colonisation.

Indigenous communities worldwide have been developing, sharing, translating and applying knowledges at a community level to improve the lives of individuals, families and communities since time

immemorial; as evidenced through existence today. These knowledge translation (KT) processes can provide an integral component of Indigenous cultures and practices. Smylie (Métis-Cree) states that KT is and always has been ‘an essential part of Indigenous life and culture’ (Smylie 2018, p. 183). While KT is common at the Indigenous community level, KT in Indigenous research is somewhat emergent. Knowledge translation in research is a process of bridging gaps between research-generated knowledge and changes in behaviours and decision-making to improve outcomes (Smylie 2018). This is achieved through sharing research knowledge with knowledge users, who are typically the research participants and communities, or researchers, academics and policymakers who can affect change at the systems level (Canadian Institutes of Health Research 2016; Jull, Giles & Graham 2017). In Australia, KT has been defined by the Lowitja Institute, Australia’s only national community-controlled institute for Indigenous health research, as:

*the complex series of interactions between knowledge holders, knowledge producers and knowledge users,*



*with the goal of achieving research impact, which we define as positive and sustainable long-term benefit for Aboriginal and Torres Strait Islander peoples, beyond the realm of academia (Williams 2021).*

Ongoing settler-colonial structures, policies and practices continue to disrupt Indigenous peoples' cultures and connection to land, language and community, including the denial, undervaluing and mistreatment of Indigenous knowledges (Watson 2014). These structures actively and systematically exclude Indigenous peoples from systems, such as academia and the education system, which has led to a relatively small number of Indigenous scholars in universities (Loseto et al. 2020; McAllister 2019; Movono et al. 2021). Further, the education system tends to be dominated by Euro-Western values that actively influence methodologies, methods, what constitutes 'evidence' and the hierarchies in which 'evidence' is placed and implemented (Maddox et al. 2023). Such colonial racialised and hierarchical ways of knowing are problematic at best; they actively aim to eliminate Indigenous peoples and Indigenous knowledges, and silence and undermine Indigenous ways of knowing, being and doing (Maddox et al. 2023). This has resulted in limited Indigenous knowledges and literature in peer-review publications and a devaluing and questioning of the legitimacy of Indigenous knowledges (Loseto et al. 2020; McAllister 2019; Movono et al. 2021). It has directly and indirectly resulted in limited published literature authored by Indigenous peoples, and limited work that details a reciprocal relationship with the respective Indigenous communities involved in the research (Morton Ninomiya et al. 2022).

The active exclusion of Indigenous peoples from academia has also resulted in the sidelining of

Indigenous peoples in KT. This has resulted in KT processes that are predominately informed by Euro-Western ways of thinking, which continue to suppress and silence Indigenous ways of thinking, knowing and doing, resulting in KT that is often inappropriate for Indigenous communities (Eggleton, Anderson & Harwood 2022; Maddox et al. 2023). Indigenous scholars state that mainstream KT focuses on non-Indigenous peoples, particularly with health practitioners and policymakers, rather than KT for Indigenous communities, masking the needs of Indigenous peoples in plain sight. As Smylie argues, despite KT emerging as a priority in health research, there are limited applications and recommendations of KT for Indigenous peoples in clinical practice guidelines (Smylie 2018). Another critique is that the Indigenous KT work which is published is primarily being conducted by non-Indigenous peoples and has limited improvements for the Indigenous peoples involved in the work (Morton Ninomiya et al. 2022). Finally, much of the Indigenous research taught in schools and universities is being taught by non-Indigenous peoples.

Despite the exclusion of Indigenous peoples and knowledges in Euro-Western research, Indigenous peoples continue to maintain strong cultural values and protocols to determine knowledge sharing practices, including *what* knowledge is shared, *with whom* it is shared and *when* it is shared (Jarvis et al. 2021). Indigenous KT moves away from mainstream KT practices that exclude Indigenous peoples, knowledges and cultures. Indigenous KT sees Indigenous community members themselves driving the research agenda, identifying priorities and needs, and designing the methodology and methods to create effective research processes that will result in real and meaningful change at the community level (Croakey Professional Services 2021). While Indigenous KT



practices remain strong at the community level, Indigenous peoples internationally and in Australia are calling for better ways of implementing and evaluating KT with Indigenous peoples in research (Croakey Professional Services 2021; Morton Ninomiya et al. 2022; Smylie, Olding & Ziegler 2014).

This scoping review on KT in Aboriginal and Torres Strait Islander research contexts in Australia was conducted because there is limited evidence on the KT tools (i.e. definitions, methods and practices) in Aboriginal and Torres Strait Islander research. This scoping review has laid the groundwork for developing KT tools specific to the Aboriginal and Torres Strait Islander research context. The only way to have effective KT in Aboriginal and Torres Strait Islander research is to use and build on existing knowledges, KT practices and protocols, including cultural protocols. The research objective was to map, report and discuss the KT literature in Aboriginal and Torres Strait Islander research contexts in Australia.

Positionality and self-location are offered as these explain and inform the approach in this work. The authorship team are Indigenous peoples who work in the field of Aboriginal and Torres Strait Islander wellbeing. The first author (M-MB) is a Wiradjuri PhD candidate. All other authors are Indigenous academics (SB: Gamilaroi, Jaru and Gidja; FWL: Erubam Le and Mabuiag; RM: Bagumani (Modewa) Clans; LM: Juru and Pentecost/Tanna; CM: Torres Strait Islander; RL: Ngjyampaa/Wongaibon).

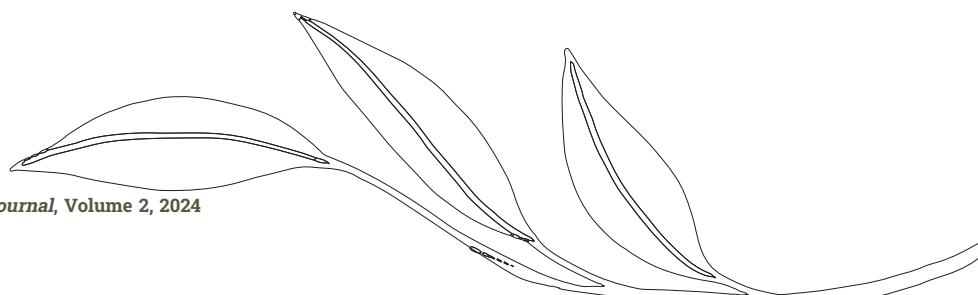
This work was governed by the Thiitu Tharrmay Aboriginal and Torres Strait Islander Research Governance Committee. Thiitu Tharrmay provided independent advice on research and evaluation activities conducted by the Centre for Aboriginal and Torres Strait Islander Wellbeing Research at the

Australian National University. It consists of at least 10 Aboriginal and Torres Strait Islander peoples who ensure that Aboriginal and Torres Strait Islander epistemologies (ways of knowing), axiologies (ways of doing) and ontologies (ways of being) are centred throughout the review. Thiitu Tharrmay members were involved in all stages of this work, including in authorship (LM, CM), and provided guidance on search terms, data charting, data visualisation and implications of this work to the broader research realm.

## Methods

This scoping review was conducted following Indigenist and Indigenous research methodologies set before us. In the words of Walter (palawa) and Suina (Cochiti Pueblo), an Indigenous research methodology is a methodology where ‘the approach to, and undertaking of, research process and practices take Indigenous worldviews, perspectives, values and lived experience as their central axis’ (Walter & Suina 2019). It is an overarching strategy and rationale of research that centres this throughout the whole research process; from research inception, through its implementation, until completion (Lovett, Brinckley & Jones 2021). As Rigney (Nurungga) states, the goal of Indigenous research methodologies is to conduct research that is of benefit to Aboriginal and Torres Strait Islander peoples, for Aboriginal and Torres Strait Islander peoples and works toward self-determination (Rigney 1999).

To centre the needs and wants of Aboriginal and Torres Strait Islander peoples, this scoping review was guided by Thiitu Tharrmay. To conduct research that is of benefit and empowers self-determination, this review followed leadership from peak Indigenous bodies calling for better research practices and more meaningful and impactful research with Aboriginal and





Torres Strait Islander peoples. For example, the Lowitja Institute requires research they fund to engage with KT practices (Williams 2021); the Australian Institute of Aboriginal and Torres Strait Islander Studies has requirements where Indigenous peoples are leaders, have genuine decision-making power and ownership over the research (Australian Institute of Aboriginal and Torres Strait Islander Studies, 2020).

As a principle of an Indigenous research methodology, Indigenous data sovereignty (IDS) was enacted throughout the scoping review, as outlined by the Maïam nayri Wingara Indigenous Data Sovereignty Collective. Indigenous data sovereignty is the right of Indigenous peoples to govern the creation, collection, ownership and application of their data. In Australia, IDS is derived from Aboriginal and Torres Strait Islander peoples' inherent right to govern their peoples, Country (including lands, waters and sky) and resources (Maïam nayri Wingara Indigenous Data Sovereignty Collective 2018). For details on how IDS principles have been adhered to throughout the scoping review, see Supplementary File S1.

A protocol for the scoping review was published (Brinckley et al. 2022). Registration for this scoping review is available at: <<https://osf.io/asmp6/>>. The Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist was followed (Supplementary File S2).

The search terms were developed in consultation with Thiitu Tharrmay, and further refined with a librarian from the Australian National University Hancock Library. Search terms for this scoping review were:

1. *Population*: (Aborigin\* OR "Torres Strait\*" OR Indigenous OR "First Nation\*" OR "First People\*") AND
2. *Concept*: ("knowledge translation" OR "knowledge exchange" OR "knowledge transfer" OR "knowledge mobilisation") AND
3. *Context*: Australia\*

The full list of search terms is available in Supplementary File S3.

Items in any research area and published at any date were eligible to ensure that the scope was as broad and inclusive as possible. Items were eligible if they purposefully recruited Aboriginal and/or Torres Strait Islander participants, were in English and described ongoing or completed KT processes (defined as having a theory, KT definition or KT method). Protocol papers were excluded as they outline upcoming work and therefore do not detail ongoing or completed KT processes.

### Information sources

In August 2022, the ANU SuperSearch database, an all-in-one academic search engine, was searched for peer-reviewed literature. At the time of conducting this scoping review, ANU SuperSearch accessed and searched in 568 e-resources and databases. The full list of e-resources and databases is available at: <<http://library-admin.anu.edu.au/e-resources/index.html?showAll=GO>>

To search for grey and hard-to-find literature, Indigenous research databases were searched, as these were expected to be where community-level project information would be found. The Lowitja Institute website was searched, as were Lit.Search, as it is the only national institute for Aboriginal and Torres Strait Islander Health research, and Australian Indigenous Health/InfoNet, as it publishes information to inform practice and policy in Aboriginal and Torres





Strait Islander health. The general Trove database and 'First Australians Images and Objects' Trove database were searched, as they hold collections from Australian libraries, universities, museums, galleries and archives. In addition, the *Aboriginal and Islander Health Worker Journal*, a national publication written by Aboriginal and Torres Strait Islander health workers, was searched. Lastly, reference lists of included material, books and book chapters were hand searched.

## Selection of sources

These search strategy steps outlined by [Peters \(2020\)](#) were followed:

1. Searched ANU SuperSearch and Indigenous research databases.
2. Removed duplicates.
3. Title and abstract screened by two independent Aboriginal and Torres Strait Islander reviewers.
4. Reviewed full-text of included items by an Aboriginal or Torres Strait Islander reviewer.
5. Charted data of all included items.

Any discrepancies in step three were discussed between the two reviewers to reach the final decision.

## Data charting process

The data charting process was developed by the research team in consultation with Thiitu Tharrmay. Each included item was charted by one Aboriginal or Torres Strait Islander reviewer, with full data charting results discussed with the whole research team.

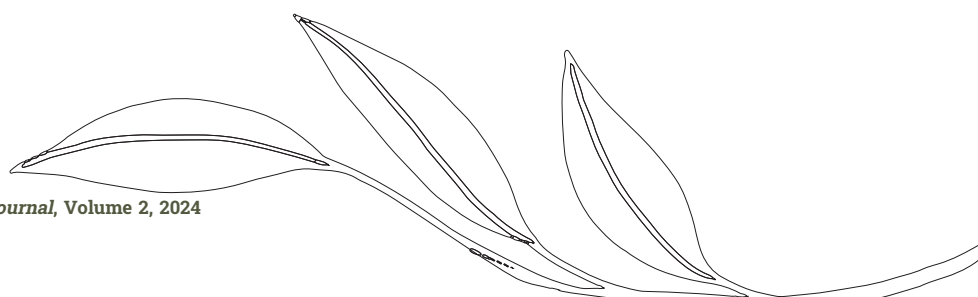
## Data items

As per the protocol ([Brinckley et al. 2022](#)), the research area, study type, characteristics of KT (theory, definitions, method, level as primary or component) and Indigeneity of authors and participants of the included items were charted.

To report on the KT methods, definitions as developed by [Lavis et al. \(2006\)](#) and used in a Torres Strait Islander research context by [Shibasaki et al. \(2019\)](#) were followed. Both 'push' and 'pull' methods describe a one-way transfer of knowledge. In a push method, knowledge holders share knowledge with knowledge users; while in a pull method, knowledge users take knowledge from knowledge holders. 'Exchange' methods (or 'integrated' methods) aim to bring together the knowledge holders and knowledge users for an iterative, two-way transfer of knowledge.

As is the iterative nature of scoping reviews, additional data were charted as themes emerged throughout the review ([Peters 2020](#)). Indigenous scholars and Indigenous peoples (including Thiitu Tharrmay) are increasingly calling for researchers and evaluators in Indigenous contexts to be 'upfront and transparent about their Indigenous or non-Indigenous identity' ([Morton Ninomiya et al. 2022](#), p. 3). Without evidence of Indigenous community engagement or partnerships driving the research, doubts are raised about whether the community wanted and will use the research, and concerns about the cultural safety and applicability of the research ([Morton Ninomiya et al. 2022](#)). Thiitu Tharrmay discussed how it is important to know and understand the level of engagement that Aboriginal and Torres Strait Islander authors and the community involved had in the research. This review therefore charted whether the included items had an Aboriginal and Torres Strait Islander governance committee or other community mechanisms for oversight of the research, as these inform the research methodology and methods and shape the KT approach.

Additional data were also identified by the team during the data extraction phase. These data provided additional detail to original data that were deemed too broad once data charting commenced. First, medical



and healthcare sub-areas were charted to provide information on the research area; second, the KT mechanisms used to provide a finer level of detail than mapping the KT method type (i.e. push, pull or exchange) were charted.

## Results

### Selection of sources of evidence

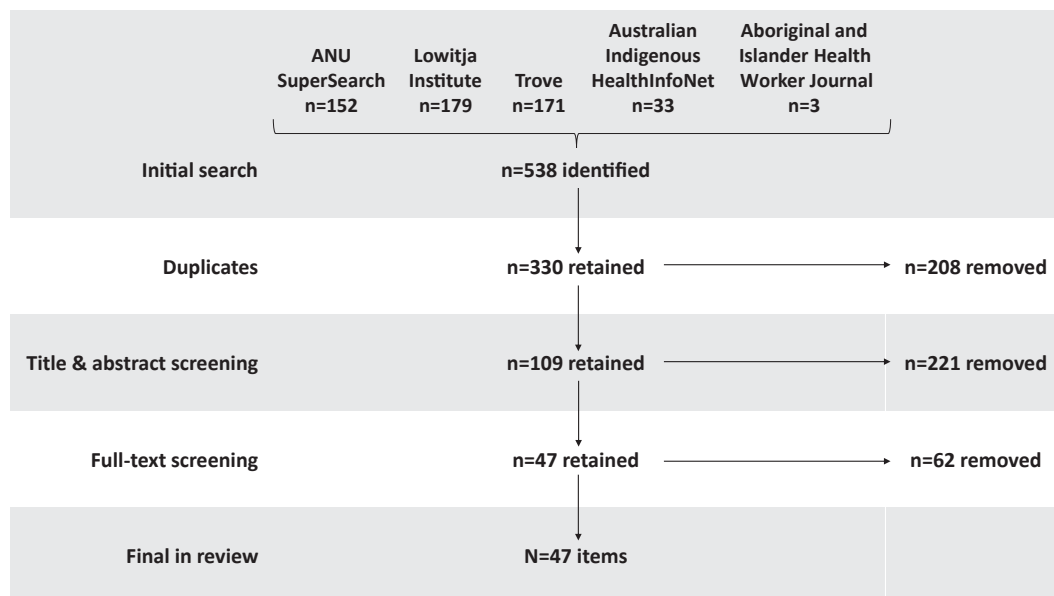
This review initially searched for included search terms found anywhere in an article. For peer-review items, this yielded > 19,500 responses. A first review found that many items were about Aboriginal and Torres Strait Islander peoples generally, rather than about KT practices in Aboriginal and Torres Strait Islander research contexts. The final search therefore limited the KT search terms to the abstract, keywords and title only, to reduce the number of items that did not explicitly engage with KT (see [Supplementary File S3](#)). EndNote20 was used to collect, organise, screen and de-duplicate items. This scoping review identified 330 unique items, which underwent title and abstract screening by two independent Aboriginal or Torres

Strait Islander reviewers. This removed 221 items, with 109 items remaining. The full texts of the 109 items were independently screened by an Aboriginal or Torres Strait Islander reviewer. After full-text review, 47 items were included in the review ([Figure 1](#)).

[Table 1](#) provides an overview of data extracted from the included items. A full reference list of the included items is available in [Supplementary File S4](#).

### Characteristics of sources of evidence

The most common study types were: 11 case studies (23%), nine empirical articles (19%) and five KT models (11%). Other study types were artworks and reports (four items each); evaluations, literature reviews and videos (three items each); opinion/commentary pieces and theses (two items each); and one website (2%). Most items (n = 24, 51%) were in the medical and healthcare research area only, and three items were in the social sciences and humanities research area only, while two items were categorised in both research areas. Given the large proportion of items categorised

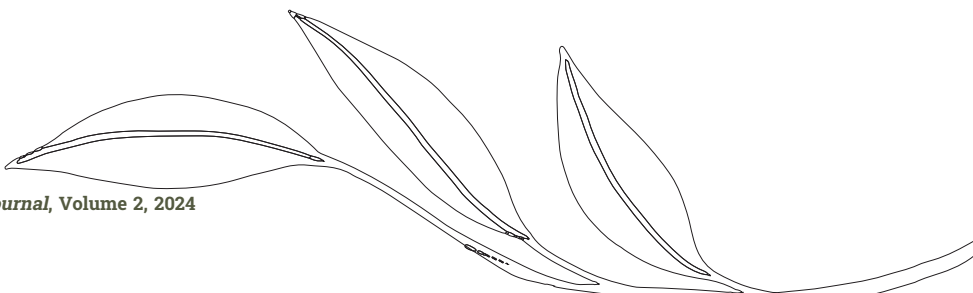



**Figure 1:** Scoping review search and study inclusion.



Item	Research area	Study type	KT level	KT definition	KT method	Indigeneity of authors	Community partnership
Soares, G.H. et al. 2021	Medical, Healthcare	Empirical	Component	Not stated	Push	Not stated in article	Not stated
Brown, A. et al. 2015	Medical, Healthcare	KT model	Primary focus	Not stated	Push	Not stated in article	Not stated
Bailie, R. et al. 2013	Medical, Healthcare	KT model	Component	Integrated KT	Exchange	Not stated in article	Not stated
McCoy, B.F. 2011	N/A	Artwork	Example	Not stated	Push	Aboriginal	Not stated
Fenwick, T.E. & Farrell, L.E. 2011	Environmental	Case study	Primary focus	Storytelling	Exchange	Non-Indigenous	Stated
Laird, P. et al. 2021a	Medical, Healthcare	KT model	Primary focus	Canadian Institute of Health Research; Integrated KT	Exchange	Both Indigenous and non-Indigenous	Stated
Carter, J.L. & Hill, G.J.E. 2007	Environmental	Case study	Component	Embedding traditional knowledge	Exchange	Not stated in article	Stated
Rogers, A. et al. 2019	Medical, Healthcare	Evaluation	Component	Canadian Institute of Health Research; Integrated KT	Push	Not stated in article	Not stated
Australian Indigenous HealthInfoNet & The Fred Hollows Foundation 2019	N/A	Video	Example	Not stated	Push	Not stated in article	Not stated
Brimblecombe, J. et al. 2014	Medical, Healthcare	Empirical	Component	Not stated	Exchange	Both Indigenous and non-Indigenous	Stated
Drew, N. et al. 2019	Medical, Healthcare	Case study	Primary focus	Summarising, synthesising and analysing information needed in forms used quickly and effectively	Push	Not stated in article	Not stated
Shibasaki, S. et al. 2019	Social Sciences and Humanities	Literature or scoping review	Primary focus	Canadian Institute of Health Research; Knowledge mobilisation	Push	Not stated in article	Not stated
Fischer, K. 2015	Medical, Healthcare	Report	Primary focus	Not stated	Push	Not stated in article	Stated
Wright, M., Lin, A. & O'Connell, M. 2016	Medical, Healthcare	Empirical	Component	Storytelling	Exchange	Not stated in article	Stated
Harding, T. & Oetzel, J. 2019	Medical, Healthcare	Literature or scoping review	Component	Integrated KT	Exchange	Not stated in article	Not stated
Oetzel, J. et al. 2017	Medical, Healthcare	KT model	Component	Integrated KT	Exchange	Not stated in article	Not stated
Campbell, S. et al. 2018	Medical, Healthcare	Evaluation	Component	Not stated	Push	Both Indigenous and non-Indigenous	Stated
Sultana, R. 2018	Environmental	Thesis	Component	Not stated	Push	Non-Indigenous	Stated

(Table 1 continues on next page)





Item	Research area	Study type	KT level	KT definition	KT method	Indigeneity of authors	Community partnership
(Continued from previous page)							
Aanundsen, D. et al. 2017	Medical, Healthcare	KT model	Primary focus	Translating research and information to policy and practice	Push	Not stated in article	Stated
James, D.M. 2005	Social Sciences and Humanities	Thesis	Primary focus	Performance	Exchange	Non-Indigenous	Stated
Stacey, N. et al. 2015	Environmental	Empirical	Primary focus	Not stated	Exchange	Not stated in article	Stated
Haynes, E. et al. 2016	Medical, Healthcare	Empirical	Primary focus	Canadian Institutes of Health Research	Push	Not stated in article	Not stated
The Lowitja Institute 2020	Medical, Healthcare	Report	Primary focus	Lowitja Institute.	Exchange	Not stated in article	Not stated
West, C. 1992	N/A	Artwork	Example	Performance	Push	Aboriginal	Not stated
Constable, S. et al. 2011	Medical, Healthcare	Empirical	Component	Not stated	Push	Non-Indigenous	Not stated
Woodland, S. 2019	Medical, Healthcare; Social sciences and humanities; Social justice	Case study	Primary focus	Performance	Exchange	Aboriginal and Torres Strait Islander	Stated
Davies, H.N. et al. 2020	Environmental	Case study	Primary focus	Not stated	Pull	Both Indigenous and non-Indigenous	Stated
Watkin Lui, F. 2018	N/A	Video	Example	Knowledge mobilisation	Push	Not stated in article	Stated
Bovill, M. et al. 2019	Medical, Healthcare	Literature or scoping review	Component	Not stated	Push	Not stated in article	Not stated
Watego, C. 2019	N/A	Video	Example	Not stated	Pull	Aboriginal and Torres Strait Islander	Stated
Sweet, M. et al. 2017	Media and communications	Case study	Component	Not stated	Push	Both Indigenous and non-Indigenous	Not stated
<a href="#">Tjulyata, T. 2003</a>	N/A	Artwork	Example	Performance	Push	Aboriginal	Not stated
Williams, M. 2021a	Medical, Healthcare; Social sciences and humanities	Report	Primary focus	Lowitja Institute	Pull	Aboriginal and Torres Strait Islander	Not stated
Williams, M. 2021b	Medical, Healthcare	Case study	Primary focus	Embedding traditional knowledge	Push	Aboriginal and Torres Strait Islander	Stated
Laird, P. et al. 2020	Medical, Healthcare	Empirical	Primary focus	Translating research and information to policy and practice	Exchange	Not stated in article	Not stated
Laird, P. et al. 2021b	Medical, Healthcare	Empirical	Component	Not stated	Exchange	Indigenous and non-Indigenous	Stated
<a href="#">Radford, K. et al. 2019</a>	Medical, Healthcare	Report	Component	Not stated	Push	Not stated in article	Stated
Jackson, R. 2001	N/A	Artwork	Example	Performance	Push	Aboriginal	Not stated
Guugu Yimithir people 2010	N/A	Website	Example	Storytelling	Push	Not stated in article	Stated
Roe, Y. 2019	Medical, Healthcare	Case study	Component	Embedding traditional knowledge	Exchange	Aboriginal	Stated

(Table 1 continues on next page)



Item	Research area	Study type	KT level	KT definition	KT method	Indigeneity of authors	Community partnership
(Continued from previous page)							
Jarvis, D. et al. 2021	Environmental	Empirical	Primary focus	Translating between Indigenous and Western knowledges.	Exchange	Not stated in article	Stated
Garnett, S.T. et al. 2009	Environmental	Opinion/commentary	Component	Not stated	Exchange	Not stated in article	Not stated
Shibasaki, S. et al. 2016	Medical, Healthcare	Evaluation	Primary focus	Canadian Institute of Health Research	Exchange	Not stated in article	Not stated
The Lowitja Institute 2017	Social sciences and humanities	Case study	Component	Not stated	Exchange	Not stated in article	Stated
Muecke, S. & Eadie, J. 2020	Education	Case study	Component	Not stated	Exchange	Not stated in article	Not stated
Smith, L. 2018	Medical, Healthcare	Opinion/commentary	Primary focus	Translating research and information to policy and practice	Exchange	Aboriginal	Stated
Harvey, M. 2018	Media and communications	Case study	Primary focus	Canadian Institute of Health Research	Exchange	Torres Strait Islander	Stated

**Table 1: Overview of data extracted from included items (n = 47)**

as medical and healthcare, their sub-areas were charted. Common medical and healthcare sub-areas were lung-related articles (e.g. tobacco, respiratory); population health articles (e.g. cardiovascular care, mental health); optometry; and antenatal health. Additional charted research areas were environmental, agricultural and physical sciences (n = 7, 15%); media and communications (n = 2, 4%); and education (n = 1, 2%).

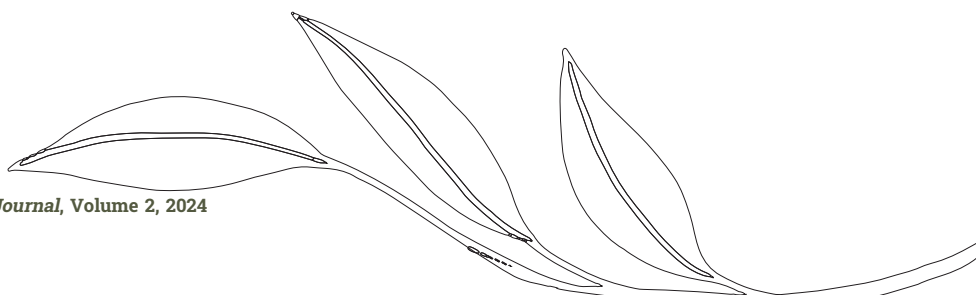
### Synthesis of results

Most items (n = 35, 75%) did not state any theory. There was an array of KT-specific theories cited, including collaborative integrated KT, knowledge exchange framework, adapted equity-oriented KT framework and the Lowitja Institute Knowledge Translation to Research Impact for Empowerment Approach. Nineteen items (40%) did not state a definition of KT. The most cited KT definition was the

Canadian Institutes of Health Research definition (n=6), who define KT as:

*a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system (Canadian Institutes of Health Research 2016).*

Also common were variations of ‘integrated knowledge translation’ (n = 5), including two items defining KT as both integrated knowledge translation and using the Canadian Institutes of Health Research definition. Additional definitions of KT were about translations through performance (n = 5), storytelling (n = 3), translating research/information to policy/practice (n = 3) and embedding traditional knowledge



(n = 3). Less common definitions were about mobilising knowledge (n = 2), translating between Indigenous and Western knowledge (n = 1) and synthesising information in ways that readers can use it effectively (n = 1). Finally, two items by the Lowitja Institute cited the Lowitja Institute definition of KT.

Of the 47 included items, 20 were categorised as having KT as a primary focus of the work, and 19 had KT as a component of the work. There were eight items categorised as examples of KT, which included artworks, artefacts, videos and a website. The number of items with KT as a primary focus of the work or with KT as a component of the work was similar over time (Table 2). Of the 19 items that had KT as a component of the research, most did not define KT (n = 12), while the most common definition cited was integrated knowledge translation (n = 4). Of the 20 items that had KT as the primary focus of the research, four did not define KT, while the most cited definition was from the Canadian Institutes of Health Research (n = 5). Due to the types of items categorised as examples of KT, most did not have a KT definition.

In this scoping review, 22 items used exchange methods, 22 used push methods and three used pull methods. Almost all KT examples were categorised as

push methods (seven of eight items), which is aligned with cultural ways of translating knowledge because Aboriginal and Torres Strait Islander knowledge holders determine what knowledge needs to be shared with whom, and how and when this knowledge is shared (Jarvis et al. 2021). The KT mechanisms ranged from academic outputs (e.g. publications, information packages) to cultural forms of KT (e.g. ceremony, dance, community days). The KT mechanisms common across all KT methods were dance, information packages, policy/guideline changes, posters, storytelling, videos, workshops and yarning. Figure 2 shows the range of KT mechanisms across the KT method.

In over half of the included items, the Indigeneity of authors was not stated (n = 26, 55%). Of those items where the Indigeneity of authors was disclosed, six were authored by Aboriginal people only; six were authored by Indigenous and non-Indigenous authors; four were authored by Aboriginal and Torres Strait Islander authors; four were authored by all non-Indigenous people; and one was authored by a Torres Strait Islander author.

Over time, more KT items are being published overall, and there is a slight trend towards items that are

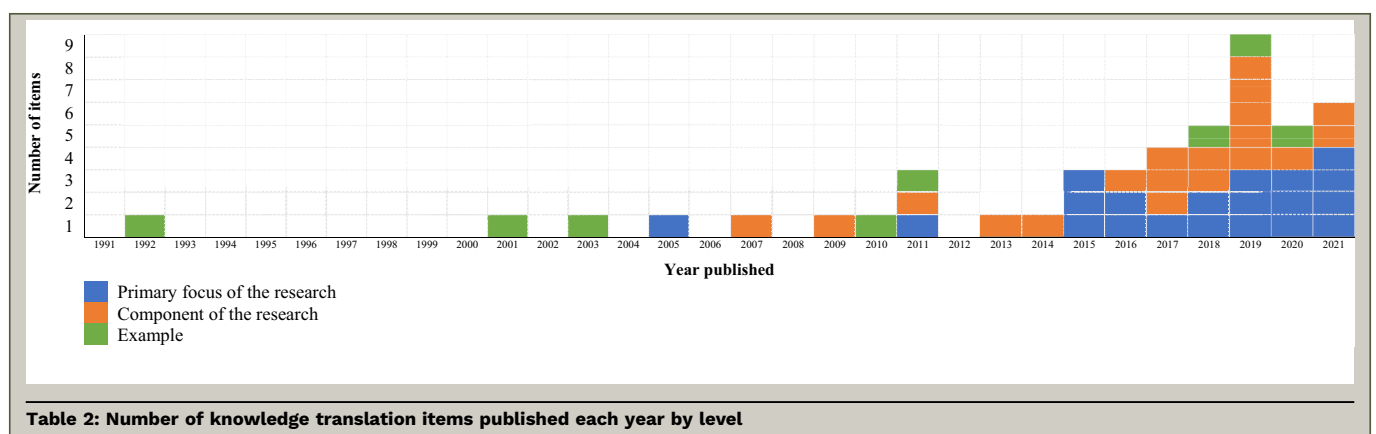
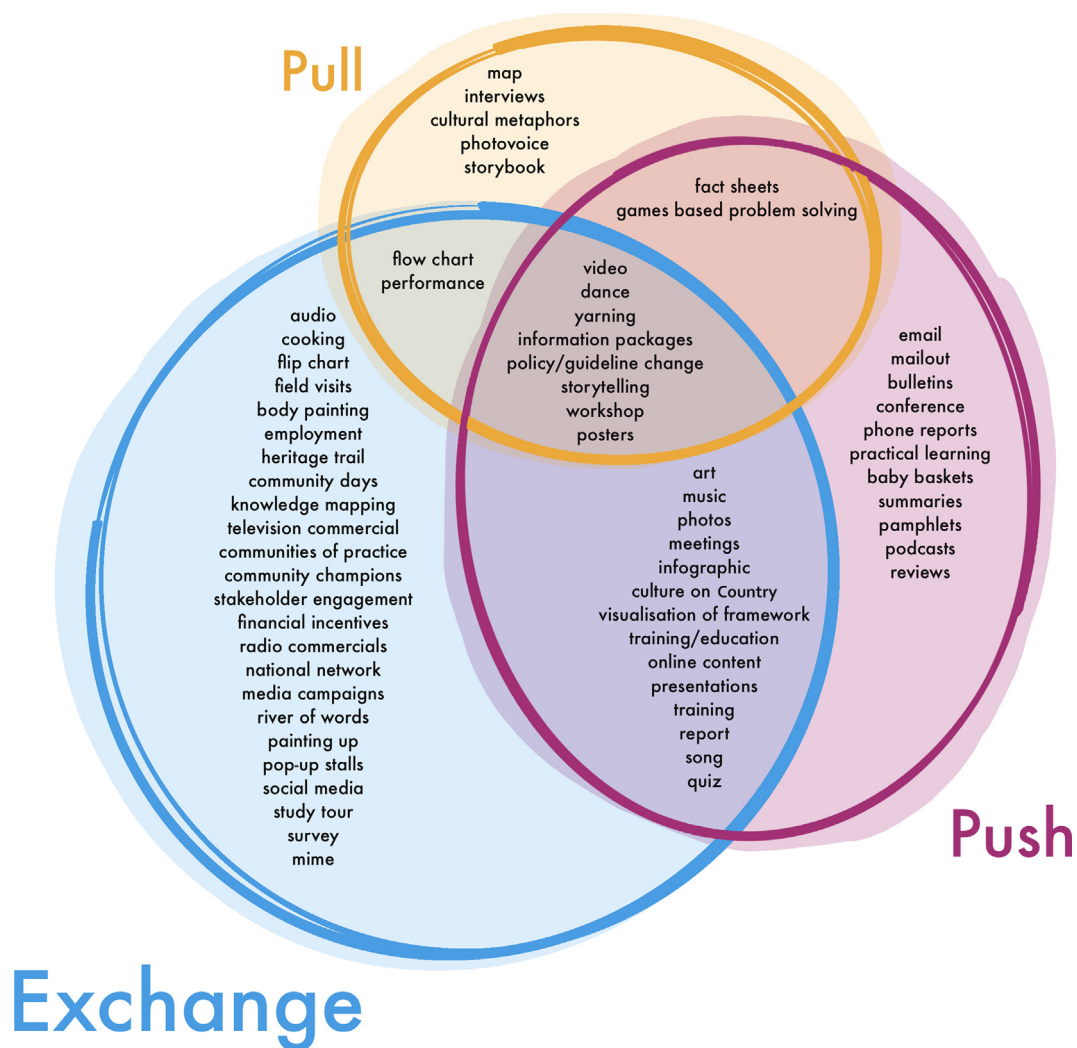


Table 2: Number of knowledge translation items published each year by level



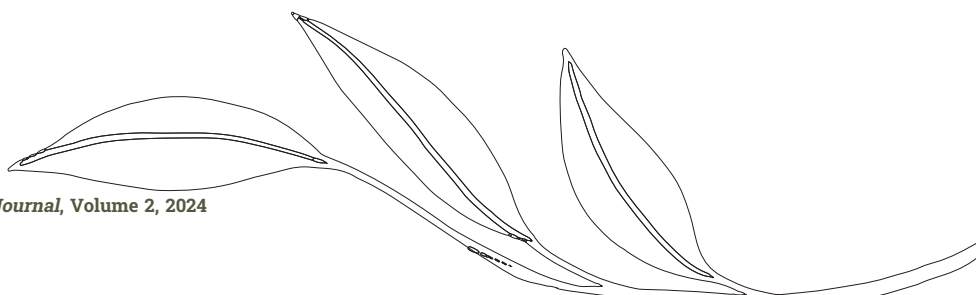
**Figure 2:** Knowledge translation mechanisms used across exchange, push and pull knowledge translation method types.

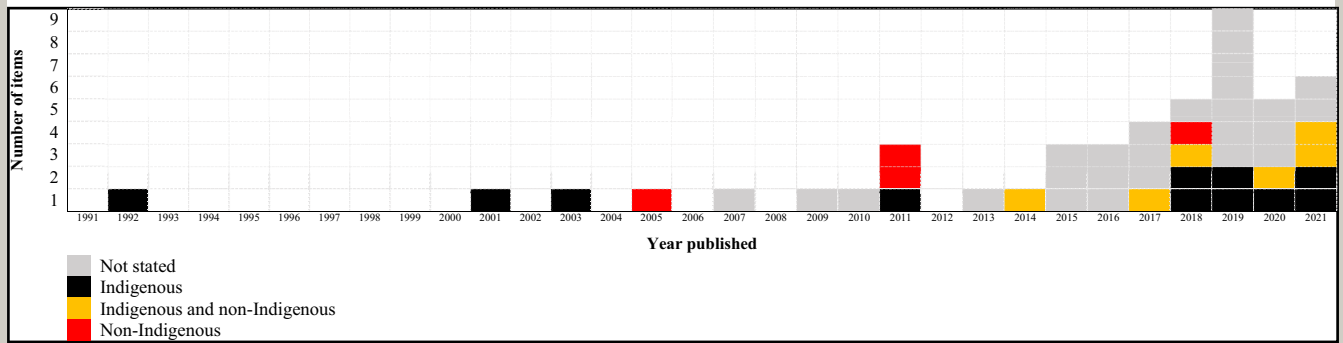
authored by both Indigenous and non-Indigenous peoples, and to less items authored solely by non-Indigenous people. However, most items published in the last 10 years have not disclosed the Indigeneity of authors (23 of 37 items; [Table 3](#)). Half of all items (n = 24, 51%) stated that they had an Aboriginal and/or Torres Strait Islander community partnership, including governance committees, Elders groups, senior mentor groups, Land Councils and Aboriginal community-controlled health organisations who

provided oversight to the research. In the last 10 years, over half of all items reported an Aboriginal and Torres Strait Islander community partnership in their research (20 of 37 items; [Table 4](#)).

### Discussion

Indigenous peoples have been sharing, transferring, translating and exchanging knowledge within and between communities for thousands of years ([Shibasaki et al. 2019](#)). Knowledge translation has

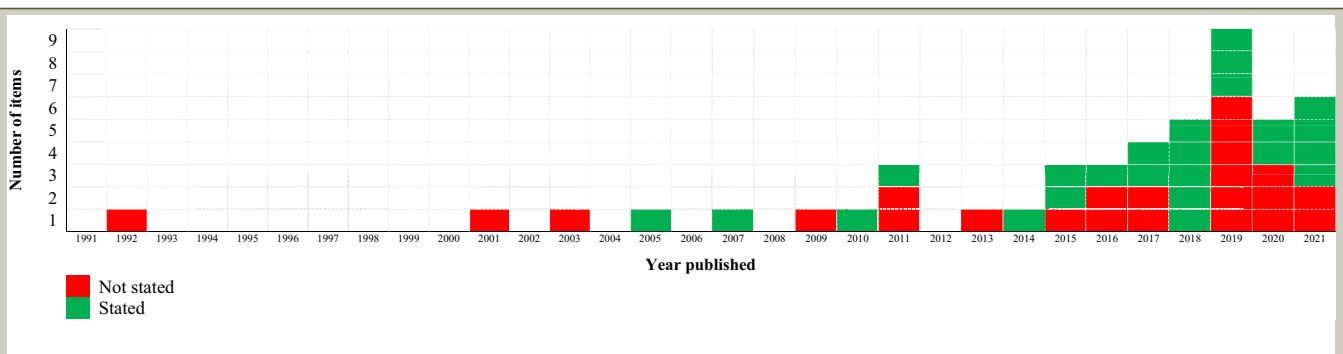




**Table 3: Number of items published each year by author Indigeneity**

always been a core component of Indigenous cultures and there are increasing calls to leverage off this strong base to incorporate KT in Indigenous research to improve research processes and outcomes (Croakey Professional Services 2021; Morton Ninomiya et al. 2022; Smylie et al. 2014). Knowledge translation practices in Indigenous research are often not informed by and do not prioritise Indigenous peoples’ knowledge systems or ways of developing, sharing and applying knowledge, resulting in inappropriate KT practices in research. This scoping review reported on KT definitions, methods, mechanisms and practices in Aboriginal and Torres Strait Islander research contexts in Australia. The

findings can strengthen the evidence base to move towards research that is appropriate, builds on Indigenous ways of sharing knowledge, centres Indigenous ways of knowing, being and doing, and moves towards the use of Indigenous KT practices. Indigenous KT is needed in research to ensure that research agendas, priorities, methods and methodologies are identified and driven by Aboriginal and Torres Strait Islander peoples themselves (Croakey Professional Services 2021), as this contributes to self-determination of Aboriginal and Torres Strait Islander peoples and leads to more impactful research and real changes at the community level.



**Table 4: Number of items who stated they had Aboriginal and Torres Strait Islander community partnership in the research, presented by publication year**





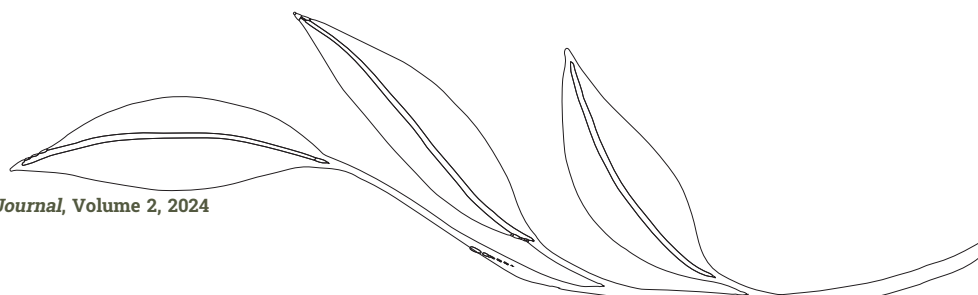
This scoping review initially identified 330 unique items that outlined KT in Aboriginal and Torres Strait Islander research contexts. Through both screening rounds, items were often removed as they had a KT search term in their abstract or list of keywords but did not discuss KT further in the body of the paper. This phenomenon of items using KT terms without engaging with the concept in the body of work was discussed with Thiitu Tharrmay. Members suggested that researchers may be saying in their work that they will do KT without ever actually doing so, or that researchers may be doing KT without reporting on it. This may also be because researchers want to engage with KT, but due to the limited evidence and literature on how to enact these processes, they are unable to do so.

A widely cited definition of KT, and the most cited definition in the current scoping review (n = 6) is from the Canadian Institutes of Health Research ([Canadian Institutes of Health Research 2016](#)). This definition is targeted to the general Canadian population, which does not consider the context of Indigenous research in Australia, the systematic exclusion of Aboriginal and Torres Strait Islander peoples from the academy, Aboriginal and Torres Strait Islander ways of knowing, being and doing, or Aboriginal and Torres Strait Islander ways of translating knowledge. Most items in this scoping review either did not define KT or use an inappropriate definition for research in this context.

Eight examples of KT (two paintings, two artefacts, three videos and one website) were found in the grey literature search. One of these was *Art into Health: Puntu Palyarrikuwanpa (Aboriginal Men Becoming Well)* ([McCoy 2011](#)), a compilation of 15 artworks from Aboriginal men who live in the Kutjungka region, the semi-desert land south of Halls Creek in Western Australia. The artworks in this compilation themselves

are a form of KT, and some artworks depict how knowledge is translated through generations (e.g. their sons passing on knowledge after them). Another example, *Piti (three editions)* ([TJulyata 2003](#)), included three Piti (carved wooden bowls), which are used in the *Seven Sisters* story when the sisters are gathering food. Piti are considered KT examples because they are used to pass on knowledge about the *Seven Sisters* story to the viewer. Another KT example is the *Sharing the Wisdom of Our Elders Final Report* ([Radford et al. 2019](#)), which discusses five themes of primary importance to Elders for growing old well: Culture, Sacred Grounds, Spirituality, Dreamtime and Sharing the Wisdom of our Elders. This report describes the cultural importance of transferring knowledge from Elders onto the next generation, pushing from generation to generation in one direction. These examples of KT are ‘push’ methods, as they involve the knowledge holder sharing the knowledge they have decided to share. These are aligned with cultural ways of sharing knowledge, as the Aboriginal and Torres Strait Islander knowledge holder has decided what knowledge can be shared, how it can be shared and who it can be shared with. The knowledge user does not determine what knowledge they want to receive but are instead given the knowledge, as determined by the Aboriginal and Torres Strait Islander knowledge holder. Therefore, these examples are both push methods and cultural examples of KT, as knowledge is pushed from one place to another – from artists to viewers, from cultural knowledge holders to those who are allowed to access that knowledge, or from Elders to young people – in ways that maintain strong cultural values and protocols for knowledge sharing.

This review was expecting to return more examples of KT. A limitation of searching for KT examples through search terms in the search engines is that non-written items must be tagged with KT search terms to have





been picked up in this review. It is believed that there are more KT examples in these search engines that were not picked up in this scoping review because they were not tagged as such. Additionally, some search engines, including the Trove database, had not completed tagging items in their archives, so KT examples may exist in these archives without having been picked up in this scoping review. In the future, as more non-written KT examples are appropriately tagged with KT terms, the number of KT examples will grow.

Various mechanisms that can be used to translate knowledge were identified in this scoping review (Figure 2). Some mechanisms were reported on across all push, pull and exchange KT methods (e.g. videos, dance, yarning, workshops and information packages), while other mechanisms appeared to be method-specific. However, not all KT mechanisms that exist were identified in this scoping review, and a KT mechanism presented only against one KT method does not mean that this mechanism can *only* be used with that method. The mechanisms presented in Figure 2 may be used as a starting point for researchers and knowledge users working together in research to determine what may be appropriate for their specific research project.

Few items in this scoping review contained information about Indigeneity of authors, or how they collaborated with the Aboriginal and Torres Strait Islander communities who participated in the research. The Indigeneity of authors was not stated in 26 of the included items. Following advice from Thiitu Tharrmay, it was charted whether items had an Aboriginal and Torres Strait Islander governance committee or other community mechanisms to provide Aboriginal and Torres Strait Islander guidance to the research. Twelve items used forms of

participatory action research; however, half of all items did not report having Aboriginal and Torres Strait Islander partnerships providing oversight for their research. In many of those that did report some Aboriginal and Torres Strait Islander partnership (e.g. from governance committees, Elders groups, senior mentor groups, Land Councils, or Aboriginal community-controlled health organisations), the nature of this partnership, including where the power sits or who makes the final decisions, was not detailed.

Indigenous and non-Indigenous scholars are increasingly calling for researchers in Indigenous research to be 'upfront and transparent about their Indigenous or non-Indigenous identity' (Morton Ninomiya et al. 2022, p. 3). While reporting the Indigeneity of authors is an important first step in ethical Indigenous research, this is not enough. Authors also need to detail Aboriginal and Torres Strait Islander engagement, involvement and leadership in the research (Maddox et al. 2023). The current authors and Thiitu Tharrmay echo these calls. Academic journals must make it compulsory for authors who are publishing in Indigenous research to disclose their Indigeneity. Academic journals must also ensure that Indigenous research includes Indigenous research governance and decision-making. Indigenous leadership and Indigenous governance go together for good research practice, and both inform effective Indigenous KT. Practicing relationality means detailing relational roles, community accountability and responsibilities; and acknowledging connections, biases and worldviews (Maddox et al. 2023). Including Indigeneity of authors and detailing governance committees or groups in research publications can help move Indigenous research into a field where Indigenous protocols and relationality are central and move away from Euro-Western-centric values that dominate research.





## Strengths and limitations

A strength of this study is that all stages of the research – including the inception, development, data extraction, interpretation and conclusions – were led by Aboriginal and Torres Strait Islander peoples. This study also had strong Indigenous governance through Thiitu Tharrmay, who were involved in all stages and provided valuable feedback, critique and context to the research approach and conclusions made, which have been incorporated throughout this paper. Indigenous research must be Indigenous designed, led, governed and follow IDS principles (described in [Supplementary File S1](#)).

This scoping review used the search terms ‘knowledge translation’, ‘knowledge exchange’, ‘knowledge transfer’ and ‘knowledge mobilisation’ as they are commonly used in the literature. However, these search terms are academic terms, which may not reflect the language used by Aboriginal and Torres Strait Islander peoples or communities. These search terms were discussed with Thiitu Tharrmay and while it is recognised that the search may have been limited by these search terms, Thiitu Tharrmay did not have any additional search terms to use and stated that given the scoping review is an academic exercise, using academic search terms was appropriate.

The grey literature search predominately focused on health search engines, which may have limited grey literature in other research fields. However, the authors are unaware of any other grey literature search engines specific to Aboriginal and Torres Strait Islander peoples that are outside the health field. There were also issues encountered when searching in the Trove database; where, even when using the advanced search query functions, items that did not meet the search criteria were incorrectly returned. Of the 167 items returned, most items that

were removed during first round screening were incorrectly returned from the database, and 30 items made it through to second round screening. This resulted in an increase in hand searching during first round screening, and many have impacted the sensitivity of results from the Trove database ([Supplementary File S3](#)).

## Conclusions

Aboriginal and Torres Strait Islander peoples have always created, generated, shared, translated and used knowledge within and between communities. KT tools (i.e. definitions, methods and practices) that build off these strong foundations and recognise the systematic exclusion of Aboriginal and Torres Strait Islander peoples from the academy and the research process are needed in Aboriginal and Torres Strait Islander research contexts in Australia. This will help researchers effectively engage with KT throughout the research process, so their work can create meaningful and impactful changes for Aboriginal and Torres Strait Islander communities.

## Author Contributions

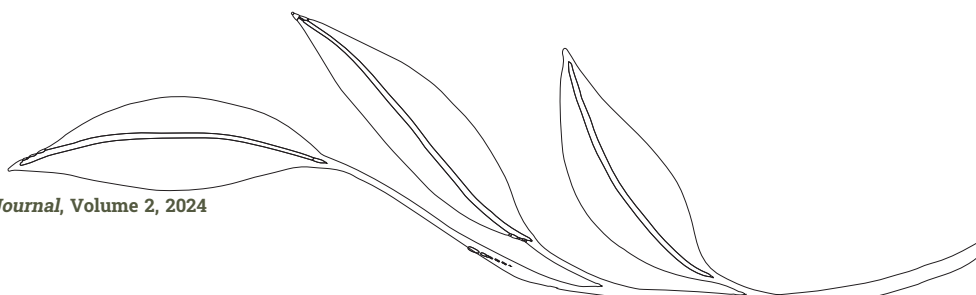
M-MB and RL conceptualised this work. M-MB, SB, FWL, and RL collected, screened and extracted the data. M-MB produced the initial draft of the manuscript. All authors were involved in interpreting results and critically revising the manuscript for important intellectual and cultural content. All authors have read and agreed to the published version of the manuscript.

## Competing interests

None declared.

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