The use of realist approaches for health research in Indigenous communities

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Abstract
Research approaches and underlying epistemologies should be carefully considered when conducting health research involving Indigenous communities in order to be aligned with the distinct Indigenous values and goals of the communities involved. If Western research approaches are used, it is helpful to consider how they might be consistent with Indigenous ways of knowing. Among Western research approaches, realist approaches might have some congruence with Indigenous epistemologies. For health research in Indigenous communities, realist approaches might be relevant because they are based on a wholistic approach congruent with Indigenous ontologies, anchored in local knowledge, process-oriented and dynamic. The use of these approaches might make it possible to link diverse knowledge systems into action that is meaningful for Indigenous communities.

Keywords
realist approaches, Indigenous communities, Indigenous health services, implementation science

Introduction
For most Indigenous peoples, maintaining a strong connection with the land is of central importance, as it is closely connected to social organization, languages, cultures, ways of knowing and thus, overall health and well-being (Bartlett et al., 2007). Throughout colonization, Indigenous communities have been subjected to research that has neglected their worldview and devalued their cultures and knowledge (Braun et al., 2013; Mashford-Pringle, 2016). Even today, a great deal of health research continues to be poorly aligned with Indigenous goals and values, often dismissing, ignoring or otherwise undermining Indigenous ways of knowing (Hyett et al., 2018). Resulting from the significant harms that come through participation in Western-based research processes, it is unsurprising that many Indigenous people are reluctant, and in some cases, unwilling, to engage in research (Hyett et al., 2018; Kyoon-Achan et al., 2018).

Culturally relevant, respectful and participatory research approaches can be envisioned as a means to consider and embed Indigenous ways of knowing throughout the process of undertaking health research (Martin, 2012; Mashford-Pringle, 2016). However, if research also includes Western (or non-Indigenous) approaches, it stands to reason that these approaches must have some congruence with Indigenous epistemologies and must be adaptable to Indigenous ways of knowing (Simonds & Christopher, 2013). When involving Indigenous communities, Western research approaches need to be implemented in a way that ensures anti-oppressive values, empowering processes and respectful epistemologies (Smylie et al., 2016).

Considering the increased amount of Indigenous health research conducted in recent years, growing numbers of researchers are undertaking research syntheses to capture what the literature is saying about a particular topic. However, very little emphasis has been placed upon critiquing the Western assumptions that may be implicit in ways that these syntheses are undertaken with respect to Indigenous health research. Chambers et al. (2018) has noted that it is important that these types of research syntheses not replicate and perpetuate Western assumptions.

Being part of critical realism, realist approaches (RAs) (which include realist evaluation and realist synthesis) might have some congruence with Indigenous epistemologies. These approaches may offer a means to undertake research and research syntheses that account for, and uphold, both Indigenous and Western knowledge and ways of knowing (Smylie et al., 2016). This article is the result of a reflection on RAs and aims to present why...
and how RAs can be relevant for health research in Indigenous communities. We believe that these approaches are particularly well suited for research in partnership with Indigenous communities because RAs are based on a wholistic approach congruent with Indigenous ontologies, anchored in local knowledge, process-oriented and dynamic.

RAs: a brief definition

RAs aim to understand and model complex phenomena or interventions by identifying patterns in contexts, mechanisms and outcomes among various occurrences of the phenomenon. RAs also “seek to explain real social processes” (Emmel et al., 2018) and to better understand their complexity (Emmel et al., 2018; Potvin et al., 2012; Smylie et al., 2016) and variability (Potvin et al., 2012). From an ontological standpoint, RAs are based on the premise that there is a real external world but that our understanding of it depends on our senses, our brain, our language and our culture (critical realism) (Wong et al., 2012). According to this perspective, it is possible to improve our understanding of reality (although not perfectly) in order to have a more in-depth understanding of phenomena, programmes, initiatives or interventions (Greenhalgh et al., 2017a; Wong et al., 2012). To achieve this deeper understanding, these theory-driven approaches aim to identify various patterns among elements of context, and underlying mechanisms that influence the outcomes of a programme or a phenomenon (Greenhalgh et al., 2017c; Pawson & Tilley, 1997; Van Belle, Rifkin, & Marchal, 2017). From a methodological standpoint, RA fosters the use of multiple data collection methods which may be both qualitative and quantitative (Greenhalgh et al., 2017b; Pawson & Manzano-Santaella, 2012).

In general, RAs are structured in four main steps: (a) an initial theory explaining how a programme or phenomenon is developed; (b) data are identified or collected to identify the elements of the context, mechanisms and outcomes that will be used to test the initial theory; (c) data are analysed to find patterns between elements of context, mechanisms and outcomes which are represented as Context–Mechanism–Outcome (C-M-O) chains; (d) using C-M-O chains, the initial theory is validated or modified. This process, used iteratively, is used to develop a final theory explaining how a programme or phenomenon works (Pawson & Manzano-Santaella, 2012; Pawson & Tilley, 1997; Wong et al., 2012).

Indigenous ontologies, epistemologies and methodologies: a brief overview

Many Indigenous ontologies consider knowing as a relational concept (Shepherd & Graham, 2020), “a perception or construct of interrelatedness—with a spiritual dimension” (Iwama et al., 2009). In this conception of reality, spirituality has a central place as it deepens what can be known about the world (Royal Commission on Aboriginal Peoples, 1996). Thus, Indigenous ontologies are often portrayed as being interconnected and dynamic (Institute of Integrative Science & Health, 2013) where all forms of knowledge allow a more wholistic understanding of the world (Hart, 2010; Institute of Integrative Science & Health, 2013). Reciprocity (Hart, 2010), “historical continuity” and connection to the Land (Shepherd & Graham, 2020) are also intrinsic to most Indigenous ontologies.

Following this, Indigenous epistemologies entail necessarily a relational, respectful and reciprocal link with reality. The relational nature of reality emphasizes the interconnectedness of humans with all things, both living and non-living, as well as recognition and respect to the Creator and indeed, all of creation (Iwama et al., 2009). Indigenous epistemologies are also “fluids ways of knowing derived from teachings transmitted from generation to generation by storytelling” (Hart, 2010).

On a methodological level, some of the ways that Indigenous science draws upon Indigenous knowledge systems is through narratives, stories, proverbs, metaphors, songs, dreams and spirituality. Indigenous methodologies are action-oriented, whereby one is encouraged to learn by doing and focus on learning from the past to inform the future.

Relevance of RAs for health research in Indigenous communities

The goal of using the RAs is to develop a comprehensive and multi-faceted understanding of phenomena which are well aligned with Indigenous perspectives and ontologies (which see the reality as a whole). RAs share some characteristics with many Indigenous knowledge and ontologies, such as promoting wholistic understanding of phenomena (Durie, 2004; Ray et al., 2019). Therefore, investigating Indigenous health would involve capturing a broad and comprehensive vision of health, including mental, emotional, physical and spiritual health (Dapice, 2006). Most Indigenous ways of knowing are based on oral tradition and characterized by experiential learning (Wright & McCoy, 2012), and therefore cannot be captured by some Western research approaches that are considered to be far more linear, controlled and focused on discrete units of analysis (Jiménez Estrada, 2005). As a result of the privilege placed upon Western health research, wholistic approaches (that connect the land, people, spirituality and culture) in Indigenous health often remain at the margins of health research (Ray et al., 2019). It is therefore incumbent to consciously and intentionally embed Indigenous knowledge in Indigenous health research, including research syntheses and reviews, which offer interpretations and themes emerging from large amounts of research (Ellison, 2014).

RAs are highly sensitive to local knowledge and thus allow Indigenous perspectives and knowledge to be more easily integrated in the research process. By integrating the vision of stakeholders concerned with a phenomenon or interventions (Brand et al., 2019; Potvin et al., 2012;
Williams, 2018), RAs aim to understand how different elements in a particular context or milieu are connected together at a deeper level in order to have a more wholistic understanding (Potvin et al., 2012; Van Belle, Ritkin, & Marchal, 2017; Williams, 2018). These approaches also consider the experiential knowledge of the different actors involved throughout the research process (Kirst & O’Campo, 2014) in order to develop and validate a plausible explanatory model (Astbury, 2018) which can facilitate the full consideration and integration of the experiential knowledge of Indigenous communities’ stakeholders. Thus, RAs offer a more fulsome way to understand the underlying assumptions portraying Indigenous health within academic research which, although not perfect, is much more nuanced and wholistic.

Indigenous knowledge is deeply local and rooted in the land (Ellison, 2014). RAs align with this by aiming to understand an intervention or phenomenon in a context-specific way (Emmel et al., 2018; Smylie et al., 2016) in order to recognize the influence of context on processes or outcomes (Van Belle, Van de Pas, & Marchal, 2017). These approaches also place a greater emphasis on local particularities to tailor interventions (Brand et al., 2019).

RAs are well suited to Indigenous ways of knowing because both are relational, dynamic and evolving processes of knowledge creation (Greenwood & Lindsay, 2019). RAs are process-oriented (Maxwell, 2012) and recognize that interventions or phenomenon are dynamic, permeable (Astbury, 2018) and in perpetual transformation (Tilley, 2018). These approaches focus on the process by which a phenomenon or interventions are transformed (Potvin et al., 2012), and try to capture the structure and the evolution of it in its historical context (Williams, 2018).

When modelling how a programme or phenomenon works according to Indigenous knowledge, emphasis is placed on the multiple elements that are interacting as whole (Durie, 2004). Through the development of programme theory, RAs similarly aim to construct models including the different elements that can explain a phenomenon or the effects of an intervention (Van Belle, Van de Pas, & Marchal, 2017; Williams, 2018).

Like RAs, Indigenous approaches to knowledge creation are cyclical processes. The basic units of Indigenous knowledge are stories (Smylie et al., 2004), and Indigenous knowledge is generally a progressive and transformative process of awareness that is intrinsically linked to action (Smylie et al., 2014). Indigenous knowledge systems are deeply relational and community-based, as their dissemination is embedded in social structures to enhance individual and collective well-being (Smylie et al., 2004). These particularities of Indigenous knowledge systems must be taken into account in the analysis and theorization of research data using a RA in Indigenous communities.

Importantly, RAs offer flexible creative mind-sets (Astbury, 2018) that can be used to break with colonial ways of theorizing (Carlson, 2017; Simonds & Christopher, 2013). Programme theory in realist evaluation could be presented in much more meaningful ways for Indigenous communities, such as fictional stories (Carlson, 2017; Simonds & Christopher, 2013), culturally significant metaphors (Kwame, 2017; Simonds & Christopher, 2013), graphics, diagrams or illustrations (Ninomiya & Pollock, 2017). Those ways of theorizing might “minimize the gap between those who are highly literate and familiar with content-specific language, and those who may not speak English as their first language or are less comfortable asking questions or making comments” (Ninomiya & Pollock, 2017). As well, there are elements of Indigenous knowledge that are simply not captured within academia (Jiménez Estrada, 2005), and the development of programme theory in RAs can help understand that these modes of knowledge exist and are very valuable.

**Precautions in applying RAs within the context of Indigenous health research**

Despite these advantages, there is always a need to be cautious when applying Western-based research approaches, such as RAs, in the context of Indigenous health research. More specifically, power issues and the operationalization of these approaches must be considered when using them in Indigenous communities.

RAs do not sufficiently consider power issues (Higgins et al., 2015). In research performed with Indigenous communities, there are inherent power relations derived from colonization that must be acknowledged (Greenwood & Lindsay, 2019; Hyett et al., 2018). Research using RAs within Indigenous communities must highlight the impacts of colonization, power dynamics and inequalities on outcomes, and consider them as important elements of context or mechanisms. This is a first step in working to restore a balance of power in Indigenous communities (Kyroon-Achan et al., 2018). We must also work to rebalance the power dynamics in favour of Indigenous communities.

In this regard and in order to respect their sovereignty (Sumida Huaman & Mataira, 2019), it is necessary to include Indigenous communities in all levels of the research process (Kurtz, 2013) and to engage with them in a long-term partnership in order to develop collectively local research agendas oriented towards greater social justice for Indigenous people (Sumida Huaman & Mataira, 2019).

In addition, RAs may be difficult to operationalize (Robert & Ridde, 2013) given that there are some difficulties in conceptualizing and differentiating some concepts used in RAs such as elements of context and mechanisms (Astbury & Leeuw, 2010; Marchal et al., 2012; Robert & Ridde, 2013; Salter & Kothari, 2014). Given that Indigenous communities have sometimes been overexposed to research that had limited or no tangible benefits, using a hard-to-operationlize approach could lead to scepticism (Peltier, 2018). The time and commitment required might also create research fatigue and initially diminish the involvement and control of Indigenous communities over the research process (Hyett et al., 2018; Peltier, 2018). One potential solution to this pitfall could be to adapt the terminology used (Kyroon-Achan et al., 2018), to train Indigenous collaborators and stakeholders on the principles...
of RAs has concrete actions and benefits for communities to prevent the perpetuation of inequities (Labonte & Spiegel, 2003) and mistrust (Attree et al., 2011). In the context of health research using a RA in Indigenous communities, concrete actions could be analysing how the structure of care contributes to perpetuating health inequities and then participating in the development of health policies or interventions oriented towards the reduction of these inequities (Feir & Hancock, 2016).

**Conclusion**

Indigenous knowledge must speak to policy and decision makers, and it is important to link diverse knowledge systems into action that is meaningful for Indigenous communities (Greenwood & Lindsay, 2019). There is therefore a need to build a bridge between Indigenous and Western knowledge systems (Greenwood & Lindsay, 2019; Smylie et al., 2016) and the use of RAs may be one way to achieve this (Smylie et al., 2016).

By trying to explain social processes including different perspectives (Emmel et al., 2018), RAs allow the development of knowledge to act and transform practices (Ballard et al., 2016) and to guide action locally (Potvin et al., 2012). Despite the potential limitations reported, these approaches could help to better inform policy makers and decision makers, and to develop, implement and evaluate health interventions by including Indigenous and Western knowledge systems on an equal basis.

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