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Knowledge translation in Indigenous communities:  
A review of the literature

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ABSTRACT
The translation of research findings and the development of products and services, has been identified as a research priority that may improve health outcomes for Indigenous peoples. Although an emerging area in Indigenous science, Indigenous scholars have been critical of Western defined knowledge translation theories and approaches, viewing them as neglectful of Indigenous knowledge systems, ways of knowing, and ethics. Within Indigenous knowledge systems, the translation of research findings is best conceptualized as a ‘sharing what we know about living a good life.’ This paper reviews this growing body of literature and explores the following question: What is Indigenous knowledge translation and how and why is it important in research with Indigenous peoples.

Several key themes were identified in the literature, including the notion that Indigenous Knowledge Translation: (1) is best when grounded in Indigenous ways of knowing; (2) is decolonizing in its approach; (3) supports self-determination, (4) is grounded in participatory approaches to develop products and services; and because of these, (5) scholars working alongside communities are thought to enact specific moral and ethical responsibilities in the communities they serve. In reviewing the literature, and given our research experiences as community and academic investigators, we were also interested in focusing attention on the use of stories as successful Indigenous knowledge translation. Indigenous stories, as an artful research translation practice may make the findings of research more culturally accessible for Indigenous communities thereby promoting healing and wellbeing.
Knowledge translation in Indigenous communities: 
A review of the literature

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BACKGROUND

Although a relatively new field of inquiry for Indigenous scholarship (Smylie 2011, Smylie, Olding and Ziegler 2014), there is general agreement that Western defined knowledge translation (KT) theories and approaches may not meet the needs of Indigenous peoples. Jardine and Furgal (2010) argue, for example, that “insufficient attention has been paid to the development of knowledge translation within specific [Indigenous] knowledge systems and ways of knowing” (119; see also Estey, Kmetic, Reading, 2008; Estey, Kmetic & Reading, 2010; King, 2011; Smylie et al, 2003, Smylie 2011, Smylie, Olding and Ziegler 2014). As such, Indigenous and allied scholars have called for the development of KT approaches that express a “commitment [to and] respect [of] cultural differences and [for KT approaches that recognize …] the moral, historical, and legal rights of Aboriginal peoples to self-determination” (Kaplan-Myrth and Smylie 2006, 5).

At a pragmatic level, KT in Indigenous contexts “can be simply understood as sharing what we know about living a good life” (Smylie 2011, Loc 3545; italics in original). This suggests KT is already part of what the Anishinaabe (peoples) refers to as mino-bimaadiziwin (living well). Allowing Indigenous KT to be shaped by mino-bimaadiziwin, suggests that KT processes, activities and products can also be thought of as a sacred pursuit and therefore in tension with Western models of KT. However, knowledge development as spiritual or sacred pursuit are ideas not typically captured as part of Western scientific inquiry (Wenger-Nabigon 2010). In ‘sharing what is known,’ Indigenous KT requires a comprehensive appreciation of Indigenous local knowledge, is connected to the promotion of health literacy, and flows in reciprocal fashion between researchers and community stakeholders (Kaplan-Myrth and Smylie 2006) towards improving health outcomes. Indigenous scholars and communities involved in research also emphasize the importance of decolonizing KT processes, support self-determination, and where Indigenous KT is best developed, draw on a range of participatory methodologies (Barnes Moewaka, et al. 2011, Ermine, Sinclair and Jeffery 2004, Estey, Kmetic and Reading 2008, Estey, Kmetic and Reading 2010, Kaplan-Myrth and Smylie 2006). If such principles are closely followed, it is felt that the fit between KT and dissemination products may result in a better response to the identified needs of Indigenous communities. In other words, Indigenous KT has the potential to support, nurture and sustain positive Indigenous identities for the foreseeable future. In this respect, Indigenous KT needs not only to be grounded in Indigenous knowledges but should also be developed and evaluated from within that intellectual context (Denzin and Lincoln 2008b).

As authors of this chapter, it is culturally important for us to culturally locate ourselves. Randy Jackson identifies as Anishinaabe from the community of Kettle and Stony Point in southwestern
Ontario, Canada. Renée Masching has Iroquois and Irish blood lines and identifies as an adoptee raised in a home with a first-generation Eastern European father and an English/Scottish Canadian mother. We have both worked closely for many years with the Canadian Aboriginal AIDS Network (CAAN). Incorporated in 1997 as a national non-profit, non-governmental body, CAAN’s vision is “a Canada where First Nations, Inuit and Métis Peoples, families and communities achieve and maintain strong, healthy and fulfilling lives and significantly reduce HIV and AIDS, HCV, STBBIs, TB, Mental Health and related co-morbidity issues where Aboriginal cultures, traditions values and Indigenous knowledge are vibrant, alive, respected, valued and integrated into day-to-day life” (see our website at www.caan.ca). Our collaborative work under CAAN, for the past 20 or more years, saw us lead a variety of past and present community-based research projects. Inspired by the growth we have experienced as Indigenous scholars using both decolonizing and Indigenous methodologies, our interest in Indigenous KT marks an added feature where we wish to develop a more Indigenously grounded sharing of research findings in culturally appropriate and meaningful ways.

Indeed, we wish to add our voices to those of other Indigenous scholars, by sharing in their now generally accepted agreement that any research with Indigenous peoples must have a critical and comprehensive understanding of the use of Indigenous knowledge to shape knowledge translation. This includes a project, as one of several research examples we could have used, exploring experiences and responses to depression among Indigenous peoples living with HIV. It is a project that typifies our past approach to simple dissemination (as opposed to Indigenous KT). Although the experiences/responses to depression produced two peer-reviewed journal articles (Cain, et al., 2011; Cain, et al., 2013) and a community report (Jackson, et al., 2008), KT efforts beyond this have largely not occurred. It is also an example that highlights that we need to do better in terms of using decolonizing and Indigenous methodologies to shape KT. As a first step, our goal for this paper was to further explore meaningful Indigenous KT guided by the following questions: (1) what is Indigenous KT and how/why is it needed? and (2) are there any successful KT approaches currently being used in Indigenous communities and what might we learn from them? The larger goal for this paper was to gather knowledge about Indigenous KT that enables the transfer of findings from the depression and HIV study into a more culturally-grounded KT product.

METHOD

We drew on Randolph’s (2009) literature review protocol as inspiration, following key instructions and adapting others. Here, like Randolph (2009), the goal of our review was to develop an understanding of Indigenous KT language, theories, and highlight some examples where KT approaches are in use and working with diverse Indigenous communities. This literature review also sought to synthesize what is known about Indigenous KT, understand key Indigenous KT methodology and theories, develop new lines of Indigenous KT inquiry, and to gain Indigenous methodological insights from other Indigenous and allied scholars in the field. Although this review focused on peer-reviewed literature, in addition to these, several other key documents were also consulted and these include Knowledge Translation for Indigenous
Indigenous Knowledge Translation

Towards developing a better understanding of what is meant by ‘sharing what is known about living the good life’ (Smylie 2011, Smylie, Olding and Ziegler 2014), the literature defined Indigenous KT as an “Indigenously led sharing of culturally relevant and useful health information and practices to improve Indigenous health status, policy, services and programs” (Kaplan-Myrth & Smylie, 2006, pp. 24-25). Two key questions guided the development of our understanding of Indigenous KT. The first question urged us to consider key methodological components of Indigenous KT. A focus on the methodological aspects helped situate our
understanding of Indigenous KT as a discrete process or approach as a fundamental feature of Indigenous science. Indigenous scholars who implement Indigenous KT have outlined several important methodological features. Indigenous KT: (1) draws on Indigenous ways of knowing; (2) is decolonizing in its approaches; (3) supports self-determination; (4) is grounded in participatory approaches; and (5) enacts the ethical or moral responsibility to share research findings. In doing so, it became clear how Indigenous ontology (world view), epistemology (ways of knowing), and axiology (values) are critical for the development of effective Indigenous KT. These focuses lead us to pragmatically consider whether we are living the good life in ways that exemplify successful Indigenous KT. The decision to focus exclusively on arts-based approaches in Indigenous KT relates to the above-mentioned depression study where storytelling approaches were successfully used with Indigenous communities to communicate experiences and responses to depression among Indigenous peoples living with HIV and AIDS. We wanted to capture and learn more fully how Indigenous stories and storytelling as Indigenous KT act as medicine in ways that provide healing to Indigenous peoples (T. King 2003, Peacock 2013, Simpson 2014, Simpson 2011).

**Indigenous KT draws on Indigenous Ways of Knowing**

In 2007, The Canadian Institutes of Health Research (CIHR) issued a directive to health scholars conducting research with Indigenous communities to better understand, respect, and use Indigenous worldviews. This directive outlined for researchers their “responsibilities to the people and culture that flow from being granted access to traditional and sacred knowledge” (CIHR, 2007). It was an approach that was later taken up in a revised Tri-Council Policy Statement outlining ethical research with Indigenous communities (Interagency Advisory Panel on Research Ethics 2010). As well, it promoted a research approach that aligned with the UN Declaration on the Rights of Indigenous Peoples that specified that, “Indigenous peoples have the right to be actively involved in developing and determining health, housing, and other economic and social programs affecting them” (Smylie 2011, Loc 3575). This approach suggests that it is important when using Indigenous KT to consider what, where, who, and why Indigenous knowledges are important.

In the literature, Indigenous knowledge systems are often described as relational, ecological, holistic, experiential, communal, oral and narrative-based (Brant Castellano 2000, Crofoot Graham 2002, Hart 2010, Little Bear 2000, Shiva 2000). Although crucial differences have been noted across Indigenous knowledge systems, these overarching principles are thought to be shared across Indigenous tribal groups in Canada (Brant Castellano 2000, Portman and Garrett 2006). In further describing key features of Indigenous knowledges, Brant Castellano (2000) notes the dynamism, diverse, localized, and intergenerational aspects of Indigenous knowledge. Similarly, Indigenous knowledge, according to Kaplan-Myrth and Smylie, is “alive, enfolded in nature, relationships, spirituality and everyday experiences” (20067). Using and developing new Indigenous knowledge, in addition to these key features, almost always involves the interpretative involvement of healers and Elders.
Indigenous and allied scholars who actively cultivate cultural awareness are thought to be better able to recognize Indigenous knowledge, act on the information that has been gathered, and then use these to develop effective culturally appropriate KT. In this respect, Indigenous knowledges are widely accepted as being rooted in the land, given through spiritual revelation, in dreams, or given through ceremonial relationships (e.g., Elders and healers) with others in the communities (Brant Castellano 2000). Specific to Indigenous KT, scholars also argue that gaining knowledge is also located in sharing knowledge. This sharing is conceptualized as multi-directional and KT is rooted in practical outcomes (Smylie 2011). Knowledge translation in Indigenous communities is first-and-foremost a process that works to uphold principles of self-determination and is focused on collective consensus building, building a shared understanding, and produces dissemination in ways relevant to the socio-cultural contexts in which the new knowledge was generated. As Kaplan-Myrth & Smylie (2006) state, “Indigenous [KT] is an Indigenously-led sharing of culturally relevant and useful health information and practices to improve Indigenous health status, policy, services and programs” (24-25). Rather than traditional Western approaches that emphasize the importance of interactions between scholars and knowledge users (Smylie, Martin, et al. 2003), Indigenous approaches espouse the view that “knowledge translation activities [best occur] within the context in which knowledge is to be applied” (Smylie, Martin, et al. 2003, 142; italics in original). In other words, a focus on the contextual settings of the knowledge user—or target population—and their worldview and ways of knowing are necessary for successful knowledge translation (Jacobson, Butterill and Goering 2003, Smylie, Williams and Cooper 2006).

It is also important to understand who teaches Indigenous knowledge because their involvement in KT is critical to its success. Important tensions are raised between Western and Indigenous knowledge systems when one considers who teaches Indigenous knowledge. As Kaplan-Myrth and Smylie (2006) state, “the Western scientific canon—all about empirical, objective, rational truths—does not classify personal experience and spirituality as knowledge” (24). Rather, within Indigenous knowledge systems, knowledge is gathered through individuals, family, and community relationships, given in or obtained through ceremony, found embedded in songs, works of art and stories, and/or obtained through Elders who provide spiritual and interpretative guidance. In this respect, “Elders are the most highly knowledgeable members of communities” and they are recognized by community members as assuming “responsibility of intergenerational knowledge translation” (Kaplan-Myrth and Smylie 2006, 24; see also Begoray & Banister, 2011). Accessing Indigenous knowledge through multiple sources is key for successful Indigenous KT. Indigenous and allied scholars who take the time to approach Indigenous sources of Indigenous knowledge with an openness and willingness to learn and then act on cultural information to weave these traditional teachings within Indigenous KT may have more success in terms of promoting health for Indigenous people.

Last, it is important to also understand why Indigenous knowledge is important in Indigenous KT. Aside from the fact that being Indigenous matters (Ball 2004), the loss of Indigenous knowledge as a negative consequence of colonialism is but another important reason for embedding Indigenous knowledge in KT. In this vein, “[KT] is inherently political [and is] fundamental to the exercise of self-determination” (Kaplan-Myrth and Smylie 2006, 28).
Indigenous KT is viewed as an effort to both support and affirm the importance of Indigenous identities, but it is also seen as an exercise in confronting Western power and control to define what is meant by ‘good KT science.’ Indigenous KT that draws on Indigenous worldviews is framed by scholars as an Indigenous responsibility or ethic. As Kaplan-Myrth and Smylie (2006) share, “Indigenous knowledge is kept alive through respect for Elders” (29; see also Begoray & Banister, 2011) and this is viewed as both an individual and collective responsibility. Indigenous KT translation thus expresses Indigenous peoples’ endurance “that Indigenous knowledge will not vanish as long as Indigenous people pass on what they know to future generations” (Kaplan-Myrth and Smylie 2006, 29). In this sense, Indigenous research is the development of new Indigenous knowledge and Indigenous KT fulfills the promise of sharing such knowledge in ways that might benefit Indigenous communities.

The importance of Indigenous knowledge to successfully translate health and other information with communities as equal partners is demonstrated by assorted studies. Bisset and colleagues (2004) for example, used a case analysis to describe a community readiness model where diabetes was promoted as a community health issue. Community readiness involved flooding the community with information that transformed diabetes from “something to live with to perceiving diabetes as something to prevent” (Bisset, et al. 2004, 321; italics in original). In using Indigenous traditional ways to disseminate information (e.g., KT decisions were guided by notions of holistic health and the Seventh-Generation teachings), findings demonstrated that raising community consciousness was aided by the “cohesive and assertive tendencies … [of service providers that facilitated] the community’s ability to ‘pull it together’” (Bisset, et al. 2004, 323).

**Indigenous KT Strives to Decolonize KT**

Supported by several key recommendations (e.g., RCAP, the revised Tri-Council ethical guidelines), the development and use of decolonizing methodologies has experienced tremendous growth over the last sixteen years (Brant Castellano 2000, Denzin and Lincoln 2008a, Smylie 2011). Like other areas of Indigenous social and cultural life, Indigenous pathways involved in sharing knowledge have been disrupted by the negative effects of colonization. It is within this vein that decolonization has been identified in the literature as key for successful KT in Indigenous contexts (Smylie 2011). According to Smith (1999), decolonizing approaches in KT are focused on returning research findings “back to the people in culturally appropriate ways and in a language that can be understood” (15). Developed by the Knowledge Translation and Indigenous Knowledge Research Group, according to Smylie (2011), decolonizing KT rests on several interrelated assumptions. First, successful Indigenous KT acknowledges that Indigenous communities already have effective health systems (e.g., ceremonies, medicines and foods) that can be used in designing KT approaches. This assumption has guided a range of successful Indigenous KT approaches in addressing the health of Indigenous communities. Dell and colleagues (2011), for example, explored a culture-based resiliency model of providing care to Indigenous youth experiencing solvent use. By connecting youth with Elders and providing access to traditional foods, this model promoted healing by reconnecting youth with their communities and affirmed their cultural identities. Second,
decolonizing approaches to KT acknowledge that Indigenous health systems include diverse ways of being and that knowing the world is being connected to the land. Recognition of this suggests successful Indigenous KT in one community may not transfer in the same way in another community (Kaplan-Myrth and Smylie 2006). In reflecting on Dell and colleagues’ article (2011), King (2011) observes, “If we improve the health of a small community, that is important, but, for every group there are hundreds or even thousands like them but different” (73). For example, traditional foods in one community may not exist in another so what is it about the traditional food offered to Dell and colleagues’ participants that worked? How might findings from this study inform solvent use services in other Indigenous communities? The answer to this question is not yet available and because of this, according to King, Indigenous “knowledge translation is a vital part of our scientific arsenal that still needs refinement” (201173).

These first two decolonizing principles—i.e., recognition of Indigenous strengths and attending to Indigenous diversity—links with other principles of decolonizing KT for use in Indigenous communities. It is widely recognized that Indigenous health is rooted in local environments and ecosystems and as such embodies crucial differences (Smylie 2011). Successful Indigenous KT considers this diversity and attempts to understand knowledge translation as specific to one locale. In one study, for example, scholars compared the use of one KT strategy in three Indigenous communities in Canada. Smylie, et al. (2009) found that “each of the three participant communities [had] unique and context-specific values, practices, and social structures that influence the pathways of health information” (page 443) and that because of this, it is “important to [draw on] Indigenous knowledge [from] within local geographic ecosystems” (page 443) to account for Indigenous diversity. This principle also recognizes that “these systems [are] epistemologically distinct from modern biomedical scientific traditions, which purposefully decontextualized knowledge from local contexts to discover generalizable health principles and cures” (Smylie 2011, Loc 3551). In fact, it is widely acknowledged that Indigenous peoples conceptualize health and wellbeing in ways consistent with their cultures. In other words, the decontextualized nature of Western health information may not always be amendable in diverse Indigenous cultural contexts where the focus in the later is rooted in the local environment. Another similar decolonizing principle recognizes that successful Indigenous KT makes a connection with the political context in which Indigenous health knowledge is used in health services and programs. Here, Indigenous KT is conceptualized as inherently political in terms of articulating self-determination. Connected with these principles, successful Indigenous KT approaches recognize the ways Indigenous knowledge systems of health were damaged by state policies that suppressed Indigenous ceremonial and health practices. It is an Indigenous KT approach that actively works to redress the negative impacts experienced by Indigenous peoples in Canada. This approach continues to reverberate in Indigenous communities by affirming the cultural values of Indigenous peoples as important to community health and wellbeing.

Successful Indigenous KT strategies that embed a decolonization orientation and that draw on the strengths of Indigenous culture, may serve to increase trust in proposed health services and programs where other approaches fail. “[C]ontemporary health knowledge and health behaviour among Indigenous individuals and communities is influenced by an interplay of precolonial
systems of health, historic, and ongoing processes of colonization, and exposure to non-Indigenous systems of health—the nature of this interplay is diverse and varies according to individual and community experiences, locations, migrations, and kinship systems” (Smylie 2011, Loc 3551). Understanding local experiences are important towards crafting effective Indigenous KT that is meaningful to them. Furthermore, “a decolonizing process involving critical examination and dismantling of individual and systemic assumptions and power relations, including the suppression of Indigenous knowledge, is required to improve the health of Indigenous communities” (Smylie 2011, Loc 3551).

**Indigenous KT Supports Self-Determination**

Indigenous KT is also a process that works to uphold principles of self-determination. This directs KT scholars to implement consensus building strategies, build shared understandings, and devise KT approaches that are relevant within the socio-cultural contexts in which knowledge was originally generated. In other words, a focus on the contextual settings of the end user—or target populations—is essential for knowledge translation activities to be successful (Jacobson, Butterill and Goering 2003, Smylie, Williams and Cooper 2006). In short, Indigenous KT supports Indigenous peoples’ conceptualization of health (Smylie, Williams and Cooper 2006). As an example of self-determination in KT for Indigenous peoples, Smylie, Williams and Copper (2006) asked participants at the **Canadian Conference on Literacy and Health** the following question: “What exactly are culture-based approaches to literacy and health, and how can they be effectively and practically applied in given Indigenous contexts?” (S22). In responding to this question, participants highlighted the importance of self-development, understanding and embedding Indigenous knowledge in KT messaging, fluency in terms of cultural knowledge, and a focus on holistic health (e.g., attending to physical, mental, emotional and spiritual aspects) and Indigenous wellbeing. However, despite wide acceptance of self-determination in health literacy as a goal in Indigenous KT, significant gaps in knowledge continue. These gaps include a lack of systematic reviews of research of Indigenous KT, examples of best practice engaging communities in KT practices, best practices in health services using Indigenous KT, evaluations of Indigenous KT approaches, and barriers to effective Indigenous KT (e.g., lack of appreciation of Indigenous knowledge, racism, poverty, etc.) (Smylie, Williams and Cooper 2006).

**Indigenous KT is grounded in Participatory Methodologies**

Using decolonizing approaches coupled with support for self-determination for Indigenous peoples, the Indigenous KT approaches reviewed here draw on a range of participatory methodologies to achieve successful transfer of knowledge from the academy to the community. According to Smylie “methods of Indigenous knowledge generation and application are [often] participatory, communal and experiential, and reflective of local geography” (2003, pp. 141; see also Barnes, et al. 2011; Begoray & Banister, 2011; Masching, Allard & Prentice, 2006; Smylie, 2011). Participatory methodologies emphasize a ‘by us/for us and about us’ approach; are directed by communities in leadership positions; privilege local and experiential knowledges; involve the community in equal partnership; and ‘retraditionalize’ the research process (Ball and
Janyst 2008, Cahill 2007, Evans, et al. 2009, Jacklin and Kinoshameg 2008, Walters, et al. 2009). According to Wallerstein & Duran, “[Community-based participatory research] is an orientation to research that focuses on relationships between academic and community partners with principles of co-learning, mutual benefit, and long-term commitment and incorporates community theories, participation, and practices into the research efforts” (2006:312). In terms of Indigenous KT, participatory methodologies allow self-determination to emerge by both making room for Indigenous peoples to be involved in constructing knowledge but also for their involvement in disseminating research findings (Smylie, Williams and Cooper 2006). These are approaches that embody the principles expressed in a range of participatory methodologies. These approaches also suggest a critical appreciation of and the desire to use Indigenous knowledges in crafting culturally appropriate models of KT.

Although participatory methodologies were taken up by a variety of authors in this review (McShane, et al. 2006, Masching, Allard and Prentice 2006, Martin 2006), St. Pierre-Hansen and colleagues (2010) describe a participatory model that drew on the strengths of an Indigenous community towards developing appropriate culturally grounded palliative care practices. Focused on developing a culturally responsive model of care, this example involved consulting an Elder’s council, community members and leaders, and a traditional healer. In their efforts to better understand ways that barriers to effective KT can be overcome in Indigenous communities, St. Pierre-Hansen and colleagues also found that Indigenous governance models that integrate cultural values, practices and norms and that exhibited an organizational culture that was aligned with health research best exemplify the principles needed for successful Indigenous KT.

For researchers working with urban Inuit in Ottawa Ontario, the involvement of community in research processes was important because “the major sources of health information are from within the Inuit community, principally through Elders, family, friends, staff of the Inuit Family Resource Centre, and family doctors” (McShane, et al. 2006, 298). Understanding effective Indigenous KT is about recognizing community strengths to produce and share information and this, in turn, supports principles of self-determination. As McShane and colleagues (2006) state, “Compared to the model of knowledge translation put forth by the [CIHR], the results suggest a need to for a direct link between knowledge users (i.e., community members) and the knowledge products. Typical knowledge products (i.e., pamphlets) may need to be replaced by information sources linked to Inuit oral, direct communication traditions (i.e., audiovisual recordings) where knowledge users have been directly involved in the preparation and presentation of health knowledge flowing from research” (p. 299).

**Indigenous KT is Ethical Responsibility**

Like principles of two-eyed seeing (Hatcher and Bartlett 2010, Iwama, et al. 2009), the idea of an ‘ethical space’ emerged as a key principle when working with Indigenous communities on knowledge translation activities. Ethical space is defined as “the common space between two disparate knowledge systems, cultures, and world views” (Jardine and Furgal 2010, 110; see also Ermine et al, 2004; Poole, 1972). It is a space where dialogue about intentions, values,
perspectives and assumptions are respected in ways that promote “amicable research agreement between researchers and Indigenous communities” (Jardine and Furgal 2010, 110). The idea of an ‘ethical space’ helps to advance the argument that Indigenous KT is grounded in, supports, and builds on Indigenous perspectives and values (Smylie, Williams and Cooper 2006). It is also within this ‘ethical space’ that Indigenous and allied scholars have critiqued Western knowledge generating systems for not being open to Indigenous ways of sharing knowledge (Duran & Duran, 2000). A comparison of Western and Indigenous knowledge translation systems demonstrates fundamental differences that need to be accounted for when interfacing between divergent systems. Therefore, “knowledge translation methods for health […] research must be specifically developed and evaluated within the context of [Indigenous] communities” (Smylie, et al., 2003, p. 142). Considered theoretical development, the two-community framework espoused here as an ‘ethical space’ envisions new ways of developing and sharing new Indigenous knowledge (Lester 1993, Smylie, Martin, et al. 2003). In this respect, and as described above, Indigenous KT is found to be consistent with the family of participatory methodologies that urges scholars to design KT with community relevance and community control in mind. Several articles included in this review describe Indigenous KT as embedded in, and consistent with the philosophies of community-based research methodologies (Elias & O’Neil, 2006; Masching, Allard, & Prentice, 2006). In this way, Indigenous KT is conceptualized as a moral obligation within Indigenous societies. Smith (1999) provides a powerful statement about methodology, and particularly, the importance of decolonizing research and moving towards Indigenous knowledges in an Indigenous KT research process as an ethical stance. She states:

Methodology is important because it frames the questions being asked, determines the set of instruments to be employed and shapes the analysis. Within an indigenous framework, methodological debates are ones concerned with the broader politics and strategic goals of indigenous research. It is at this level that researchers have to clarify and justify their intentions (Smith 1999, 143).

From an Indigenous perspective, it is therefore ethically and vitally important to consider the ways ontology (i.e., theory of the nature of existence), epistemology (i.e., nature of knowing), methodology and methods shape the scientific enterprise (Wilson 2008). These approaches to conducting research also shape methodology and method as they relate to Indigenous KT. All aspects of Indigenous knowledge interact to shape the knowledge production and dissemination process and begin with the notion of idea worthiness: the questions asked, the ways questions are asked, and how data is analyzed and interpreted (Wilson 2008) and shared. For Indigenous peoples, “the ways in which scientific research is implicated in the worst excesses of colonialism remains a powerful remembered history for many of the worlds’ colonized peoples” (Smith, 1999, p. 1). Further, it is a move that supports “the imperatives inside the [Indigenous] struggles of the 1970s [towards a …] survival of [a] peoples, [their] cultures and languages, [and supports] the struggle to become self-determining” (Smith 1999, 142).
Arts-based Indigenous knowledge translation: Are we living the good life?

A key question as it relates to Indigenous knowledge translation is whether we ‘are living the good life’? In other words, are scholars sharing health research findings with diverse Indigenous audiences in ways consistent with their knowledges? As Christensen (2012) notes, the processes and the products used in Indigenous knowledge translation are often not recognized or supported within the academy. Western methods (e.g., journal articles and formal research conference presentations) for sharing information tend to have better traction and tend to also dominate the research landscape as the only acceptable and more worthy forms of KT. Increasingly, however, qualitative scholars who are critical of the objectivity and rationality biases in the sciences have become increasingly interested in a variety of arts-based approaches for use in KT (Bazeley 2006, Boydell, et al. 2012, Coemans, et al. 2015, Austin and Forinash 2005). Not only can arts-based approaches drive the ways in which health knowledge is generated, they are research approaches that influence dissemination strategies in ways that challenge Western notions about what counts as evidence. Collectively, arts-based approaches are contributing to a new “appreciation for the complexity and multi-dimensionality involved” (Boydell, et al. 2012, 2) in translating findings for use across a variety of populations or audiences.

In fact, the social sciences are beginning to recognize the potential of arts-based approaches to powerfully reveal important aspects of the illness experience and what is meant by health and wellbeing. In other words, as Boydell and colleagues (2012) argue, “by incorporating art forms in the research process it is possible to evoke emotional responses and to construct alternative forms of representation that promote dialogue and shared storytelling” (2). The value of arts-based approaches is premised on the “subjective nature of human experience, an interpretative philosophy vis-à-vis knowledge production, including a creative process and a representation of that experience made available to others” (Boydell, et al. 2012, 2). Gergon and Gergon (2011) also argue that art-forms in the social sciences creates interest, generates action, directs critical assessment towards health issues, and are better than traditional academic forms of knowledge translation where the latter is thought of as a limited model for communicating research findings across audiences.

Congruent with critical, Indigenous, and decolonizing methodologies (Denzin and Lincoln 2008a, Denzin and Lincoln 2008b), arts-based approaches can be defined as “method[s] in which the arts play a primary role in any or all of the steps of the research method. Art forms […] are essential to the research process itself and central to formulating the research question, generating data, analyzing data, and presenting the research results” (Coemans, et al. 2015, 34; quoting Austin & Forinash, 2005). These relatively new approaches draw on a number of different artistic and visual methods. Visual methods for dissemination are used across a variety of arts-based approaches, including photography, collage and in paintings. One example of arts-based KT used photography to explore food security in the lives of Indigenous children. This photovoice project produced a photobook and the result proved to be “a powerful means for disseminating findings and creating opportunities for individual and community-led change [that] positioned youth as health and cultural advocates, and valuable community assets” (Genuis, et al. 2014, 606).
Indigenous KT using arts-based approaches can also focus on performance (e.g., film and theatre). Willox and colleagues (2013) explored the use of digital storytelling as an example of performance in KT to focus on the impacts of climate change. Findings from this study suggest digital storytelling helped to not only preserve but to promote Indigenous oral wisdom for wider community benefit. Although digital storytelling has been criticized as a method that does not faithfully represent Indigenous traditional knowing (Hopkins 2006), it can still positively update and shape the ways traditional knowing is presented (Iseke and Moore 2011). Beltrán and Begun (2014), for example, effectively argue that digital storytelling offers an opportunity for healing, is potentially transformative, and is a method that can potentially disrupt the experience of historical trauma suffered as a result of the negative effects of colonization.

Finally, narrative methods (e.g., poetry, fiction and non-fiction) as arts-based approaches to knowledge translation can also be effectively used to disseminate findings affecting positive social change. Several narrative approaches stand out as examples of positive and effective knowledge translation strategies. Blodgett and colleagues (2011) used vignettes as a narrative strategy in an attempt to address some the incompatibility of Western methods in social research with Indigenous ways of knowing and sharing information. Drawing on participatory action research principles coupled with cultural praxis, they found the approach “particularly salient within the Aboriginal community as stories are a traditional way of passing on knowledge and preserving cultural values and teachings” (Blodgett, Schinke, Smith, Peltier, & Pheasant, 2011, pp. 529; see also Begoray & Banister, 2011). In the words of a community author from this study, “in using the traditional pathways of storytelling, the spirit of our research will continue to be alive for those researchers who will follow” (Blodgett, Schinke and Smith, et al. 2011, 529; italics in original). Similarly, and in another study, Christensen (2012) focused on the written word as a valuable arts-based approach towards translating knowledge. Drawing on his dissertation findings of Indigenous homelessness in the Arctic region, Christensen used his research findings to create a fictionalized account of one woman’s experience of homelessness. The value in this approach not only heightened confidentiality, but was enthusiastically and resoundingly well received by participants because it provided them with a way to view their experiences of homelessness as an account of resiliency and agency. As Christensen (2012) states, “Not only do creative representations of research have the potential to engage research participants in new ways, [but] they […] also [serve to] influence participants’ understandings of their experiences” (237) and in a more positive light.

Typically, arts-based research methods influence the ways data is gathered, how data is understood, and relevant here, how arts-based approaches are used to disseminate findings. Specific to the later of these, arts-based methods “are [being] used as a medium to translate an outcome of a particular research project, replacing a traditional research report and moving away from the traditional focus on textual dissemination of research findings” (Coemans, et al. 2015, 34). Again, research findings are being re-imagined or represented by visual, narrative or performance art projects. Blodgett and Schinke (2015) explored the role of culture in athletes’ experiences in ‘mainstream’ sports venues through the use of mandala drawing (coupled with conversational interviewing) as a promising arts-based form. They found that their research
approach “open[s] space where Aboriginal athletes could more deeply and meaningfully share their stories” (Blodgett and Schinke 2015). In another study, Dell and colleagues (2011) explore the transformative power of storytelling for use in clinical settings with First Nations and Inuit youth experiencing solvent and other substance use. Use of storytelling in clinical settings were identified as more “respectful of local values and traditions” (Dell, et al. 2011, 80) and more connected with community processes related to providing care and supporting healing and wellbeing.

Our recent research experience, not unlike the empirical studies described above, suggests also that the value and use of cultural symbols (e.g., Medicine Wheel) or cultural approaches (i.e., storytelling, video) to sharing and transferring knowledge can offer unique ways to write, speak about, and present findings in ways more congruent with Aboriginal worldviews (Jackson, Brennan, et al. 2015, Amirault, et al. 2015). The use of cultural symbols, such as the Medicine Wheel, potentially facilitates the goal of knowledge translation, exchange, and uptake of research findings in communities of interest because it presents findings with active community involvement and draws on the cultural strengths of sharing to present research findings in ways that make sense to participants. Along with the development of printed project reports, which are familiar formats for policy audiences, the projects we have been involved with have incorporated a variety of arts-based approaches, for example, data visualization used as a way of visually representing oral tradition. This project, exploring resilience among two-spirit men, visually represented our research findings using an Anishinaabe Medicine Wheel. Drawing on principles of data visualization and information architecture, we created an online web space where community members (as well as other audiences) can interactively explore resiliency in ways that made sense to them (see http://www.oahas.org/2shawls/). In another project, we undertook a scoping review of global decolonizing and Indigenous methodological literature to explore Indigenous knowledges with the aim to better understand ways of embedding this knowledge in our research processes, in generating new knowledge, and in disseminating findings of research back into the populations in which we work. Drawing on the aesthetic of oral storytelling and the power of documentary film to disseminate findings, this project hosted a research team sharing circle where we video recorded our dialogue and then selected key themes to share with wider audiences (visit https://www.youtube.com/user/CdnAboriginalAIDS). In feedback from people whom we talked with, many regarded the videos as enormously valuable, more accessible than written formats, and engaging. Building on these examples, the first author of this paper has become increasingly interested in the use of storytelling as an effective Indigenous KT dissemination strategy.

**Storytelling as an Arts-informed KT Approach**

Storytelling as a knowledge translation strategy is thought to be congruent with Indigenous knowledges supporting Indigenous self-determination, healing from colonial trauma, and the resurgence of Indigenous cultures and lifeways (Begoray and Banister 2011). Moreover, as Christensen writes, “within an Indigenous sociocultural framework, storytelling is the central medium of knowledge transmission and is also an important educational tool” (2012232). Smylie (2011) also supports the use of storytelling as an Indigenous KT dissemination strategy because
as an arts-based approach, “Storytelling […] is one] important way that local knowledge, values, and skills were transferred within and among communities and across generations” (Loc 3563; see also Kaplan-Myrth & Smylie, 2011; Lawrence et al, 2006; Little Bear, 2000). The primary reasons for support of storytelling as a KT strategy in Indigenous communities is derived from the understanding that stories embed the cultural protocols of a specific Indigenous peoples (Lavallee and Poole 2010), are powerfully linked with the power of oral tradition (T. King 2003), and are grounded in different ways of knowing (Walker 2001, Wenger-Nabigon 2010). According to Smylie and colleagues (2003):

“In Indigenous knowledge systems, […] the development of] knowledge [often] starts with ‘stories’ as the base units of knowledge; proceeds to ‘knowledge’ [and the […] integration of the values and processes described in the stories; and culminates in ‘wisdom,’ and experiential distillation of knowledge.’ This process is cyclical, as ‘wisdom’ keepers in turn generate new ‘stories’ as a way of disseminating what they know. Traditionally local forms of knowledge dissemination were [often] interwoven with social, political and kinship structures [in ways that […] reinforce individual and collective wellbeing […] to ensure the protection and sustainability of the physical environment’ (p. 141).

In exploring Indigenous adolescent girl’s health, Begoray & Banister (2011) advocate conceptualizing an effective knowledge translation approach as associated with community-based research methodology. As such, effective knowledge translation with Indigenous girls focused on issues of contextuality, collaboration, reciprocity, relationality, and reflexivity. Storytelling as a KT approach thus reflects “the intrinsic connection of everyday pragmatism to metaphysical and symbolic realities [as] a common feature of Indigenous worldviews” (Smylie, Williams and Cooper 2006, S22). The productions of these stories are grounded in community-based research approaches in ways that attend to “the culture and context of the participants” (Kelly, Mock and Tandon 2001, 348; see also Christensen, 2012). Here the objective is to locate ways to present research findings in immediate and engaging ways that inspire change by using the cultural lens of participants that reflect the ways depression might be perceived, experienced, and understood—not only by the participants—but by the general public as well. According to Christensen (2012), storytelling has the potential to transcend cultural borders making it a powerful vehicle that “appeal[s] to the heart of diverse audience” (232).

DISCUSSION AND CONCLUSION

The Indigenous KT literature offers some important direction for developing research dissemination approaches with Indigenous communities. First and foremost, this body of literature directs KT scholars to foreground Indigenous worldviews. Understanding the nature of Indigenous knowledges and implications for Indigenous KT, means the translation of research findings will be attentive to local conditions and ways Indigenous communities understand and use cultural wisdom. Understanding that Indigenous knowledges are rooted in specific ecosystems means KT scholars will avoid “ineffective” approaches that are not grounded in “locally specific, community generated understandings” (Smylie, Kaplan-Myrth, et al. 2009,
443). In this respect, Indigenous communities are well positioned to contribute to KT efforts. Attention to Indigenous knowledge is also considered important because when grounded in Indigenous knowledges, scholars will understand that Indigenous peoples do not operate as if there is a separation between knowledge production and knowledge dissemination. Rather, scholars will understand that “KT [is] nothing new for Indigenous peoples [where possession of knowledge has always been] inextricably linked to action both philosophically and practically” (Smylie, Olding and Ziegler 2014, 17).

Drawing on the wisdom embedded in Indigenous knowledges—and where such received support can be seen in several key research policy directives—the development of effective Indigenous KT is decolonizing and participatory. As Begoray and Banister (2011) state, health “programs would be more effective, especially if Indigenous [local community representatives …] were founded upon community-based knowledge translation principles” (p. Loc 2707). Collaboration engages community members, shares power, and draws on local community knowledge. In this vein, community involvement not only centres KT within Indigenous worldviews, ways of knowing, and ways of learning, it is a process by which Indigenous KT contextualizes community-based KT as specific to a local Indigenous population. Connected to local conditions, Indigenous KT processes strive to build trust, shifts power to community to decide on actions, and embodies a synergistic and reciprocal relational ethic (Begoray and Banister 2011). In other words, as Barnes Moewaka and colleagues (2011) write, Indigenous KT avoids “knowledge-rich research experts delivering outputs to knowledge-needing end users. Such expert-driven models fall short of meeting the complexity of the research-user interface, particularly in relation to Indigenous communities” (p. Loc 3057).

Finally, Indigenous KT draws on the power of decolonizing and participatory approaches aimed at creating “ethical space” where collaboration, reciprocity, and meaningful community and academics relationships “resonate with the tenets of Indigenous ways of knowing” (Begoray and Banister 2011, Loc 2795). As a model that informs the ways that power sharing occurs within the context of knowledge production and knowledge use, as Ermine and colleagues (2004) state, these are processes where “empowerment and benefits […] become central features of any research entertained and conducted” (Ermine, Sinclair and Jeffery 2004). It is a conceptual space: a place to negotiate partnerships that acknowledges the political nature of knowledge production and dissemination, redresses loss of Indigenous knowledges, contributes to the resurgence of Indigenous lifeways grounded in local cultural perspectives, and strives to enable individuals, families and communities to live a good life (Kaplan-Myrth and Smylie 2006). In short, ‘ethical space’ capitalizes on the ideas of “equity and mutual respect for different ways of knowing” as critical for success (Smylie, Williams and Cooper 2006, S25).

Despite this direction, however, Indigenous KT theories do not yet adequately inform nor provide sufficient direction and this continues to be problematic (Smylie 2011). This raises important questions about translating research findings of an earlier study exploring experiences and responses to depression among Indigenous peoples in Canada (Cain, Jackson, et al. 2011, Cain, Jackson, et al. 2013, Jackson, Cain, et al. 2008). The literature reviewed acknowledges
storytelling as healing in Indigenous contexts because they are literary devices that are grounded in experiential learning, are interactive, builds on the oral tradition, and can serve to “translate information among and across generations about their history, origins, and spirituality” (Begoray and Banister 2011, Loc 2896). Little information, however, is provided about how these stories might be developed from research findings. Questions about what Indigenous storytelling is, how Indigenous stories are created, and how might stories be used in knowledge translation remain. Nonetheless, storytelling is frequently cited as the most reported and used type of communication in Indigenous communities and the involvement of Elders in Indigenous KT can “[model…] storytelling, listening, sharing, and ways to take positive action” as central toward promoting effective translation for Indigenous community benefit.
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