Working towards an integration of implementation science, cultural adaptation and engagement

Authors
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Abstract
The Model of Engaging Communities Collaboratively (MECC) was developed with the integration of literature reviews in cultural adaptation approaches, engagement and implementation approaches; and international Indigenous feedback to inform the processes of implementing evidence-based practices (EBPs) with Indigenous populations. This model synthesises the collective strengths of these approaches and feedback and provides checklists for practicality of use by researchers, service providers and global Indigenous populations alike. This article describes the process of the theoretical development of the MECC and the feedback that refined it into a functional model for working with Indigenous populations worldwide.

Keywords
Indigenous, cultural adaptation, implementation, engagement, collaborative

About the authors
Cari McIlduff is a Research Fellow at The Morning Star Lodge at the University of Saskatchewan. Cari obtained a bachelor’s degree in psychology in Canada with the support of the Terry Fox Humanitarian Award, and has worked in early childhood intervention in a rural school division in Canada. Cari completed her PhD in Australia, exploring best practice methods and cultural safety in working with Indigenous peoples. She is an author of a book chapter on working effectively with Aboriginal and Torres Strait families and communities. She has also authored a parenting module for families who have or are experiencing trauma and/or toxic stress within the Positive Parenting Program. She co-developed and evaluated the Model of Engaging Communities Collaboratively with Indigenous communities across five countries, a model of culturally safe methodology for community capacity building and social change. As an Indigenous ally, Cari is dedicated to working with Indigenous communities globally to support and promote their community-led social change and research agendas for what is required in each unique community.
Michell Forster is an Indigenous Implementation Consultant with Triple P International and holds a master's degree in Indigenous Studies and Wellbeing. Michell is an Aboriginal woman and has extensive experience in Counselling, Health and Wellbeing, Implementation, research, community consultation and program development for and with Aboriginal and Torres Strait Islander communities. Within the implementation science field, Michell’s work has focused on the implementation of evidence-based programs in relation to child wellbeing and family support in Aboriginal and Torres Strait Islander communities. Michell has written articles and a book chapter related to program implementation and working effectively with Aboriginal and Torres Strait Islander families and communities. Michell received the Triple P Practitioner of the Year Award in 2014 for her outstanding engagement of regional Queensland communities, her achievements in using Triple P to help reunify families whose children have been removed, and for her work in normalising parenting support for Indigenous families.

Emily Carter is a Gooniyandi and Kija Woman from the Fitzroy Valley in the Kimberley Region of Western Australia and the CEO of Marninwarntikura Women’s Resource Centre (MWRC). MWRC was created to empower women and includes a Women’s Shelter, Family Violence Prevention and Legal Unit, Early Childhood Learning Unit, Marnin Studio social business hub, and the Marulu Team, who lead the community response to foetal alcohol spectrum disorder (FASD). Emily was one of two women who led the alcohol restrictions in her community and was an investigator on the first Australian population-based prevalence study of FASD. Since then, she has successfully helped MWRC secure two National Health and Medical Research Council grants and other philanthropic funds to continue developing the evidence on how to address FASD and early life trauma. Throughout her career, Emily has been an advocate for women’s issues, Aboriginal community empowerment and Indigenous recognition, and a promoter of trauma-informed practice and care. She is regularly invited to present and share her knowledge to government, at conferences, and as a key witness at Inquiries into FASD, mental health, suicide, and education in remote Aboriginal communities.

Jadnah Davies is a Gooniyandi woman from Fitzroy Crossing. Jadnah’s connection to the Fitzroy Valley is through her maternal grandmother, a Gooniyandi woman who was a part of the stolen generation. She completed her secondary school in Fitzroy Crossing and supplemented it through Distance Education. She is managing the Marulu team at Marninwarntikura Women’s Resource Centre in Fitzroy Crossing, an initiative that supports families to address the complex needs of children and young people living with FASD and early life trauma (ELT). The Marulu team at the centre are working to strengthen the capacity of all those working with children and families with FASD and complex trauma. For much of the past eight years, Jadnah’s work has been focused on raising awareness of FASD and the impacts of trauma and ELT, sharing what she has learnt with Fitzroy Valley communities. Jadnah co-led the Jandu Yani U – Positive Parenting Program research in the Fitzroy Valley, which was a response to the Lililwan Project – Fetal Alcohol Spectrum Disorders (FASD) Prevalence Study (Australia’s first study into the prevalence of FASD). Jadnah continues to actively drive work in the Fitzroy Valley, creating innovative solutions that provide families with access to services and resources that have not previously existed. Driven by her commitment that Our families deserve the best possible supports and services available in the Country, Jadnah is very passionate about the work she does and feels privileged to work with such amazing and inspiring people, knowing that the work being done will benefit her community and future generations.
Sue Thomas is currently the Strategic Lead at Marninwarntikura Women’s Resource Centre (MWRC) in Fitzroy Crossing, Western Australia. Sue is an experienced teacher, school principal and researcher. She has extensive experience working in the Kimberley region of Western Australia and has led numerous projects and education initiatives over the past three decades. After leaving the Kimberleys to work on national education projects for Education Services Australia (ESA) and the Stronger Smarter Institute (SSI), Sue returned to the Kimberleys as the awareness of FASD and its effects was becoming apparent through the Lililwan Project – Fetal Alcohol Spectrum Disorders (FASD) Prevalence Study conducted in the Fitzroy Valley.

Responding to the need to equip educators working with children with FASD and complex needs, she co-wrote with Jane Weston *FASD and Complex Trauma – A Resource for Educators*. Since 2015, Sue has worked closely with community-led strategies developed by the MWRC.

Karen Turner is a clinical psychologist and research academic. She is Deputy Director (Programs and Innovation) at the Parenting and Family Support Centre. Her research activity concerns the nature, causes, prevention and treatment of behavioural and emotional problems in children. She is a foundational co-author of the Triple P – Positive Parenting Program and has published 13 professional manuals, 20 parent workbooks and tip sheet series, and 14 DVD programs, which are currently being used in 27 countries, in 20 languages. She has also co-written television segments and four interactive online parenting programs. She has clinical and research experience relating to the prevention and treatment of a variety of childhood behavioural and emotional problems, including work with feeding disorders, pain syndromes and conduct problems. Her doctoral research focused on the development and evaluation of brief primary care interventions in the prevention of behaviour disorders in children, and the subsequent dissemination of these interventions to the professional community.

Christine Brown Wilson is a Registered Nurse with an international research profile in Ageing and Dementia, focusing on translating research into residential aged care and family caregiving in the community. Christine’s methodological expertise lies in qualitative methodologies, including working collaboratively with older people, including people with dementia, their families and staff to improve practice. She has established links with industry and service user organisations in the UK, enabling older people, family caregivers and staff to be active participants in the research process. Christine is currently working with interdisciplinary research teams in Australia, UK and Europe. Christine is passionate about translating research into practice and works with colleagues across the Higher Education sector and in practice to achieve this. Her current work is focusing on the development of educational online resources to support staff in residential care relating to sexuality and intimacy needs and promoting effective end-of-life care involving family caregivers. Christine supports organisations and teams in changing practice through quality improvement workshops and developing relationship-centred services in dementia care both in the UK and Singapore. Christine is a Principal Fellow of the Higher Education Academy, UK. She is also a founding member of the UK-based National Care Homes Research and Development Forum. She has over 50 research outputs in peer-reviewed journals, books and book chapters with 250 scopus citations on 19 of these.
Matthew Sanders is a Professor of Clinical Psychology and Director of the Parenting and Family Support Centre at the University of Queensland. He has been a consulting professor at The University of Manchester, a visiting professor at the University of South Carolina, and has held adjunct professorships at Glasgow Caledonian University and The University of Auckland. As the founder of the Triple P-Positive Parenting Program, Professor Sanders is considered a world leader in the development, implementation, evaluation and dissemination of population-based approaches to parenting and family interventions. Triple P is currently in use in 35 countries worldwide. Professor Sanders’ work has been widely recognised by his peers, as reflected a number of prestigious awards. He is a Fellow of the Academy of Social Sciences in Australia, the Australian Psychological Society, the New Zealand Psychological Society and the Australian Association for Cognitive Behaviour Therapy. He received a Queensland Greats Award from the Queensland Government in 2018.
There is a global agenda to improve the reach of evidence-based practices (EBPs). EBPs are based on the best available evidence, delivered from a foundation of informed experience, and conducted within specific values and cultural context (APA Presidential Task Force on Evidence-Based Practice, 2006). As is made clear through the definition of EBPs by the APA (American Psychological Association), culture and cultural context are essential for understanding best practice methods for interventions. Various researchers have also highlighted the need to deliver EBPs that are culturally relevant and responsive to the needs of diverse client populations (APA Presidential Task Force on Evidence-Based Practice, 2006; Chen, Kaddad, & Balzano, 2008; National Child Traumatic Stress Network, 2008). Further, Whaley and Davis (2007) argue that cultural competence and evidence-based practice are complementary and serve to enhance the strength of interventions. Others explain that the implementation process of these EBPs (whether culturally informed or not) can shape whether intended outcomes are actually achieved (Aarons & Palinkas, 2007; Allen, Brownson, Duggan, Stamatakis, & Erwin, 2012; Crea, Crampton, Abramson-Madden, & Usher, 2008; Fixsen, Naoon, Blasé, Friedman, & Wallace, 2005; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Palinkas & Aarons, 2009).

With advances in knowledge regarding EBPs, there have been significant attempts to culturally adapt and implement interventions broadly across different cultural groups (Baumann et al., 2015). Scholars tend to focus on adapting EBPs to culture with the premise that to be engaging and effective, an intervention should be responsive to the cultural practices and worldview of the target population (Domenech Rodríguez & Bernal, 2012). Existing empirical literature often emphasises how implementation of culturally adapted EBPs positively impacts engagement and thus outcomes (e.g., Cabassa & Baumann, 2013). However, many studies do not offer detailed information of the adaptation and implementation processes (Domenech Rodríguez, Baumann, & Schwartz, 2011; Griner & Smith, 2006; Huey & Polo, 2008). In McIlduff, Brown Wilson, Turner, and Sanders (2020), those studies that detail the adaptation and implementation processes were systematically reviewed and similarities of these processes detailed. However, overall, the development and implementation of culturally responsive EBPs has been slow and cumbersome (Kendall & Beidas, 2007).

The primary objective of disseminating EBPs is to provide interventions with proven success to populations in need of effective services. However, the way in which this is done is continuously up for debate, and unfortunately, the research-to-practice gap is large, especially for minority groups, despite the adaptation and implementation models that already exist. The Model of Engaging Communities Collaboratively (MECC) has been developed with the integration of adaptation and implementation sciences to support the sustainable implementation of interventions in minority groups, with particular emphasis on Indigenous peoples. This article strives to explore adaptation and implementation approaches based on current knowledge from the field, while also integrating international Indigenous feedback on the theoretical processes of adaptation, research and community implementation. The MECC combines theories from implementation science, cultural adaptation and engagement in order to provide a model of collaborative engagement that meets the needs of Indigenous populations and which is generalisable to a range of EBPs disseminated in these populations globally.

**Theoretical background**

Adaptations of EBPs are perceived as helping to bridge, if not narrow, the efficacy-effectiveness gap by combining fidelity and effectiveness of rigorously studied interventions (Castro, Barrera, & Martinez, 2004; Keller et al., 2005). However, adaptation of EBPs often occurs to improve the compatibility of a program to a new setting or to increase the cultural appropriateness of a program, without adequate underlying theory of evaluation (Carvalho et al., 2013). Recent meta-
analyses and systematic reviews have provided strong support for cultural adaptations (Benish, Quintana, & Wampold, 2011; T. Smith, Rodriguez, & Bernal, 2011). However, as explained in McIlduff et al. (2020), the adaptation and implementation processes are often not explained in detail to understand processes that work well.

Successful dissemination of any EBP depends not only on the intervention’s effectiveness or appropriate adaptation but also on how it is implemented and sustained in the community (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). The optimal outcome of implementation is full, effective, and sustained use of innovation in practice (Fixsen, Blase, Metz, & Van Dyke, 2015) and has become a field of study in itself. Implementation science is the link between efficacy research and service delivery in the field. It is a blend of three strands of knowledge development (Fixsen et al., 2015). First, diffusion theory, as described by Rogers (1995), has been generalised to a wide variety of fields and is the best known of the three strands. Diffusion consists of taking additional steps early in the process of implementing an intervention to increase its chances of being noticed, positively perceived, and adopted and implemented in an effort to successfully bridging the research-to-practice chasm. The second strand is dissemination theories, which typically focus on helping practitioners, managers, policy makers and others understand research findings so they may be more likely to use those findings in their work (Brownson et al., 2012). The third and most recent strand is implementation theory, which is based on evaluations of attempts to use innovations in practice. Applied research data are accumulating rapidly as common language, common measures and guiding frameworks become available (Meyers, Durlak, & Wandersman, 2012). The field is on the verge of a unifying theory of implementation that includes diffusion and dissemination along with active approaches to moving science into service in order to realise the effectiveness of EBPs (Fixsen et al., 2015).

Despite the implementation of a growing number of EBPs, there is much to learn about effectively implementing programs in community settings (McWilliam, Brown, Sanders, & Jones, 2016). There is often a gap between how EBPs are intended to be delivered and how they are actually delivered in real-world settings, which presents a major challenge. Without high-quality implementation, EBPs are unlikely to achieve their intended effects in practice (Fixsen et al., 2005). Poor or incomplete implementation may lead to core elements being left out, the intervention being used inconsistently, the wrong intervention being used (Damschroder & Hagedorn, 2011), or inferior or even detrimental outcomes (Washington State Institute for Public Policy, 2004).

Since populations are heterogeneous, adaptation and implementation need to be carefully considered and selected by way of close collaboration with the population in which they will be used. When considering the history, culture and social context of a population, it is imperative to understand their perspective on the problem and possible solutions, which involves a collaborative engagement and consultation process. A collaborative stance can be communicated by an acknowledgement that population members are experts on their culture and context, and valuing local knowledge is a necessary step in building the trust, respect and openness that this process requires (Bernal, Bonilla, & Domenech Rodriguez, 2012). This is of particular importance when working with Indigenous communities due to historical colonisation and the complex relationships many of these populations have had with outside services. In particular, mainstream EBPs have had slow uptake in Indigenous communities (Kumpfer, Magalhães, & Xie, 2012), indicating a need for cognisance of the effects of historical colonisation and assimilation policies (Benzies, 2014). An awareness of the social and political factors that influence Indigenous populations is imperative to the success of interventions (Ball & George, 2007).
However, research has not historically served Indigenous people well; this has generally been the case of Indigenous people in colonised nations globally, which is why there is often mistrust of researchers, particularly when research is disengaged from the needs of the community and its benefit is minimal or not apparent to the community (Bainbridge et al., 2015; L. T. Smith, 1999). The Lowitja Institute proposes a need for a power shift in research activity that entails the active incorporation of Indigenous perspectives in collaborative research endeavours, and that Indigenous people become direct and active participants in research and in the identification of community relevant research priorities, and in the planning for and sharing of meaningful findings (Bainbridge et al., 2015). Additionally, in recognition of the intergenerational cycles of adversity and trauma that continue to afflict Indigenous populations, the Australian National Framework proposed a collaborative approach that incorporates holistic and culturally sensitive responses that are informed by Indigenous-led and community-identified solutions.

Indigenous people globally have articulated a preference for knowledge development and research processes that are linked to the betterment of their communities (McHugh & Barlow, 2012). For decades, Indigenous peoples have critiqued research practices. Failure on the part of researchers to substantially address these criticisms has been directly attributed to continuing poor outcomes from Indigenous health research (Bainbridge et al., 2015). Participatory Action Research (PAR) approaches can address these critics and appropriately refine, implement and evaluate interventions in Indigenous populations (Benzies, 2014).

**Research aims**

In an effort to reconcile and respect Indigenous knowledges and effective methodologies expressed by the Lowitja Institute, the Cooperative Research Centre for Aboriginal Health (CRCAH), the Australian National Framework, Bainbridge (2015), Benzies (2014) and Quinn (2007), this study aimed to develop an effective holistic model of engaging collaboratively with communities. A Community Based Participatory Research (CBPR) approach was utilised, which emphasises collaborative partnerships between community members, community organisations, service providers and researchers to generate knowledge and solve local problems (Mendenhall & Doherty, 2005; Minkler & Wallerstein, 2003). Due to the highly collaborative nature of the method, more people involved often equates to more potential solutions and support for the implementation of these solutions. CBPR challenges the status quo as its participants engage actively in the process, subsequently resulting in the empowering of communities in the processes of change (Berge, Mendenhall, & Doherty, 2009). As Watkins and Shulman (2008) emphasise, projects are rarely driven by communities; however, this could possibly be the reason why regardless of decades of research and public investment, research has led to limited positive change in Indigenous communities. While CBPR can be costly and take more time, the potential benefits outweigh the costs when it results in community-led program uptake and sustainability. The MECC aims to be an effective way to address the research to practice gap and to bridge the fields of cultural adaptation and implementation.

**Development of the Model of Engaging Communities Collaboratively (MECC)**

The MECC development process was initially theoretically based on what is known about implementation processes, and the similarities and strengths of cultural adaptation approaches reviewed in McIlduff et al. (2020). The framing of most approaches included initial information gathering, adaptation of an intervention, and piloting the adaptation. While there was much variability in these stages and beyond, the MECC development took into account strengths within each stage across the approaches and integrated them into one model, which further includes implementation strategies, results interpretation and dissemination approval. The MECC, with its
collaborative and consultative nature, aims to promote an effective multi-way knowledge sharing through CBPR methods in an effort to assist populations in effecting positive change, ideally resulting in capacity building and empowerment within a population. The processes of engagement, consultation and collaboration with communities and their self-identified needs is foundational to the MECC aim. The MECC aims to dissolve the stereotype of research in or on Indigenous peoples and to promote a norm of research with Indigenous peoples.

The MECC includes the multiple aspects of engagement, consultation, collaboration, adaptation, implementation and two-way information sharing to provide a comprehensive model. To our knowledge, there has been no model that has amalgamated similarities and strengths of the many extant models while working collaboratively with a purposive sample of members of the target population to revise the definitions and practicality of the model processes. The MECC is depicted in Figure 1.

Figure 1. Model of Engaging Communities Collaboratively (MECC).
Method

The MECC development has been influenced by prior adaptation studies, adaptation and implementation science theories, as well as a purposive sample (N = 117, 114 Indigenous and 3 non-Indigenous) of international feedback from Indigenous people and non-Indigenous people who work within Indigenous communities in Australia, Canada, the United States, Panama and New Zealand. Gender identity and demographic information was not queried or recorded, due to the fact that often any identifying information gathered from these populations makes them less open to talking with a researcher, given their complex experiences, past and present, with research. We only collected their contact details for further communication and especially for dissemination approval.

This feedback was audio recorded in focus groups or interviews where appropriate, and recorded via note taking where voice recordings were deemed inappropriate. Recordings were transcribed and all data analysed in NVivo using editing analysis style coding common in grounded hermeneutic research. Following the analysis, participants were given the opportunity to give input into the data interpretation and approval for dissemination of findings.

Review of previous adaptation studies and adaptation and implementation theories

Cultural adaptation and implementation (CA&I) approaches offer perspectives that vary considerably in scope, breadth and depth. As Bernal and Domenech Rodríguez (2012) point out, it becomes powerful to note the similarities across approaches, theories and successful project guidelines and what these similarities may represent in terms of concurrent validity. While there are many CA&I approaches, evidence suggests that theory is drastically underutilised (Colquhoun et al., 2013). CA&I processes are inextricably connected, and both processes should be planned simultaneously. The following is not a comprehensive list of approaches, simply ones that have had significant influence in the development of the MECC. Cultural adaptation approaches vary, but most include initial information gathering, adaptation, implementation and evaluation (McIllduff et al., 2020). Implementation approaches also often vary; however, most consist of exploration, installation, initial implementation and sustained implementation (Aarons, Hurlburt, & McCue Horwitz, 2011; Fixsen et al., 2005).

There are two types of cultural adaptation approaches: those that inform modification to the content of the intervention and those that inform the process of adaptation (Baumann et al., 2015). The Ecological Validity Model (EVM; Bernal et al., 1995) and the Social Contextual Model (SCM; Sorensen, Barbeau, Hunt, & Emmons, 2004) inform what to adapt in the delivery and content of the intervention. The second set of approaches focuses on the process of adaptation, outlining decisions about when to adapt and the process of adaptation. A number of influential approaches fall into this category: Cultural Adaptation Process Model (CAPM; Domenech Rodriguez & Wieling, 2005), Heuristic Framework (Barrera & Castro, 2006), Map of the Adaptation Process (MAP; McKleroy et al., 2006), Kumpfer Guidelines (Kumpfer, Pinyuchon, de Melo, & Whiteside, 2008), and Formative Method of Adapting Psychotherapies (FMAP; Hwang, 2009). At least one known Indigenous model exists that suggests how programs may be culturally integrated: Johnson and Witko’s (2006) Model of Native Healing. This approach was initially utilised to integrate cultural sensitivity into the original theoretical MECC, which was further informed by an Australian Indigenous liaison process, international Indigenous feedback, and working with an Indigenous community to make further amendments.

Influential implementation approaches on the development of the MECC are the Active Implementation Frameworks (Blasé et al., 2009; Fixsen et al., 2005) and Triple P Implementation Frameworks...
Framework (McWilliam et al., 2016). These particular approaches were chosen due to their integration of various implementation approaches across the field as well as Fixsen et al.’s (2005) broad awareness of context influence on effective implementation and sustainability.

The development of the MECC considered the three stages of cultural adaptation that were similar among the influential approaches, and six aspects of the influential implementation approaches. Additions of engagement to establish population concerns and solutions, and CBPR and cyclical processes to synthesise the cultural sensitivity imperative to the Native Healing model for Indigenous populations were also integrated.

**Indigenous liaison**

Consultation with an Indigenous liaison person occurred over an extended period. To understand theoretical findings within the lived reality of Indigenous communities in Australia, the realities and perspectives from which Indigenous Australians view the world, research, and non-Indigenous peoples were shared. She reviewed and critiqued the original theoretical development of the MECC, making clear the need for practicality of the process checklists.

**International feedback from First Nations communities**

In 2016, following the presentation of the theoretical and Indigenous liaison-informed version of the MECC at the Helping Families Change Conference in Canada, a round-table discussion was held to obtain feedback from various Indigenous attendees from Canada, America, New Zealand and Panama about experiences of the implementation of Triple P and other programs in their communities. Discussion was around challenges and barriers of working within Indigenous communities, working with non-Indigenous peoples and organisations, and understanding of the vast differences of Indigenous and non-Indigenous worldviews among many Indigenous communities. This feedback and insight into ways in which different groups were working further informed the MECC checklists, and reinforced the overall theory of the MECC. Over 4 years, the first author lived and worked with Aboriginal Australian communities for 5–7 months each year, utilising, evaluating and further revising the MECC. In 2018, the first author visited tribes in California, Oregon and Washington in the United States, and tribes in British Columbia and Alberta in Canada, seeking further guidance on ways in which non-Indigenous people can work effectively with Indigenous people towards positive changes, and listened to the barriers and challenges for the various tribes. On this trip, engagement and consultation was done with tribal elders, leaders, service providers, those entrusted with tribal historical knowledge within museums or cultural centres, and youth. Information was gathered through story telling (deep listening), presentations given to the author by tribe members, walking and talking on their country, and informal interviews. Questions broached were: “What initiatives have worked for your community in the past and what is still working now?”; “Why do you think they have been successful for your community?”; “What would you say is the best way outsiders can work with your community to bring interventions you feel you need?”; and “What are some challenges in working with outsiders or non-Indigenous people when bringing interventions to your community?”

**Results**

Figure 2 demonstrates the process of the development of the MECC. Each component is detailed below with the awareness that none of the processes occur in any particular sequence, are certainly not linear, and several aspects may occur at the same time.
Figure 2. Model development process.

Cultural context

Cultural context is an imperative part of ensuring a deeper understanding of the culture in which an intervention is being adapted and implemented. Bernal et al. (2009) suggest that cultural adaptation involves the systematic modification of EBPs by considering language, culture and context in order to be congruent with the population's cultural backgrounds and lived experience. The outer layer (or macro-level) of the MECC represents a sample of societal dynamics that influence the population as a whole and need to be considered when working with any community.

All of the cultural adaptation and implementation approaches utilised for the development of the MECC explicitly recognise the importance of context in the success of their processes. Particularly, Johnson and Witko (2006) explain that what is crucial is the integration or adaptation of Western evidence-based approaches with Indigenous values and traditions, and incorporating the cultural context of the individual, family and community while also considering the multilevel effects of colonisation, resulting trauma (current and intergenerational), levels of acculturation and worldviews. Fixsen et al.'s (2005) implementation approach also recognises context with regard to the significance of changes that may need to be made to the implementation of an intervention.

From the international Indigenous feedback, one person commented how misunderstanding of culture and the impacts of complex histories makes it hard to work with outsiders, stating, “Working with people or funders from outside the ‘rez’ [reservation] life is difficult as they just don’t understand … often believing they know what we need or how we should do things” (Participant 1 [P1], Interview [Int.]). Another emphasised the solution to this misunderstanding by stating, “Number one important thing too is to recognise where the story starts … we have to start the story with the colonisation and assimilation” (P5, Focus Group [FG]). Engagement with a broad sample of the population leads to a better perspective of where their story starts and their history, and gives a better perspective on the cultural context and complexities in Indigenous communities.
Process foundations

Given Indigenous peoples’ critiques of research practices and their focus on ethical positions and tangible benefits that are meaningful within their communities, and their historical experiences with research and researchers having given research itself a bad name, it is necessary to strive for the five foundations of the MECC process: relationship building, mutual respect, mutual trust, mutual benefit, and empowerment. Culturally adapting and implementing interventions collaboratively with Indigenous peoples takes time. As Bainbridge et al. (2015) explain, it is the lack of appreciation of the time needed to build these foundations that has been directly contributing to poor outcomes from Indigenous research. The effectiveness of the intervention and sustainability within the population need to be guided by the priorities of Indigenous co-investigators, and at the core of Indigenous priorities are relationships (BigFoot & Funderburk, 2011). Johnson and Witko (2006) state that both flexibility and trustworthiness are the most important and successful characteristics of those working with Indigenous peoples. The concept of flexibility in both the intervention adaptation and implementation processes was also emphasised in the Indigenous liaison process.

These process foundations were supported by international feedback. One person spoke about the time and flexibility of building these foundations and the benefit they have on outcomes, stating, “Unrealistic timeframes … It takes time to develop strong and trusting relationships with people and doing that builds the foundation for much more robust research or programs that are likely to succeed” (P7, FG). They went on to explain:

We will take as long as is needed and sometimes this does not work well within the research methods. But it works for us. Never rush us, or we feel like you do not really care and we will not be bothered either … Understand us, get to know us, involve us, before you tell us and we tell you what works best for us.

Another person spoke of their own experience working within a tribe that is not their own, stating:

Being a part of the community, involved, has helped me to be adopted by them and able to do my job, in regards to creating effective social systems—actually listening to them to learn, and putting their traditional ways or experiences in front of mine and my own thought of the way things should be. (P6, Int.)

Collaborative cultural adaptation and implementation

The inner cog of the MECC (see Figure 1) represents the process of change through consultation, engagement and collaboration with community to adapt an intervention to meet local concerns appropriately and effectively. This process is not linear, and similar to influential approaches, there are cyclical processes within the adaptation and feedback aspects of this model. This process includes: community identified concerns and solutions; community consultation; engagement of locals, leaders and organisations; identification of cultural traditions, values and beliefs; collaborative adaptation; implementation; assessment of ecological fit and sustainability; and seeking dissemination approval from the participating population. Detailed checklists have been developed for each component to make the process practical and user-friendly, as advised by Indigenous consultation.

Community-identified concerns and solutions

Indigenous knowledge systems are key to making any intervention in a community effective and sustainable, emphasising the importance of the concerns and potential solutions to be community identified. While acknowledging Indigenous knowledge and local expertise is important, it is just as
vital at the beginning of engaging with communities that the researchers or “outsiders” be as transparent as possible to ensure that there are no misunderstandings down the line (Spoon, 2014).

While only one cultural adaptation approach specified the necessity of the community identifying the concerns and possible solutions (McKleroy et al., 2006), Hwang (2009) mentioned utilising qualitative approaches of information sharing to support the identification of the concerns and solutions, along with information from experience, knowledge and the literature. Fixsen et al. (2005) mention in their implementation approach that the adoption of an intervention is decided based on formal and informal criteria developed by community and the intervention disseminators.

From an Indigenous perspective, there is a real need for “outsiders” not to assume they have a full appreciation of the concerns and solutions. A non-Indigenous person with experience working with Indigenous communities spoke of working collaboratively with the communities and following their lead in knowing what is needed, saying, “One thing I learned is never assume … You don’t build something and say here it is, you find out what people want and then give it to them and tell them that it is available” (P2, FG). See Table 1 for the Community Identified Concerns and Solutions Checklist.

Table 1. Community Identified Concerns and Solutions Checklist

<table>
<thead>
<tr>
<th>Community Identified Concerns and Solutions</th>
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<tbody>
<tr>
<td>Transparency and deep listening</td>
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<tr>
<td>Establish community concern</td>
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<tr>
<td>Establish understanding of community solution ideas and preferred</td>
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<td>Establish understanding and fit of possible programs</td>
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<tr>
<td>Identify local partners</td>
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<td>Identify local partner organisations</td>
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<tr>
<td>Multidirectional sharing/knowledge transfer</td>
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<tr>
<td>Networking with community to get a holistic understanding of concern</td>
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<tr>
<td>Establish best practice for collaboration with community</td>
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<td>Organise collaborative meeting(s)</td>
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Collaborative community consultation

Consultative methods engage ethical questions regarding the objectives of proposed research projects and the outcomes that result. Spoon (2014) found that consultative and collaborative methods create more local involvement and ownership of the research; further, they provide opportunities to overcome internally and externally imposed boundaries that affect who participates in research projects and what they share, especially in Western societies where Indigenous peoples live alongside non-Indigenous populations.

Consultation and relationship building are imperative given the history of Indigenous peoples. Research requires a sense of safety and trust to be established within each interaction throughout the course of the intervention. This establishment will allow for the Indigenous peoples involved in the adaptation process and intervention to contribute with genuine participation, buy-in and engagement. Key concerns found when implementing programs in Indigenous communities have been engagement, retention and follow-through (Stocks, Mares, & Robinson, 2012). Consultation
within communities seeks to address these key concerns by empowering Indigenous peoples to be the change agents in their own communities and become co-solution-finders and co-researchers, as is foundational to CBPR methodology.

All cultural adaptation processes used in the development of the MECC recognised the importance of consultation, although there was some variance as to how this was done. Both implementation frameworks describe the consultation process in detail, although they have different titles for this process to support the implementation process. The Collaborative Community Consultation Checklist is shown in Table 2.

The need for collaborative community consultation was also supported through international Indigenous feedback. One person shared their successful experiences working with Indigenous populations, saying, “Certainly not setting up something without consulting, we get people from community and elders and permission” (P2, FG). Another elaborated on the difficulty of working with researchers, service providers or government agencies while emphasising transparency saying:

Deadlines, code of ethics, reporting processes, this all inhibits working well together. It is a continual balancing act, a case of the demands and upholding the ethics and expectations of each party in the research relationship. It is a case of having to meet dual accountabilities, for example the academic, research, science community and the Indigenous community. Building strong foundations with clear expectations is so important as the values held by the partners may be very different. These need to be considered for research with Indigenous communities. (P7, Int.)

Table 2. Collaborative Community Consultation Checklist

<table>
<thead>
<tr>
<th>Collaborative Community Consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency and deep listening</td>
</tr>
<tr>
<td>Flexibility</td>
</tr>
<tr>
<td>Build relationships, establish power equality in decision making</td>
</tr>
<tr>
<td>Community meeting(s) or forum(s)</td>
</tr>
<tr>
<td>Multidirectional sharing/knowledge transfer</td>
</tr>
<tr>
<td>Establish mutual benefit of intervention</td>
</tr>
<tr>
<td>Determine community workforce</td>
</tr>
<tr>
<td>Determine intervention capacity to meet community concern</td>
</tr>
<tr>
<td>Identify existing services</td>
</tr>
<tr>
<td>Establish the type of data to collect</td>
</tr>
<tr>
<td>Establish community acceptance of partnership and project</td>
</tr>
<tr>
<td>Seek and share literature and expert-based understanding of concern</td>
</tr>
<tr>
<td>Discuss future sustainability</td>
</tr>
<tr>
<td>Assess fit and mutual benefit of intervention</td>
</tr>
<tr>
<td>Determine community capacity building opportunities</td>
</tr>
</tbody>
</table>
Engagement of locals, leaders and organisations

Following initial meetings with the leaders and organisations to identify concerns and solution options, various community and organisation meetings are also recommended by Maiter, Simich, Jacobson, and Wise (2008) to acquire different perspectives since homogeneity cannot be assumed within any population; see Engagement of Locals, Leaders and Organisations Checklist in Table 3.

These consultation and engagement meetings can work towards bridging the research-practice gap and promote wider dissemination of EBPs by capitalising on local organisation and member knowledges and support to ensure program fit and sustainability (Lee, Altschul, & Mowbray, 2008).

Both consultation and engagement with the wider community require the researcher to be flexible. Domenech Rodriguez and Wieling (2005) talk about engagement of the community in a noncolonising, collaborative way, and of being part of the community and not just “detached scientists”, so as to be seen from a more positive perspective. Hwang (2009) describes engagement as an attempt to broaden consultation and understanding of the heterogeneity of the population though qualitative methods with various portions of the population.

International feedback supports the process of engaging various levels of the population. One respondent stated:

Key people within the organisations who are trusted become champions of the program … these people then need to be kept on as champions if the program is to remain sustainable in the community … Where possible, the involvement of an Indigenous service provider that is trusted by the people, who also have the organisational grunt is necessary to enable any research, program promotion, delivery of service etc. to take place. This is critical to engagement. (P7, FG)

Another emphasised the importance of engaging with a broader sample of the population when speaking about no population being homogeneous, and suggesting a more wide-reaching approach to services:

Take the branch off the tree and only give that one branch care and attention and then when it is flourishing, we take it back to the tree and see it dwindle as the tree has not been treated with the same care, and it’s withering or diseased. (P5, Int.)

This analogy referred to the various areas affecting a population’s wellbeing.

Table 3. Engagement of Locals, Leaders and Organisations Checklist

<table>
<thead>
<tr>
<th>Engagement of Locals, Leaders and Organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency and deep listening</td>
</tr>
<tr>
<td>Flexibility</td>
</tr>
<tr>
<td>Establish understanding of the intervention and seek feedback</td>
</tr>
<tr>
<td>Multidirectional sharing/knowledge transfer</td>
</tr>
<tr>
<td>Identify changes needed to support effective dissemination</td>
</tr>
<tr>
<td>Confirm any training required for workforce to support intervention</td>
</tr>
<tr>
<td>Identify possible challenges to dissemination and possible solutions</td>
</tr>
<tr>
<td>Establish understanding and approval/mutual benefit of the data to be</td>
</tr>
<tr>
<td>Network with community to get an understanding of context</td>
</tr>
</tbody>
</table>
Identify cultural traditions, values and beliefs

The identification of relevant cultural traditions, values and beliefs can only begin effectively through the previously described consultation and engagement with community members, organisations and leaders. A cultural advisory group should be formed through which members can share their cultural knowledge in relation to the proposed solution, collaboratively assisting with decision making, recommendations and solution building (Maciver et al., 2013).

The Healing Foundation (2015) explains that by reconnecting with knowledge systems and practices, culture can help to heal pain and create opportunities for harmony and balance that allow Indigenous people to participate more fully in family and community life in healthy, safe and confident ways.

Two cultural adaptation approaches list various areas to consider for adaptation to make an intervention more culturally relevant: language, persons, metaphors, content, concepts, goals, methods and context (EVM); context is then expounded by the SCM by considering individual, interpersonal, organisational, community and societal factors in the context for which the intervention is being adapted to mitigate barriers to success. Johnson (2006) emphasises the heterogeneity of Indigenous peoples and the need to identify values, traditions, beliefs and norms for each, and not assuming a pan-Indigenous approach. Johnson (2006) also affirms that integration of traditional practices and strengths also lends to the healing process for many Indigenous peoples as it restores harmony and balance that has been disrupted by colonisation, and increases self and cultural pride. Table 4 shows the Identify Relevant Cultural Traditions, Values and Beliefs Checklist.

One participant spoke of the importance of culture in all that is done throughout community, saying “Embedding of our culture, our values and our aspirations is encouraged, promoted, supported and endorsed the inclusion of our values and aspirations in everything we do is essential” (P6, FG).

Table 4. Identify Relevant Cultural Traditions, Values and Beliefs Checklist

<table>
<thead>
<tr>
<th>Identify Cultural Traditions, Values and Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency and deep listening</td>
</tr>
<tr>
<td>Identify changes to intervention and dissemination required to ensure cultural appropriateness and integration</td>
</tr>
<tr>
<td>Multidirectional sharing/knowledge transfer</td>
</tr>
<tr>
<td>Identify cultural strengths to enhance intervention and training</td>
</tr>
<tr>
<td>Utilise cultural knowledge to strengthen relevance to community</td>
</tr>
<tr>
<td>Recognition of historical influence and trauma that may effect</td>
</tr>
<tr>
<td>Establish who should collect data and how</td>
</tr>
</tbody>
</table>

Collaborative adaptation

Part of the adaptation process is deciding whether the intervention will serve the concerns of the population, which should be decided during the previously explained community and leader consultations, and engagement. Lee and colleagues (2008) recommend that decisions regarding how to adapt interventions should evolve from collaborative efforts that link individuals, organisations and their knowledge; local facilitator knowledge in particular should be a critical aspect of program adaptation and implementation (Keller, Borke, Yovsi, Lohaus, & Jensen, 2005).
While cultural adaptations need to be sensitive to the target population’s needs, it is also imperative to keep a balance between adaptation and fidelity of the EBP; if there is significant adaptation needed such as deleting core elements, it is possible that the EBP is not a fit for the target population.

Cultural adaptation approaches describe adaptation in various ways, and many describe the cyclical process of adaptation → implementation → feedback or evaluation → further adaptation. Fixsen et al.’s (2005) implementation approach explains that required changes may be more or less dramatic for individuals or organisations, dependent on the context. The Collaborative Adaptation Check is shown in Table 5.

International Indigenous feedback supported the process of collaborative adaptation with each Indigenous community. One respondent who works with a different tribe than her own explained her approach to collaboration, stating:

My main concern is that the community is heard, even though I am from a different tribe and have ideas of how things should go, I might think I know, but the locals’ perspectives always need to be put first and built upon, they know better. (P3, Int.)

Table 5. Collaborative Adaptation Checklist

<table>
<thead>
<tr>
<th>Collaborative Adaptation</th>
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</thead>
<tbody>
<tr>
<td>Transparency and deep listening</td>
</tr>
<tr>
<td>Multidirectional sharing/knowledge transfer</td>
</tr>
<tr>
<td>Flexibility</td>
</tr>
<tr>
<td>Establish what aspects of the intervention are required for fidelity</td>
</tr>
<tr>
<td>Establish what aspects need to be adapted (process, content, context)</td>
</tr>
<tr>
<td>Establish cultural strengths and knowledge to be used to ensure cultural and</td>
</tr>
<tr>
<td>Close documentation of adaptations made</td>
</tr>
</tbody>
</table>

Implementation

Ideally, local community members who have been a part of the consultation and collaboration process will be the ones implementing the intervention within their community. This ensures sustainability and community capacity building, as well as ownership and buy-in of those teaching other community members, and engagement of community members due to the comfort of learning from their own people. Stocks et al. (2012) found that the employment of local community members enhanced accessibility and engagement of the population with the program.

The process of implementation is detailed by each cultural adaptation approach. Most detail a pilot or small-scale implementation of the adapted intervention first to allow for observation or feedback on further adaptation required, and then implementation on a larger scale in a cyclical pattern as necessary. Fixsen et al. (2005) describe how initial implementation often occurs when confidence in the decision to adopt the intervention is being tested, in which many implementation attempts end due to multiple overwhelming factors for facilitators and organisations. The Implementation Checklist is shown in Table 6.

Through international Indigenous feedback, the sentiment of locals being the ones to implement the intervention was consistent across tribes and countries—one respondent stated clearly in a
round-table discussion, “It helps if they are Indigenous … they are better received if they can relate to their own” (P7, FG); the others wholeheartedly agreed.

Table 6. Implementation Checklist

<table>
<thead>
<tr>
<th>Implementation</th>
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</thead>
<tbody>
<tr>
<td>Ideally by locals to promote sustainability and community capacity building</td>
</tr>
<tr>
<td>Ensure supervision and/or peer support of local facilitators to enable feedback</td>
</tr>
<tr>
<td>Ensure follow-up support of local facilitators</td>
</tr>
<tr>
<td>Implement the first adaptation on a small scale (pilot) to discover any further adaptations required through observation and/or facilitator and participant</td>
</tr>
</tbody>
</table>

Determine ecological fit and sustainability

Tibbits, Bumbarger, Kyler, and Perkins (2010) point out that the lack of motivation, which leads to lack of sustainability of interventions, may stem from several sources, including community perceptions about the need for the intervention, frontline implementers’ perception of the intervention’s potential effectiveness, and the alignment of intervention with the goals of the organisation or community. Johnson and Witko (2006) describe that being aware of cultural norms when assessing ecological fit is essential. Both implementation frameworks explain the determination of ecological fit and sustainability; however, both have also addressed sustainability earlier in the consultation process.

International Indigenous feedback encouraged the assessment of fit and sustainability and how this assessment is key to developing more relevant and effective interventions (see Table 7, Determine Ecological Fit and Sustainability Checklist). One respondent stated, “Making sure that there is a systematic follow-up to the opportunity and to get back in those communities to meet up with those people and work out some of the problems arising and work out what needs to happen next” (P2, Int.).

Table 7. Determine Ecological Fit and Sustainability Checklist

<table>
<thead>
<tr>
<th>Determine Ecological Fit and Sustainability</th>
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</thead>
<tbody>
<tr>
<td>Establish if the goals of community and organisations were met</td>
</tr>
<tr>
<td>Key organisation and community leaders to observe/participate in intervention to allow for informed feedback for fit and sustainability</td>
</tr>
<tr>
<td>Seek overall community attitude to intervention and dissemination</td>
</tr>
<tr>
<td>Seek multilevel feedback to make additional adaptation as necessary</td>
</tr>
<tr>
<td>Ensure authorship of population members on any publications</td>
</tr>
</tbody>
</table>

Dissemination approval

The “harvesting” of Indigenous knowledges has gone on for a very long time and has given research a bad name in Indigenous cultures (L. T. Smith, 1999), as this knowledge has at times been expressed in ways that are not respectful, appropriate or even accurate to what was shared with the researchers. The process of disseminating results to those involved holds a space in many ethical expectations; however, the way this is done with Indigenous communities is not necessarily the same as in Westernised populations. In the effort to work with Indigenous populations more ethically and appropriately, the culturally appropriate dissemination of results
must also be considered (see Table 8, Dissemination Approval Checklist). If results are effectively shared with those local advisers, co-researchers and practitioners involved in the project, the interpretation of the knowledge can be checked for accuracy and can be disseminated appropriately, allowing the community to have ownership of their knowledge. Little mention is given to the sensitive checking and dissemination of results in the cultural adaptation or implementation literature. Knowledge exchange and translation is an imperative aspect of the research process that must also consider the ethical, cultural and social ramifications when working with Indigenous peoples.

The information gathered during visits with tribes through states and provinces in America and Canada made it clear that there needed to be a final aspect added to the MECC process that did not come about through the literature review—dissemination approval. Over time, stories have been shared about how researchers have been disrespectful in their interpretation and dissemination of results or their statements to media, and it was not uncommon to hear about researchers taking what they had learned from working with Indigenous communities and utilising it out of context, misconstruing it, or even using it to advance their own agendas. As one respondent stated, "They [referring to non-Indigenous peoples] keep harvesting knowledge without planting any seeds, it's not right" (P5, Int.).

Table 8. Dissemination Approval Checklist

<table>
<thead>
<tr>
<th>Dissemination Approval</th>
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</thead>
<tbody>
<tr>
<td>Share findings with population involved</td>
</tr>
<tr>
<td>Seek confirmation of interpretation accuracy</td>
</tr>
<tr>
<td>Seek guidance and approval about where the findings are shared and next steps</td>
</tr>
<tr>
<td>Refer to the Lowitja Institute for knowledge exchange translation</td>
</tr>
</tbody>
</table>

Conclusions and implications

The strength and integrity of the MECC lies within its foundational methodology of CBPR, allowing for an equalised power structure, its integration of implementation science, cultural adaptation, engagement and international feedback, but most importantly in its approval to be disseminated by those who contributed their knowledges in a way that was acceptable and appropriate. This approval was given over an extended period of time as each participant and/or community leader reviewed the way in which their knowledges were shared within this article. Participants and leaders were contacted via email, social media, phone calls and in person and were given a chance to change or remove any parts of their knowledges shared. For those who were not able to be contacted for approval, out of respect, their statements or knowledges were removed. This was a much more difficult process with focus group participants; however, with the majority of Indigenous participants’ approval, the focus group data was included, given that the knowledges shared were not individually identifiable.

While there have been many approaches developed, the MECC is the only model that considers all of these processes and the practicality of ground-level feedback as one unified approach towards more effective results and greater sustainability. The MECC is also the only approach that focuses on community engagement as well as consultation and collaboration in the initial stages of adaptation and implementation efforts. Due to the ground-level feedback, the MECC is the only approach that includes a dissemination approval step to ensure appropriate interpretation of
results to mitigate further misuse of Indigenous knowledges shared. This model is a tool that has the practicality and flexibility to be utilised by researchers, service providers and Indigenous communities alike to ensure appropriate ways of working with Indigenous populations when considering intervention needs of a population. As will be seen in further publications, the MECC checklists have underpinned a community-led program implementation project and have been drafted into a Partnership Agreement template adopted by one participating Indigenous organisation.
References


Bainbridge, R., Tsey, K., McCalman, J., Kinchin, I., Saunders, V., Watkin Lui, F., ... Lawson, K. D. (2015) No one’s discussing the elephant in the room: contemplating questions of research impact and benefit in Aboriginal and Torres Strait Islander Australian health research. *BMC Public Health, 15*(1), 696. doi:10.1186/s12889-015-2052-3


