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Title Page

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Exploring the knowledge translation of domestic violence research: A literature review

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Title

Exploring the knowledge translation of domestic violence research: A literature review

Abstract

There is growing recognition of the links between knowledge translation, policy and practice, particularly in the domestic violence research area. A literature review applying a systematic approach with a realist lens was the preferred methodology. The review answered the following question: What are the mechanisms of change in research networks which 'work' to support knowledge translation? A search of eight electronic databases for articles published between 1960 and 2018, was completed, with 2999 records retrieved, 2869 records excluded, and 130 full-text articles screened for final inclusion in the review. The inclusion criteria were purposefully broad, including any study design or data source (including grey literature) with a focus on domestic violence knowledge translation. The analysis of included studies using a realist lens identified the mechanisms of change to support knowledge translation. A disaggregation of the included studies identified five theories focused on the following outcomes: 1) develop key messages, 2) flexible evidence use, 3) strengthen partnerships, 4) capacity building and 5) research utilisation. This review adds to our understanding of knowledge translation of domestic violence research. The mechanisms of change identified may support knowledge translation of research networks. Further research will focus on exploring the potential application of these program theories with a research network.

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Keywords

Literature Review, Knowledge Translation, Domestic Violence, Family Violence, Realist Informed

What is known about this topic

- Despite efforts, the gap between research and its knowledge translation remains.
- Domestic violence research is increasing in volume.
- There are many competing approaches to knowledge translation.

What this paper adds

- A realist informed review of the knowledge translation literature specifically for domestic violence research.
- Insights into knowledge translation from a realist informed perspective.
- The identification of potential 'mechanisms of change' to support knowledge translation of research networks.

Introduction

Over the past decade, there has been considerable growth in knowledge translation research, yet there remains a 'knowledge gap' when applying this knowledge to policy (Fafard & Hoffman, 2018) and practice (Graham et al., 2006; Reid et al., 2017). Further, despite the rapid increase in domestic violence research over the past decade, there remains a dearth of studies evaluating knowledge translation activities, suggesting an urgent need to maximise the knowledge translation capacity of domestic violence research.

Many different terms associated with knowledge translation are used interchangeably such as 'knowledge translation', 'knowledge-to-action', 'knowledge mobilisation' or 'translational research' (Graham, 2013). In Australia, the term 'knowledge translation' is often (but not always) used, whereas in the UK the term 'knowledge mobilisation' is more common. In Canada where the term originated, the term 'knowledge translation' is used but equally 'knowledge to action' and more recently 'integrated knowledge translation' (Graham et al., 2014;

Straus et al., 2009) are common. These terms are not necessarily interchangeable, and for our purpose, we cite the Canadian Institutes of Health Research definition. It states that knowledge translation is a 'complex process between researchers and knowledge users' (Graham & Tetroe, 2009) and is 'a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge...' (Canadian Institutes of Health Research, n.d.).

Several systematic reviews of knowledge translation have had mixed findings. LaRocca et al. (2012) reviewed knowledge translation strategies in public health and found no single knowledge translation strategy effective in all settings. A systematic review by Yost et al. (2015) of interventions for promoting evidence-informed decision making amongst nurses found limitations with the conclusions due to the variability of interventions, outcomes and weaknesses of the included studies. Tricco et al. (2016) found few studies focused on the sustainability of interventions. An overview of systematic reviews by Chapman et al. (2020) identified forty-four reviews that describe effective strategies to disseminate health knowledge; however, they found barriers & facilitators of knowledge translation need addressing to ensure uptake.

The term 'knowledge user' is defined as those who would make decisions or take actions based on study findings (e.g. policymakers, practitioners, health care professionals, researchers) (Graham et al., 2019). Whereas 'end-user' (e.g. lived experience participants, carers) includes those with interest in the research, but who would not themselves directly act on the findings (Graham et al., 2019). For this review, the term 'end-users' encompasses both groups.

Similarly, 'domestic violence' may be understood differently by different groups (Clarke & Wydall, 2015; Geffner, 2016; Hawley et al., 2018; Murray & Powell, 2009). For the current study, domestic violence (DV) can be understood as violence between family members, typically where the perpetrator exercises power and control over another person (Australian Institute of Health and Welfare, 2019).

Although there is extensive research on knowledge translation, there are few domestic violence knowledge translation reviews. A notable exception is the MacGregor et al. (2014) review of specific strategies to promote domestic violence knowledge translation. However, the lack of consistently reported data made it difficult for the reviewers to describe conclusions. The authors of this study provide a guide for the preparation and planning of knowledge translation for interventions. Other reviews include one by Turner et al. (2017), who reviewed interventions aimed at improving practice with domestic violence survivors and their children.

They found that critical elements of successful training included interactive discussion and booster sessions. Zaher et al. (2014) also reviewed the effect of domestic violence training on physician behaviour but found it challenging to identify the most effective education strategy.

A growing body of literature has investigated the role of collaborative research and knowledge translation (Metz et al., 2019) especially with vulnerable populations (Joss et al., 2016; Mulvale et al., 2019; Palmer, 2020). There are several approaches, including co-production, co-design and co-creation. What the approaches have in common is the goal of ensuring lived experience voices are part of the research which affect them. It also ensures their experiences are contributing in a meaningful way to any knowledge translation efforts (Collins et al., 2005; Valpied et al., 2014).

Consequently, a more comprehensive understanding of knowledge translation of domestic violence research is warranted. Our review answered the following question: What are the mechanisms of change in research networks which 'work' to support knowledge translation?

Methods

Setting

In Australia, the National Health Medical & Research Centre funds Centres of Research Excellence that support teams of researchers to develop capacity in clinical, population health and other areas of research. The Safer Families Centre of Research Excellence was established in 2017 with a focus on children, young people and parents to decrease the impact of domestic violence on the family. This interdisciplinary research network comprises national and international researchers from Australia, New Zealand, United Kingdom and Canada. The results of this review will support the knowledge translation of this network.

Design

A realist review is a theory-driven review (Berg & Nanavati, 2016). That is, the analysis begins with a theory as to why a program works in a particular context or setting (Berg & Nanavati, 2016; Pawson et al., 2005). Thus, a realist review is not just about the replication of outcomes, but understanding why those outcomes succeed or fail, the influences on those outcomes, and the theory of change regarding the intervention (Pawson & Tilley, 2004). It is especially well-suited to areas of complexity with variable outcomes (Berg & Nanavati, 2016; Wiese et al.,

2017), exploration of mixed data (Kastner et al., 2011), and enables in-depth analysis (Pawson et al., 2005). Realist reviews have an impact in a wide range of settings including: health (Brennan et al., 2017) community mental health (Gee et al., 2016), offender mental health (Pearson et al., 2015), domestic violence screening (O'Campo et al., 2011) and advocacy (Rivas et al., 2019). Several definitions help understand the realist review process. Context-mechanism-outcome (CMOs) configurations are the 'building blocks' of the realist approach (Papoutsi et al., 2018). Contexts (C) include the environments, conditions, and circumstances (Jagosh et al., 2014) that influence whether a program works or not (Jagosh et al., 2014; Rycroft-Malone et al., 2016). Mechanisms (M) 'are the engines of explanation' (Pawson, 2006a) that identify the elements of programs that make them work (Rycroft-Malone et al., 2016). Outcomes (O) are the consequences of the program (Centre for Development Impact, 2016; Rycroft-Malone et al., 2016). The program theory explains how the program is expected to function (Papoutsi et al., 2017; Rycroft-Malone et al., 2016). Once developed, the theory is tested for transferability to other settings (Papoutsi et al., 2017; Rycroft-Malone et al., 2016). This review used the core principles of a realist review and analysed the data with a realist lens to identify potential program theories supported by CMOs.

Process and search strategy

The process for conducting a realist informed review is as rigorous as any other systematic review (Berg & Nanavati, 2016). The search included the following databases to maximise fidelity: Medline, PsycINFO, Scopus, Family & Society Studies Worldwide, Family & Society Collection, SocINDEX with Full Text and APA-FT (Australian Public Affairs), Google, Google Scholar. Table 1 provides an example of the search string.

Table 1 Example of Medline search string

INSERT TABLE 1 ABOUT HERE

The search was limited to any English study from any year that included domestic or family violence and knowledge translation as critical concepts. Data are relevant for a realist review if it can help 'develop, corroborate, refute or refine' any aspect of program theory. It may include a 'nugget' of data from any source (e.g. grey literature). The inclusion criteria were not restricted to hierarchal evidence (e.g. randomised control trials) as is expected practice in realist reviews (Pawson et al., 2004; Wong, 2018). The full inclusion/exclusion criteria are in Table 2.

Table 2 Review inclusion/exclusion criteria

INSERT TABLE 2 ABOUT HERE

Study selection, quality and extraction

An initial screening of 2,999 abstracts resulted in the exclusion of 2,869 references with 130 full-text papers reviewed (Figure 1). All titles and abstracts were screened by the first author (JC), against Table 1 criteria, and articles included if they potentially would contribute to the development of the program theory. Of 130 studies, 27 duplicates were removed, and the remainder screened for relevance to the review question and potential contribution to the program theory. The final review included 50 studies; 53 studies were not relevant. The technical sequence of a realist review is the same as a regular review. However, criteria for inclusion, appraisal and synthesis are determined by 'theory testing potential' (Westthorp, 2019; Wong, 2018). In the first instance, the first author (JC) assessed each study for contribution, confirmed by a second reviewer (KH or CH). The included studies were subject to computer-assisted qualitative data analysis using NVivo (QSR International, 2015). Following PRISMA guidelines (Liberati et al., 2009), a flowchart of the search results is presented (Figure 1).

Synthesising evidence and drawing conclusions

The data were imported into NVivo (QSR International, 2015) and subjected to thematic analysis (Braun & Clarke, 2006) using a realist lens. Firstly, this involved reading the complete documents to become familiar with the text and establish potential codes. Secondly, it involved refining these codes to generate possible themes. Thirdly, the process involved identifying context, mechanism or outcomes known as CMO configurations. As noted by Shearn et al. (2017), the process of creating CMO configurations is not necessarily a linear relationship where 'A leads to B' but more a means to generate potential outcomes (Shearn et al., 2017). Drawing on the work of Ford & Wong (2016), we commenced with a more extensive list of outcomes and worked backwards to create program theories. The CMO configuration is the 'building block' of the program theory (Dalkin et al., 2015). Finally, we refined the theories. This refinement included prioritising CMOs (as it was not possible to add them all); a necessary component of realist review (Gilmore et al., 2019; Pawson, 2006b). The team drew on their varied disciplinary backgrounds and experience to select the final CMOs that were relevant and feasible to replicate. The development of the program theory is an ongoing

iterative process which encourages 'testing' of theory and extends beyond the end of the review (Ford et al., 2016).

Results

Characteristics of the included articles

The 50 studies represented the following countries: Canada (n=26), USA (n=12), Australia (n=7), United Kingdom (2), Spain (2) and South Africa (1). There were peer review articles (n=38), industry magazine (n=1), evaluation reports (n=13), electronic book chapters (n=1) and conference presentations (n=2). The study designs included opinion/commentary (n=12), evaluation (n=11), review (n=9), case study (n=10), cohort study (2), qualitative study (n=2), action research study (n=1), cross-sectional study (n=1), Delphi (n=1) and mixed-method study (n=1).

Figure 1 Search results

INSERT FIGURE 1 ABOUT HERE

A summary of the contribution of each study to the five program theories is provided recognising that each study could contribute to more than one program theory. Included studies incorporated a context of domestic violence knowledge translation, although cited examples were not always specific to domestic violence. Moreover, there was not a single study to support an entire program theory, but instead, multiple sources of evidence supported each program theory (Wong, 2018). A summary of the data contributing to the included studies is in Table 3.

Table 3 Summary of data contribution

INSERT TABLE 3 ABOUT HERE

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The two components, CMOs and program theory are linked (Dalkin et al., 2015). The process involved identification of the outcome, then unpacking the contributing mechanisms of change and contexts attributes for that outcome (Ford et al., 2016). Each outcome (O) is supported by context (C), and mechanism (M) attributes. The context provides the background attributes in which the mechanisms will occur, leading to a specific outcome. Where there are multiple mechanisms in play, one or more of these mechanisms will likely work together for the outcomes to occur. The number of mechanisms for each theory is a representation of the complexity of knowledge translation and domestic violence research. Each program theory is a dynamic process. We propose that the five theories may work together but what is not clear is whether one or more combinations are likely to work best.

Theory 1: When there are multiple target audiences identified (context), collaboration (mechanism) is triggered such that appropriate key messages are developed (outcome).

INSERT FIGURE 2 ABOUT HERE

Figure 2 - Theory 1

The **target audience** context may include a variety of stakeholders and end-users/knowledge-users. Several studies demonstrated engagement with multiple target audiences including domestic violence policymakers, practitioners, community elders, family & healthcare services using techniques including domestic violence conferences, workshops, forums and focus groups (Beckett et al., 2016; Campbell et al., 2011; Isobell et al., 2016; Murray, Ong, et al., 2015).

Studies suggest knowledge translation goals be developed early, in conjunction with, and appropriate for, each target audience group (Beckett et al., 2016; Jack & Tonmyr, 2008; Larrivée et al., 2012; Murray, Ong, et al., 2015; Wathen et al., 2010). The goals identified need to be adapted for each target audience, using consistent language to provide the authority required for sustainable outcomes (Jack & Tonmyr, 2008).

Collaboration refers to the relationship between researchers and end-users and is the primary mechanism for this theory. However, several supporting mechanisms may also contribute. There is a quantity of literature which describes the ingredients of successful collaboration including: that it is undertaken early and often during the research process; mutual recognition

of the issue or problem; open communication, and a commitment to the relationship (Burke et al., 2013; Campbell et al., 2011; Connolly et al., 2017; Guruge, 2016; Hegarty et al., 2017; Isobell et al., 2016; Kothari et al., 2013; Larrivéé et al., 2012; Murray, Ong, et al., 2015; Wathen & MacMillan, 2015; Yuan et al., 2016; Zahradnik et al., 2009). Of interest, was the way a DV research network could foster formal and informal collaborations with shared goals (Kothari et al., 2013; Kothari et al., 2014). Although, these rely heavily upon ongoing contact and 'communication channels' between the researchers and end-users for continuing success (Jack & Tonmyr, 2008; Kothari et al., 2014; Larrivéé et al., 2012; Yuan et al., 2016). Much of the literature on collaboration is generic, however, some examples were particular to the DV context. For example, Guruge (2016) utilised integrated knowledge translation activities as a mechanism to develop collaboration between research, policy and practice for a National Plan to address domestic violence, while Beckett (2016) embedded knowledge translation roles with a group of domestic violence agencies and researchers to promote collaboration through a 'cross-fertilisation' of ideas. Connolly (2009) took the approach a step further using established collaborations to implement a sustainable framework to improve support for women and children at risk of DV and identified particular triggers as a mechanism for sustainability. Zahradnik et al. (2009) describe obtaining 'community consent' as the first step in their ongoing community-based study.

Key messages are routinely developed by researchers to share the outcomes of their research, and it is an area well developed in the knowledge translation literature more generally. Much of the literature provides generic examples such as the dissemination of brief evidence-based, critical, tailored key messages, creating feedback loops, presenting accessible information at formal/informal meetings, education sessions, presenting at national/international conferences and publishing scientific papers (Albers et al., 2017; Beckett et al., 2016; Boyko et al., 2017; Burke et al., 2013; Connolly et al., 2017; Kothari et al., 2014; Murray, Chow, et al., 2015; Murray, Ong, et al., 2015; Nancarrow, 2015; Sibbald et al., 2017; Tarzia et al., 2016; Wathen et al., 2010). Of note is that Murray et al. (2010) found that practitioners read industry publications and attend practice-based rather than research-based conferences. However, Jack & Tonmyr (2008) emphasise the importance of a headline version, a one-sentence version, a one-paragraph version and a full-text version of the message as illustrated by their example of legislative changes concerning children's safety and family violence. Boyko (2017) recommends generating evidence-based domestic violence key messages for the broader community based on transparent messaging and previous campaigns. Wathen (2010) utilised a

'Violence Knowledge Exchange Forum' as a knowledge translation strategy and identified how challenging it was to distil complex research results into digestible key messages. Moreover, Wathen et al. (2011) found that the key message may be 'diluted' and not have the desired impact if not disseminated in an appropriate format.

Theory 2: When there are diverse populations (context), multiple knowledge translation strategies are triggered (mechanism), leading to the uptake of flexible evidence use (outcome).

INSERT FIGURE 3 ABOUT HERE

Figure 3 - Theory 2

A growing body of literature recognises the need to include a range of emerging, **diverse populations** and voices in knowledge translation. These include Aboriginal and Torres Strait Islander people (Nancarrow, 2015; Tarzia et al., 2016) and culturally and linguistically diverse populations (Connolly et al., 2017). For example, Isobell (2016) implemented participatory action research with two African communities focused on violence prevention. Zahradnik (2009) applied the process of gaining 'community consent' to engage with a Canadian Aboriginal community. The identification of children (Connolly et al., 2017; Guruge, 2016; Nancarrow, 2015; Tabibi et al., 2017), and young people/adolescents (Claussen et al., 2017; Nancarrow, 2015; Stanley & Devaney, 2017; Tabibi et al., 2017) are emerging populations for knowledge translation efforts. Tabibi (2017) included children, youth and adults in a 'community of practice' approach as part of a network for trauma and violence informed health promotion. Men as perpetrators, fathers and victims are also emerging populations which do not necessarily 'fit' with mainstream messaging and evidence (Connolly et al., 2017; Guruge, 2016; Nancarrow, 2015; Stanley & Devaney, 2017; Stith et al., 2013; Tabibi et al., 2017). The value of conducting research that is empowering to survivors is clear (Isobell et al., 2016; Murray, Ong, et al., 2015; Tarzia et al., 2016; Zahradnik et al., 2009) as is the value of including practitioners in all aspects of the research process (Isobell et al., 2016; Murray, Ong, et al., 2015; Zahradnik et al., 2009). Communities of practice have emerged as one approach for engaging domestic violence practitioners working with diverse populations (Claussen et al., 2017). LGBTQI (lesbian, gay, bisexual, transgender, queer or questioning, and intersex) (Murray, Ong, et al., 2015), and those with lived experience/survivor/voices (Hegarty et al., 2017; Murray, Ong, et al., 2015) are also emerging diverse populations.

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Several studies have recognised the value of combining activities and using **multi-layered responses/strategies** for successful knowledge translation (Goicolea et al., 2015; Guruge, 2016; Larrivéé et al., 2012; Sibbald et al., 2017; Spalding et al., 2015a; Spalding et al., 2015b; Wathen et al., 2010). The education and training of practitioners in isolation does not appear to change behaviour, although it continues to be a common approach (Larrivéé et al., 2012; Saul et al., 2008). However, the mechanism of change develops through a combination and use of multi-layered responses which may include training but engages with other strategies as well.

Several examples emerged from within the DV context. Guruge (2016) found a range of activities that focused on 'multi-level, multisectoral responses' working together, which resulted in a consensus to strengthen the health sector response to domestic violence. A further example transpired with primary health care providers who recognised the value of 'team learning' (Goicolea et al., 2015, p2; Goicolea et al., 2013, p2). Wathen et al. (2015) identified the 3Ts; 'talk, trust and time', were found to operate together to maintain and build partnerships for a group of stakeholders working for the 'Violence Against Women' research program.

More generally, the literature provided a wide range of strategies used in conjunction with each other to strengthen knowledge translation. Examples include professional development for practitioners, education sessions, education summaries, group discussions, interactive learning, deliberative dialogues, using knowledge brokers and opinion leaders, audits, feedback, electronic reminders, clinical decision-making support, clinical practice guidelines, team learning, formal & informal partnerships and proactive media strategies (Beckett et al., 2016; Boyko et al., 2016; Boyko et al., 2017; Claussen et al., 2017; Goicolea et al., 2015; Goicolea et al., 2013; Guruge, 2016; Isobell et al., 2016; Kothari et al., 2016; Larrivéé et al., 2012; Spalding et al., 2015a; Spalding et al., 2015b). Of these, several have generated more extensive evidence through engagement with opinion leaders, interactive meetings, audits reminders and prompts (Spalding et al., 2015a).

Flexible evidence use describes the need for researchers to produce evidence that communicates to end-users. An example lies with a DV screening trial (PreVAiL, 2016) which indicated that evidence gets used in numerous ways and not always as anticipated, for instance, cited incorrectly in other studies. The team introduced the concept of 'malleability of evidence' concerning the intended and unintended use of evidence (Wathen et al., 2013, p11).

Several studies suggest that if the evidence is not accessible, it may not influence policymakers and practitioners (Breckenridge & Hamer, 2014; Decker et al., 2012; Jack, 2006; PreVAiL, 2016; Saul et al., 2008; Sibbald et al., 2017; Spalding et al., 2015b; Sprague et al., 2016; Wathen et al., 2013; Wathen et al., 2011). Using a range of evidence and dissemination strategies (e.g. pilot projects, opinions, reviews, quantitative/qualitative), in accessible and appropriate formats will mitigate this. Evidence provided in real-time, which demonstrate value for money with measurable outcomes will encourage use and adaptation for different organisational settings (Kothari et al., 2014; Murray & Smith, 2009; Nancarrow, 2015; Saul et al., 2008; Stanley & Devaney, 2017; Tabibi et al., 2017; Tarzia et al., 2016; Wathen et al., 2016; Wathen et al., 2013; Wathen & MacMillan, 2015).

Theory 3: When there is multi-directional knowledge exchange (context), then there is a shared understanding of common language (mechanism) which results in strong partnerships (outcomes).

INSERT FIGURE 4 ABOUT HERE

Figure 4 - Theory 3

Knowledge direction refers to the dissemination of knowledge translation between researchers and end-users. Generally, one-way knowledge translation (researcher to end-user) is less effective than multi-directional translation, even though the latter will take time to develop (Heyman & Slep, 2009; Jack & Tonmyr, 2008; Kothari et al., 2014), (Breckenridge & Hamer, 2014) and is not automatic (Larrivéé et al., 2012).

The evidence suggests multi-directional knowledge translation is more successful when embedded (through all stages of the research process), community-generated, and uses both clinical and empirical knowledge (Isobell et al., 2016; Larrivéé et al., 2012; Sibbald et al., 2017). Beckett (2016) notes that 'relational and organisational knowledge has the most currency'. Several studies (Decker et al., 2012; Isobell et al., 2016; Kothari et al., 2014) have used topic-focused domestic violence forums, symposiums and face-to-face meetings to facilitate multiple exchanges and directions of knowledge. Facilitators of the dissemination process include participatory strategies, face-to-face contacts, education sessions, community networks, communities of practice, knowledge funnels, feedback loops and evaluation (Burke et al., 2013; Claussen et al., 2017; Decker et al., 2012; Isobell et al., 2016; Kothari et al., 2013).

Although different groups may be working together with a shared interest or content area (e.g. domestic violence), they may not be speaking a **common language** (Kothari et al., 2016; Kothari et al., 2014). It was found that even multidisciplinary groups (e.g. nurses, social workers) maybe be working collaboratively within the same content area (e.g. domestic violence), but not be using consistent language (Kothari et al., 2016; Kothari et al., 2014). An absence of everyday language, different language or frame of reference proves to be a barrier to communication between researchers and end-users (Jack & Tonmyr, 2008; Kothari et al., 2014; Murray, Ong, et al., 2015; Saul et al., 2008). This language barrier has prompted Murray et al. (2015) to recommend that researchers spend time observing practitioners in their work context to support the development of a common language. Furthermore, researchers work with particular models (e.g. community of practice, community-based participatory research, participatory action research) that promote common language (Burke et al., 2013; Claussen et al., 2017; Connolly et al., 2017; Kothari et al., 2016; Saul et al., 2008; Wathen et al., 2010) and potentially more action-orientated language, public communication, clear expectations and consistent language (Burke et al., 2013; Jack & Tonmyr, 2008). Burke (2013) suggests that rewriting terms can also help promote common language, as an example, capacity building reinterpreted as 'learn, grow, share'. While Connolly et al. (2017) encourage the use of 'practice trigger' questions that 'encourage exploration of issues' to develop a common language between agencies for the protection and safety of children.

Strong and equal partnerships developed through mutual trust, respect and transparent process (Campbell et al., 2011; Wathen et al., 2016; Wathen & MacMillan, 2015; Zahradnik et al., 2009) take time to develop (Wathen et al., 2016) to be mutually beneficial (Tarzia et al., 2016). There are several DV examples of this in practice including researchers and health services workers from a range of DV services, convened using principles of community-based participatory research, to develop strong partnerships (Burke et al., 2013). Guruge (2016) provides examples of using knowledge translation activities to strengthen existing partnerships to promote evidence uptake of domestic violence-related research between research, practice and policy stakeholders. However, the history of feminist practice in the DV arena highlights the importance of acknowledging and seeking to minimise the power differential between researchers and end-users (Isobell et al., 2016). Campbell (2011) identified that the strong partnership between First Nations, Health Canada and the University of Saskatchewan was a useful method for pooling expertise and experiences and supporting knowledge translation. A collation of other strategies to reduce power imbalances includes well-defined leadership,

contracts, memoranda of understanding, conflict resolution plans, communication plans, defining roles and responsibilities, progress updates and other face-to-face contact opportunities (Burke et al., 2013; Campbell et al., 2011; Guruge, 2016; Kothari et al., 2016; Kothari et al., 2013; Kothari et al., 2014; Murray, Ong, et al., 2015; PreVAiL, 2016; Tabibi et al., 2017; Wathen et al., 2016; Yuan et al., 2016).

Theory 4: Capacity building (outcome) occurs when practitioner knowledge is valued (context), which in turn triggers the use of a knowledge translation framework (mechanism).

INSERT FIGURE 5 ABOUT HERE

Figure 5 - Theory 4

Practitioner knowledge provides an essential context for successful knowledge translation. Several studies exploring practitioner knowledge have identified the value of experiential and clinical expertise that practitioners bring to the research process (Breckenridge & Hamer, 2014; Claussen et al., 2017; Hanson et al., 2016; Murray, Ong, et al., 2015; Murray & Smith, 2009; Sibbald et al., 2017; Wells et al., 2015). Practitioners who conduct research concurrently with practice-based work provide a significant contribution in regards to good practice outcomes (Campbell et al., 2011; Claussen et al., 2017; Murray & Smith, 2009), however, in return practitioners require time to embed change into their practice (Wells et al., 2015). Barriers to engaging practitioners in the research included a perceived lack of relevance, firmly entrenched practice beliefs, which contradict professional experience. Other barriers include lack of time, resources, management support with low rewards for engagement with knowledge translation (Larrivée et al., 2012; Murray, Ong, et al., 2015; Sibbald et al., 2017; Spalding et al., 2015b; Wathen & MacMillan, 2015; Wathen et al., 2011). Another issue is the continued use of didactic approaches, despite the suggested evidence that this is unlikely to change practice behaviour (Saul et al., 2008). Researchers need to be mindful of the context and consider the capacity of practitioners to implement new knowledge in a busy practice setting while supporting them to do so (Sibbald et al., 2017). Murray et al. (2010) found that domestic violence practitioner expert panels were one way to engage practitioners. Goicolea et al. (2015) found committed domestic violence practitioners implementing an intervention, even if not implemented fully, provided legitimacy for them to continue to contribute to good practice and outcomes.

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Much of the literature on **frameworks** is descriptive and not specific to DV. There are well over sixty different models represented in the literature (Albers et al., 2017). The action of implementing the framework is one mechanism, but it is not automatic (Larrivéé et al., 2012). Frameworks offer potential lenses for different settings (e.g. gender-inclusive, strength-based, trauma-informed, participatory action), and they all need to be applied ethically (Wathen et al., 2011). The mechanism draws from the understanding, implementation and consistency of the embedded framework. Several frameworks identified in the literature included integrated knowledge translation (Kothari et al., 2016; Kothari et al., 2013; Kothari et al., 2014; Zahradnik et al., 2009), a gender-inclusive framework (Dixon & Graham-Kevan, 2011), a strength-based framework (Howell et al., 2017), a trauma-informed framework (Hegarty et al., 2017), the diffusion of innovation theory (Campbell et al., 2011; Decker et al., 2012; Murray, Ong, et al., 2015), community-based participatory research (Burke et al., 2013; Moffitt & Fikowski, 2017; Yuan et al., 2016), a community of practice framework and participatory action research (Claussen et al., 2017; Isobell et al., 2016). Claussen et al. (2017) identified the five domains of success, including identification of the end-user group, issue, research, research-end-user relationship and dissemination activities.

Zahradnik (2009) defined dissemination success with a collaborative community that included community consent, sharing of results, tangible benefits, documented responses, future planning and lessons learned. Consensus methods can help identify priority areas for knowledge translation, especially when linked to policy impacts (Guruge, 2016). Other implementation frameworks include the transfer and exchange models: the researcher-push or dissemination model; the decision-maker or user-pull model; and the exchange or researcher-user interaction model (Jack & Tonmyr, 2008; Larrivéé et al., 2012; Spalding et al., 2015b). The evidence suggests that regardless of the chosen framework, the ability to report effectively requires further research and development as objectives are often set by external forces (e.g. funding bodies) and subject to change (e.g. policymakers) (Beckett et al., 2016; MacGregor et al., 2014).

Several studies refer to **capacity building** as an outcome that can occur between researchers and practitioners. Often uni-directional capacity building can occur between researchers and practitioners; however, capacity building can be bi- or multi-directional. Beckett et al. (2016) refer to the role of knowledge translation as being focused on collaboration between researchers and end-users and raising awareness and capacity building. Examples of capacity building activities include workshops, seminars, mentoring, online resources (Burke et al.,

2013; Campbell et al., 2011; Saul et al., 2008; Wathen & MacMillan, 2015; Zahradnik et al., 2009). Claussen et al. (2017) found that implementing a community of practice approach between local domestic violence practitioners and community enabled research findings and implementation with local communities. Sibbald (2017) found that stakeholders shared new knowledge on domestic violence with colleagues dependent upon their professional experience and their areas of interest which has a potential impact on capacity building strategies. Barriers to capacity building are present for those practitioners who are not aware of how to access training and skill development (Saul et al., 2008). The measures need to be beyond attendance, satisfaction or intervention implementation (Saul et al., 2008; Tarzia et al., 2016). For instance, Hanson (2016) suggests that domestic and family violence education in the curriculum for health care professionals is an urgent priority to promote capacity in the sector.

Theory 5: Resources (context) trigger dedicated leadership (mechanism) which results in the utilisation of evidence (outcome).

INSERT FIGURE 6 ABOUT HERE

Figure 6 - Theory 5

A lack of **dedicated resources** as a barrier to knowledge translation are well documented and include lack of time, support, and resources as well as a lack of networking opportunity and competing for priorities (Jack & Tonmyr, 2008; Murray, Ong, et al., 2015; Saul et al., 2008; Tarzia et al., 2016; Wathen et al., 2016; Yuan et al., 2016). The process of knowledge translation requires equitable dedicated resources (Murray, Ong, et al., 2015; Stanley & Devaney, 2017; Wathen et al., 2010), performance measures (Wathen & MacMillan, 2015) and not implemented as an 'add-on' at the end of the research (Saul et al., 2008). The funding requires **sufficient** reserves to cover traditional and 'hidden' costs (e.g. recruitment of researchers, survivors, retention, intervention costs, networking events, safety considerations and other research deliverables) (Murray, Ong, et al., 2015; Tabibi et al., 2017).

Evidence for **dedicated leadership** is limited, however; it takes time, effort and dedicated resources to create strong partnerships (Campbell et al., 2011; Spalding et al., 2015a; Wathen et al., 2016; Wathen & MacMillan, 2015) which also requires support from management. The decision to undertake knowledge translation activities involves an appreciation of the costs and benefits for both researchers and end-users (Campbell et al., 2011) as well as support for researchers to translate their work beyond peer-review journals (Saul et al., 2008). Claussen

(2017) found a community of practice model that included skilled facilitation and leadership were crucial to the success of the model. Thus, the mechanism consists of recognition of the role of leadership and the time, effort, understanding and appreciation of the costs and benefits that will result in actual research utilisation.

The term '**research utilisation**' is often used in a similar way to knowledge translation. Research utilisation will occur if there is a recognised need or incentive by the end-user to be involved (Jack & Tonmyr, 2008; Murray, Chow, et al., 2015; Murray, Ong, et al., 2015; Murray et al., 2010). Uptake of research relies on motivation, trust, frequency and intensity of interaction between researchers and end-users (Beckett et al., 2016; Larrivée et al., 2012; Murray et al., 2010; Wathen et al., 2011). It can also be influenced by how the research resonated with practitioners' own beliefs, values, experience and decision-making (Wathen & MacMillan, 2015); however, even though the research might be considered valuable, lack of time and resources influence uptake (Yuan et al., 2016). Research utilisation can be politically motivated and contrary to the research evidence with minimal policy impact (Sibbald et al., 2017; Wathen et al., 2013). Tabibi (2017) found that implementation of small localised projects to support trauma and violence informed approaches required ongoing resources. Wathen (2015) found that the 3Ts; 'talk, trust and time' approach require resources built-in from the start.

Discussion

The findings of this review complement earlier reviews in public health (LaRocca et al., 2012; Yost et al., 2015) and domestic violence settings (MacGregor et al., 2014). Successful knowledge translation is multi-faceted and time-consuming (Breckenridge & Hamer, 2014), not recognised by usual performance measures (Wathen & MacMillan, 2015) or measured to influence policy and practice (Madden et al., 2016). By adopting a realist lens, we extend our knowledge beyond the barriers and facilitators to understand how knowledge translation works (mechanism) within the context of domestic violence research. A disaggregation of the included studies has identified five preliminary program theories focused on five outcomes: 1) develop key message, 2) flexible evidence use, 3) strengthen partnerships, 4) capacity building and 5) research utilisation. Many of the mechanisms identified are common to different settings, easily transferable to other areas. The unique 'context' and 'outcome' of these mechanisms were also in some instances, generic.

These results further support the development of appropriate key messages. The theory would suggest that this area of research has particular nuances specific to the issue of domestic violence. These could include: acceptance of the problem as gendered (Yates, 2020); the contested definition of DV; the recognition of the harm caused by children's exposure (Gregory et al., 2020); and the framing of the problem. These nuances have impacts on the ability to collaborate with relevant target audiences and ensure the development of appropriate key messages.

With regards to flexible evidence use, similar deficits apply. However, there is also a need to understand how target audiences use evidence with different values, perceptions and norms. Addressing domestic violence is not like some other public health strategies that can be addressed with a single prevention strategy (e.g. falls prevention). It is more complex and multi-layered. Interestingly, this review found that multiple strategies for knowledge translation are encouraged. However, a recent study (Campbell et al., 2019) found that a single strategy approach was, in fact, more effective. Moreover, the inclusion of survivor voices documented by a few included studies suggested more recent and potentially powerful developments (Guruge, 2016; Hegarty et al., 2017; Moffitt & Fikowski, 2017; Tabibi et al., 2017; Wells et al., 2015). However, there is still room for substantial development here.

Similarly, to strengthen partnerships, the mechanism requires a common language. Still, this review revealed that often practitioners do not have a shared language and further lived experience partnerships are not routinely included as part of the partnership building process. Connolly (2017) and Burke (2013) both provided an example of generic strategies applied successfully to the DV context. However, further work needs to account for different discipline and services perspectives to produce common definitions and understanding, an example of this is 'coercive control' which has emerged in the DV literature (Stanley & Devaney, 2017).

The results of this review indicate that capacity building in the area of DV was dependent on valuing the knowledge that partners, especially practitioners, brought to the table. There were, however, few specific DV examples in this area (Burke et al., 2013; Campbell et al., 2011; Saul et al., 2008).

This review confirms that research utilisation requires resources and dedicated leadership. As with capacity building, there were few DV examples. A challenge lies in addressing 'wicked problems' due to difficulties securing ongoing funding and support. Historically, research about

effective programs has not been easily accessible or not applicable for marginalised populations. However, while not in the peer-reviewed literature, several positive examples in this review supporting community-based approaches with diverse populations. (Claussen et al., 2017; Isobell et al., 2016; Tabibi et al., 2017; Zahradnik et al., 2009). However, more attention to theoretical development as well as resources is required to address this lacuna in the literature.

The results of this review have highlighted the complexity of knowledge translation in general as many of the identified CMOs are transferrable to other settings beyond DV. Notably, the mechanisms identified tend to be generic and not specific to domestic violence. However, using a realist lens provided the framework for exploring the differences that are specific to the context of domestic violence. Each included study varied in the level of contribution to the CMOs with several, but not all included studies providing specific examples of domestic violence knowledge translation.

Strengths and limitations

As far as we are aware, this is the first realist informed systematic review of knowledge translation for domestic violence research.

The strength of this review was the use of realist informed review methodology. The 'product' of a realist review is a theory. The five theories created by this review provide a valuable contribution to an emerging body of literature. The previous research has not focused on identifying and organising the contexts or mechanisms that result in successful knowledge translation of domestic violence research. The complexity of the literature meant that the elements needed to be broken down and then put back together again for this specific domestic violence context. The iterative nature of this process ensures that the analysis moves beyond examining knowledge translation as a single response. The process is ongoing, continuously refined and will occur in consultation with the research network. We would argue that the current review will add value to the growing body of realist informed studies and the knowledge translation literature internationally.

The limitations of this review include the contested definition and frameworks, (including differing disciplinary perspectives), a lack of agreement regarding impacts on children, an absence of evidence regarding early interventions for men, and diverse framing of the issues for knowledge translation from health, legal and media (Hester, 2011; Sutherland et al., 2016;

Tarzia et al., 2020). The choice of realist informed review rather than a systematic review resulted in the absence of quality appraisal. The data analysis included examples of knowledge translation mechanisms that were not always specific to domestic violence contexts. It was also notable that knowledge translation examples from survivor voices as well as those from diverse populations were absent in the specific knowledge translation domestic violence examples.

Conclusion

Findings from this review have highlighted the potential for using realist reviews to understand complex areas such as domestic violence. The results will benefit researchers, practitioners and policymakers by ensuring research is translated effectively, and efficiently while providing maximum impact. The authors of this review have identified potential mechanisms of change to support the knowledge translation of domestic violence research. These mechanisms require further testing in domestic violence settings as it is striking that much of the knowledge translation literature was generic rather than specific to this context.

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Table 1 Example of Medline search string

Domestic violence/ or intimate partner violence/ or spouse abuse/ or battered women/ (13918)

(Battered women* or "violence against women" or ((Domestic or spous* or partner* or elder* or family or gender-based) adj3 (violen* or abus* or mistreatment or aggression or victimi?ation))).tw,kw. (18030)

1 or 2 (22249)

((guideline* or knowledge or research) adj2 (implement* or translat* or exchange* or dissemination or evidence or innovat* or transfer* or utiliz* or utilis* or mobiliz* or mobilis* or adopt* or uptake or diffusion)).tw,kw. (48736)

("research-to-action" or "research to-practice" or "knowledge to action" or "knowledge to practice" or evidence uptake or evidence implementation or evidence based).tw,kw. (99578)

Translational Medical Research/ or Knowledge/ or diffusion of innovation/ or information dissemination/ (47495)

4 or 5 or 6 (174725)

3 and 7 (575)

limit 8 to (English language and humans) (437)

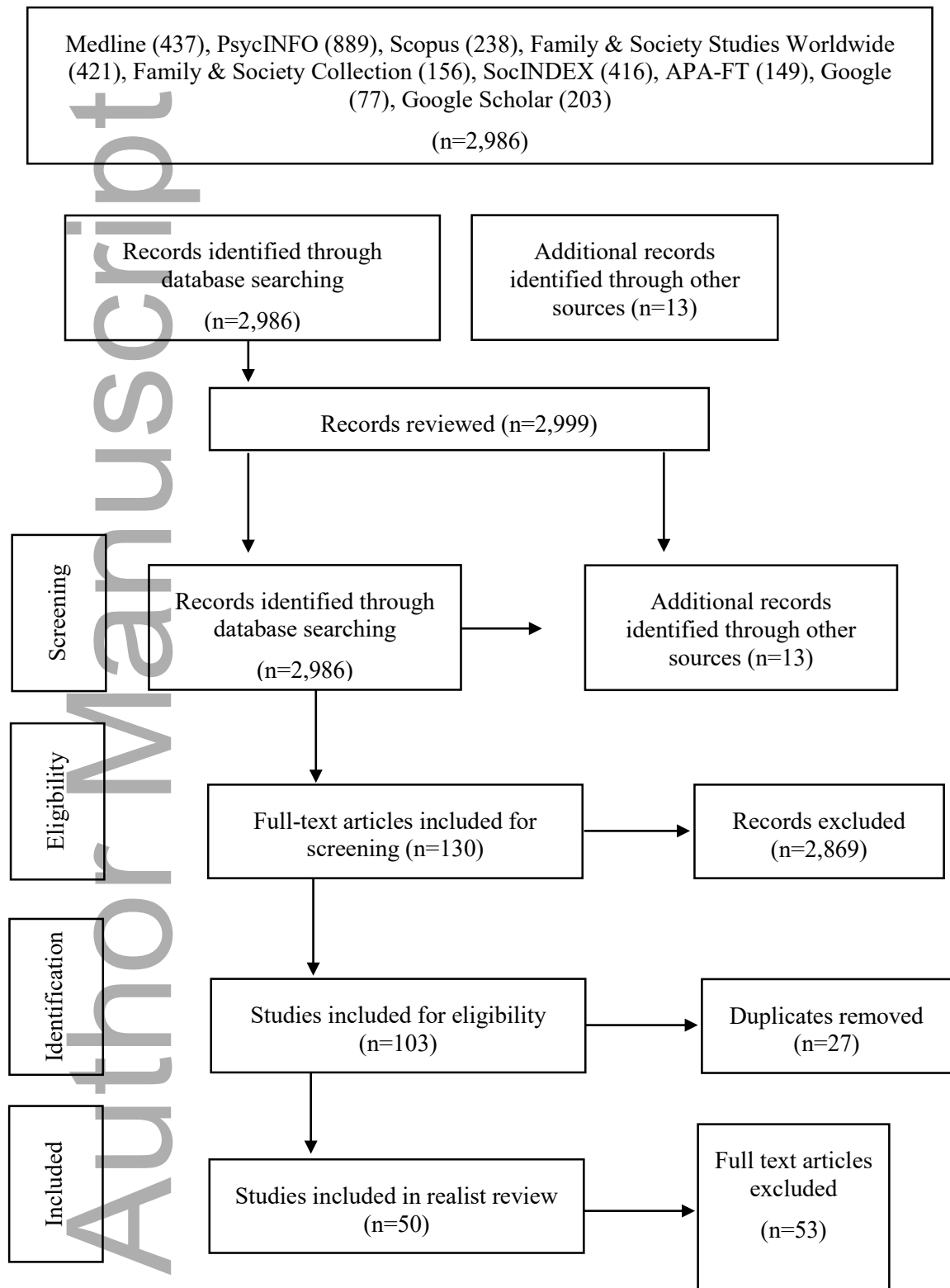
Table 2 Review inclusion/exclusion criteria

Criteria	Included	Excluded
Publication	Peer reviewed literature Grey literature (e.g. books, thesis, reports etc.)	None
Language	English	All other languages
Study design	Any	None
Sample – practitioners, policy, participants with lived experience	Researchers Health care professionals Health care trainees Policy makers Community services Non-government organisation Participants with lived experience	Victims of domestic violence Perpetrators of domestic violence Crimes of domestic violence
Intervention/action/setting – Domestic and family violence	Domestic and family violence Domestic violence Family violence Intimate partner violence Violence against women Violence prevention	None
Outcomes/output – Knowledge exchange or synthesis	Knowledge exchange Knowledge synthesis Knowledge translation Knowledge mobilisation Research translation Research utilisation Research practice gap Implementation	Legal outcomes

Table 3 Summary of data contribution

	Theory 1			Theory 2			Theory 3			Theory 4			Theory 5		
	Target audience	Collaboration	Develop key message	Diverse populations	Multi-layered responses/strategies	Flexible evidence use	Knowledge direction	Common language	Strengthen partnerships	Practitioner knowledge	Embedded framework	Capacity building	Dedicated resources	Dedicated leadership	Research utilisation
	Context	Mechanism	Outcome	Context	Mechanism	Outcome	Context	Mechanism	Outcome	Context	Mechanism	Outcome	Context	Mechanism	Outcome
Albers (2017)			X								X				
Beckett (2016)	X	X	X		X		X				X	X			X
Boyko (2016)					X										
Boyko (2017)			X		X										
Breckenridge (2014)						X	X			X					
Burke (2013)		X	X				X	X	X		X	X			
Campbell (2011)		X						X		X	X	X		X	
Claussen (2017)				X	X		X	X		X	X	X		X	
Connolly (2017)		X	X	X				X							
Decker (2012)						X	X				X				
Dixon (2011)											X				
Goicolea (2015)					X					X					X
Goicolea (2013)					X										
Guruge (2016)		X		X	X				X		X				
Hanson (2016)										X		X			
Hegarty (2017)		X		X							X				
Heyman (2009)							X								
Howell (2017)											X				
Isobell (2016)		X		X	X		X		X		X	X			
Jack (2006)						X									
Jack (2008)	X	X	X				X	X			X		X		X
Kothari (2016)								X	X		X				
Kothari (2013)		X					X		X		X				
Kothari (2014)	X	X	X			X	X	X	X		X				
Larrivé (2012)	X				X		X			X	X				X
MacGregor (2014)											X				
Moffitt (2017)											X				
Murray (2015a)			X								X				X
Murray (2015b)	X	X	X	X				X	X				X		X
Murray (2009)						X				X					
Murray (2010)										X					X
Nancarrow (2015)			X	X		X									
PreVAiL (2016)						X			X						
Saul (2008)					X			X		X		X		X	
Sibbald (2017)			X		X	X	X			X					X

	Theory 1			Theory 2			Theory 3			Theory 4			Theory 5		
	Target audience	Collaboration	Develop key message	Diverse populations	Multi-layered responses/strategies	Flexible evidence use	Knowledge direction	Common language	Strengthen partnerships	Practitioner knowledge	Embedded framework	Capacity building	Dedicated resources	Dedicated leadership	Research utilisation
Spalding (2015a)	X				X									X	
Spalding (2015b)					X	X				X	X				
Sprague (2016)						X									
Stanley (2017)			X	X		X							X		
Stith (2013)				X											
Tabibi (2017)				X		X			X				X		
Tarzia (2016)		X	X	X		X			X			X	X		
Wathen (2016)						X			X				X	X	
Wathen (2013)						X									X
Wathen (2010)	X		X		X			X					X		
Wathen (2015)		X			X	X			X	X	X		X	X	X
Wathen (2011)			X			X				X	X				
Wells (2015)										X					
Yuan (2016)		X							X		X		X		X
Zahradnik (2009)		X		X					X		X	X			X

Figure 1 Search results

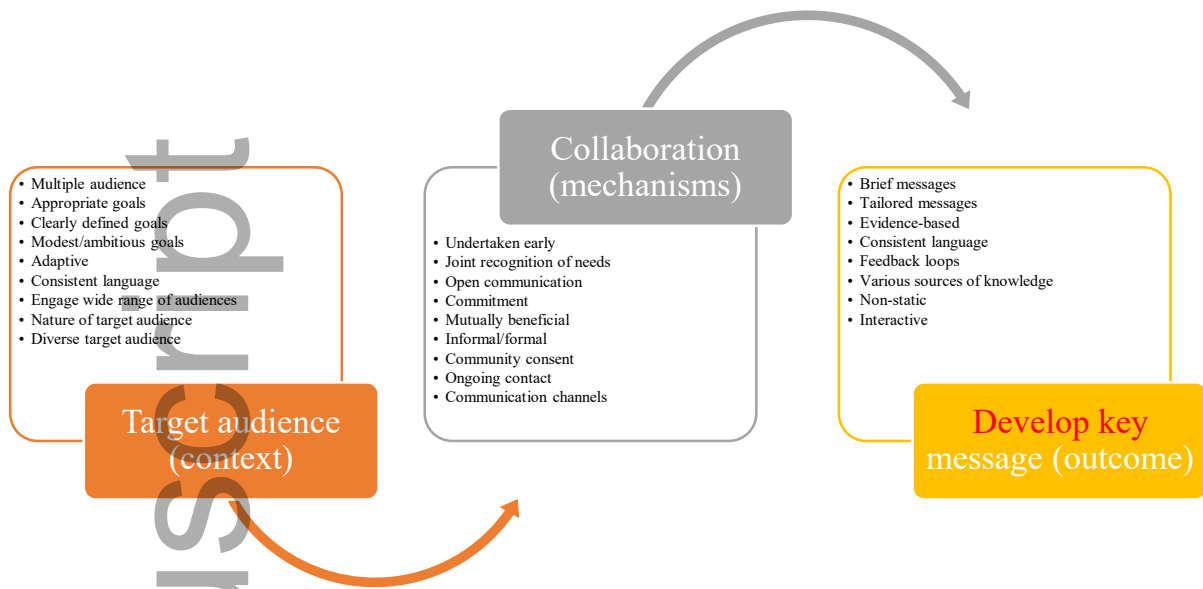


Figure 2 - Theory 1

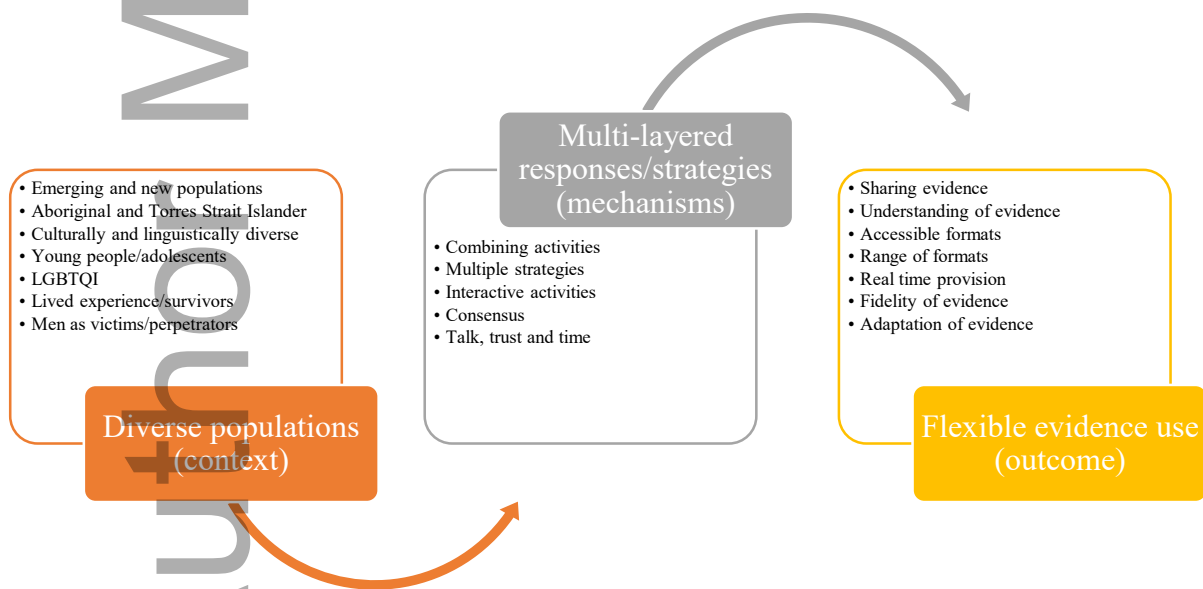


Figure 3 - Theory 2

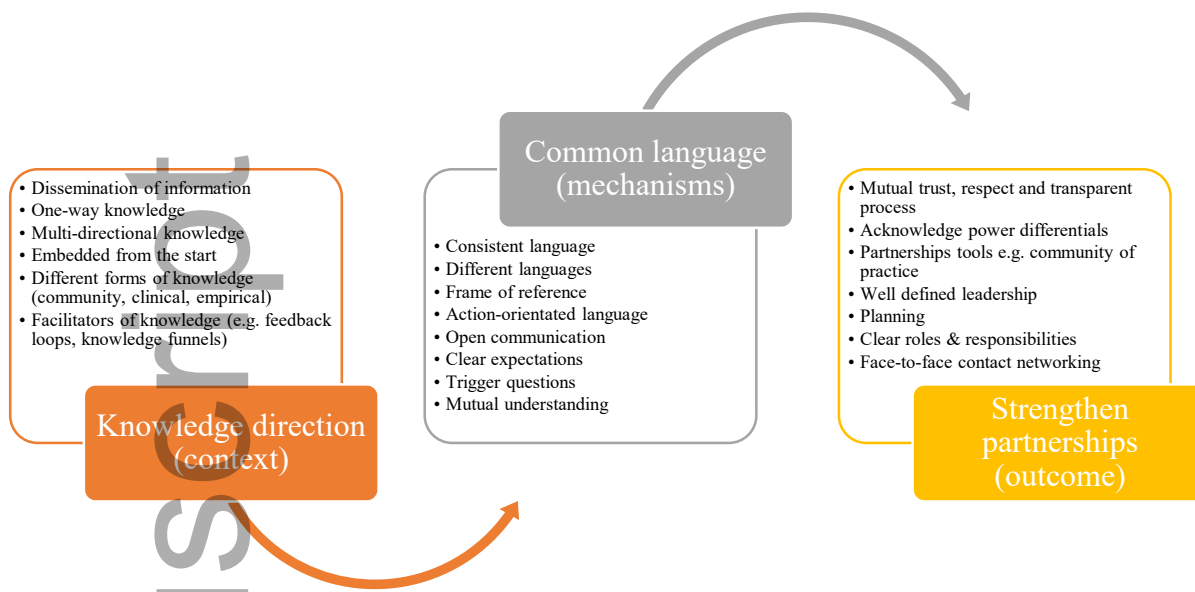


Figure 4 - Theory 3

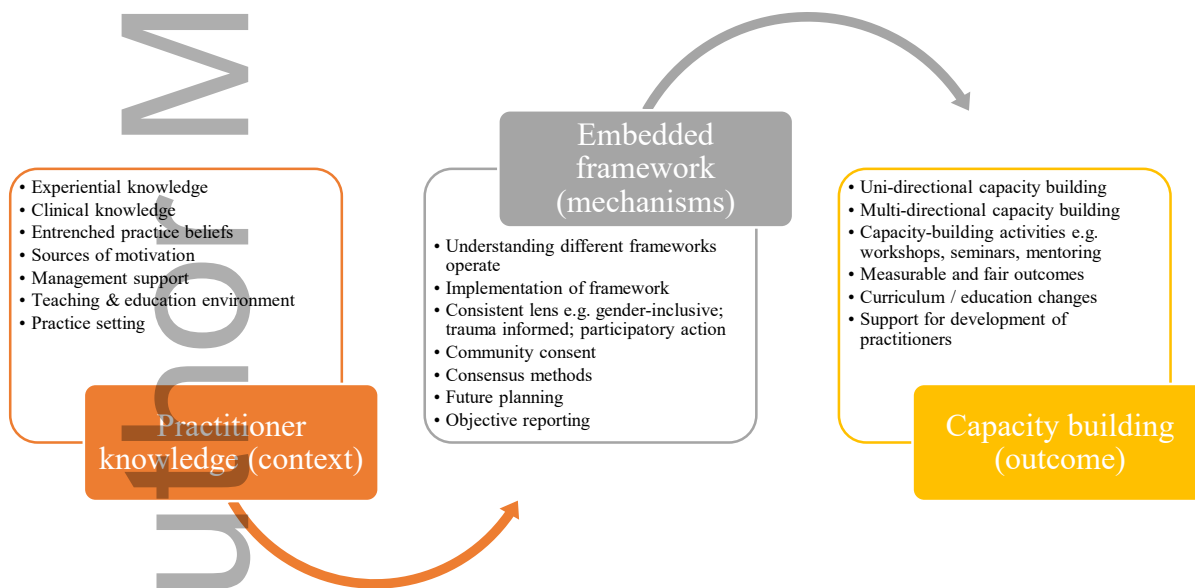


Figure 5 - Theory 4

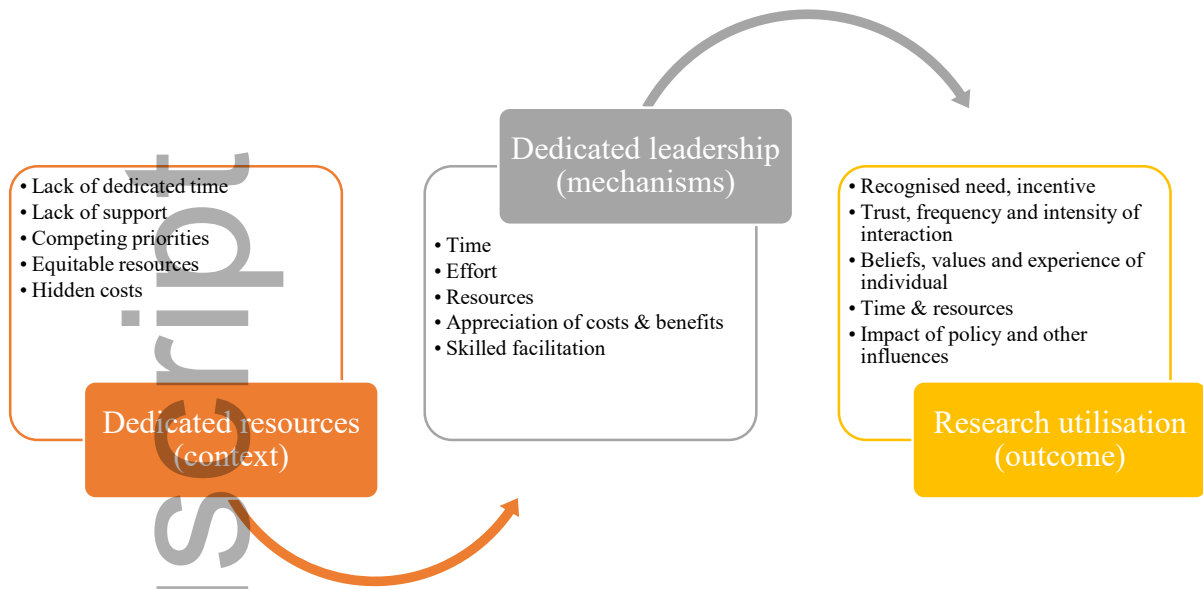


Figure 6 - Theory 5