

Review of Culturally-Adapted Cognitive Behavioral Therapy Interventions for North American Indigenous Children and Youth

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Abstract

Cognitive Behavioral Therapy (CBT) is a widely used and established evidence-based intervention; however the extension of CBT to specific cultural groups may require adaptations to align content and treatment process to cultural beliefs and values. The highly structured and often written nature of CBT might make it less acceptable to Indigenous people. A scoping review of culturally adapted CBT interventions for Indigenous people in North America was conducted. In total, 10 studies were identified that assessed or discussed interventions for trauma, substance use, and internalizing disorders. Studies included diverse Indigenous groups, tended toward small sample sizes, and varied in the level of cultural adaptation. Most included surface level changes, yet comparably fewer studies incorporated deeper structural changes. Overall, reductions in symptoms were demonstrated across interventions targeting various mental health concerns. Methodological limitations within studies inhibit the ability to determine if cultural adaptations led to improved outcomes in comparison to non-adapted interventions.

Keywords: CBT; Indigenous; Youth; Child

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The use of Cognitive Behavioral Therapy (CBT) to address child and adolescent mental health needs has grown considerably in the past several decades. Practitioners have available to them a wide range of CBT-based interventions for youth mental health disorders (Weisz & Kazdin, 2017). This growth in CBT approaches has been driven, in part, by expectations within the mental health field that interventions are evidence-based, using treatment principals and procedures that are effective (Levant 2005). Hofmann, Asnaani, Vonk, Sawyer, and Fang (2012) recently completed a review of all available meta-analyses examining the efficacy of CBT interventions, finding positive outcomes across youth and adults. These strong findings have re-fueled the popularity of this intervention model within the mental health field.

The appeal of CBT has led to the broad application of such strategies to a wide range of population groups, including those from diverse cultural backgrounds. This, however, has raised questions about whether adaptations of CBT strategies are needed for specific cultural groups. The need to examine this issue stems from the fact that CBT approaches were first developed within a Western culture. For example, CBT concepts of “schemas”, “automatic thoughts”, and “distortions” may readily translate across some cultural groups, but may require important modifications to make them understandable and acceptable within other cultures (Dobson, 2018). This may be particularly relevant given the high premium placed on autonomy and self-direction within Western cultures, values which may be less esteemed in cultures that include a collectivist orientation.

The issue of cultural adaptation has been a long-standing question among those in the CBT field. Hays (1995) first identified the importance of giving attention to cultural influences when using CBT strategies with minority cultures. More recently, Dobson (2018) described the significant gains made in translating CBT approaches across various cultural groups, such as the demonstrated construct validity of using cognitive treatment models for depression within Arabic cultures (Beshai, Dobson, Adel, & Hanna, 2016). Other examples of such cross-cultural research have included the adaptation of CBT for traumatized refugees and ethnic minority groups (Hinton, Rivera, Hofmann, Barlow, & Otto, 2012). Cross-cultural research of this nature is necessary, given the need to identify when CBT approaches can be transported to various cultural groups with minimal modifications or whether more substantial adaptations are required.

An area of CBT treatment research that has received limited attention has been the efficacy and effectiveness

of CBT interventions with Indigenous children and adolescents. Developing culturally safe and appropriate interventions for Indigenous youth is needed, given the history of assimilation policies and practices experienced by Indigenous peoples (Truth and Reconciliation Commission, 2015). These assimilation practices have resulted in intergenerational trauma, social marginalization, loss of cultural values, and disruption of cultural identity. Directing non-Indigenous cultural values onto Indigenous clients through CBT treatment approaches, without consideration of necessary cultural adaptations, has the potential to only reinforce and perpetuate the historical assimilation practices which Indigenous peoples have experienced. Importantly, there may be limitations to CBT which make this modality inappropriate for Indigenous communities. For example, CBT is a highly structured intervention model which can rely heavily on verbal and written expression. Lacking are strategies that rely on traditional relational and narrative learning, or community-based healing opportunities (Nowrouzi, Manassis, Jones, Bobinski, & Mushquash, 2015).

High rates of mental health needs have been consistently identified in Indigenous youth (Kirmayer, Brass, & Tait, 2000; Templeton, Durksen, & Zhang, 2012). Lehti, Niemela, Hoven, Mandell, and Sourander (2009) reported suicide rates 2 to 10 times higher for Indigenous youth in comparison to the general population. This heightened risk for mental health difficulties is attributed, in part, to a majority (78%) of youth experiencing at least one Adverse Childhood Event (ACE), such as emotional/physical/sexual abuse or neglect, witnessing of intimate partner violence, and/or other traumatic events (Brockie, Dana-Sacco, Wallen, Wilcox, & Campbell, 2015). Within the Indigenous community, the addition of one ACE is associated with a 37% increase in risk of suicide, 51% increase in poly drug use, 55% increase in PTSD symptoms, and 57% increase in depression (Brockie et al., 2015). It has been demonstrated that within the three-year span from pre-adolescence (10-12 years) to adolescence (12-15 years), internalizing and externalizing mental health needs for Indigenous youth doubled, while substance use disorders increased eightfold (Whitbeck, Yu, Hoyt, & Walls, 2008). The high rate of ACEs experienced by Indigenous youth highlight the urgency in developing interventions that sufficiently address their mental health needs within a culturally sensitive and safe manner (Whitbeck et al., 2008).

The use of CBT in Indigenous communities has been under-studied but is emerging as a potential area for evidence-based practice (Nowrouzi et al., 2015). The connection between mental, emotional, and physical

functioning within CBT does align to some degree with traditional Indigenous views of health being holistic (Nowrouzi et al., 2015; BigFoot & Schmidt, 2010). BigFoot and Schmidt (2010) suggest that many aspects of CBT are consistent with core components of American Indian and Alaskan Native traditional teaching and beliefs. This includes treatment components such as the provision of support by caregivers, listening to children, sharing experiences through storytelling or ceremony, identifying the relationship between emotions, beliefs and behaviors, and expressing emotions (BigFoot & Schmidt, 2010). While there is a need to closely examine how CBT may require adaptations to be appropriately used with Indigenous youth, there is also evidence to suggest that CBT can be effectively used with this population (e.g., Goodkind, LaNoue, & Milford, 2010; Listug-Lunde, Vogeltanz-Holm, & Collins, 2013; Morsette et al., 2012).

There are a number of available frameworks which could be used to help guide cultural adaptations of CBT for Indigenous peoples (Bartlett, Marshall, & Marshall, 2012; Iwama, Marshall, Marshall, & Bartlett, 2009; Kilcullen, Swinbourne, & Cadet-James, 2016; Martin, 2012; Rowan, et al., 2015). One such framework, called “Two-Eyed” Seeing, is an Indigenous form of pedagogy, research, and practice which incorporates both Indigenous and Western knowledge in an integrative manner (Iwama, et al., 2009). As stated by the spiritual leader, healer, and chief Charles Labrador of Acadia First Nation in Nova Scotia, “Go into the forest, you see the birch, maple, and pine. Look underground and all those trees are holding hands. We as people must do the same” (Kierans, 2003).. By incorporating each “eye”, science is able to weave knowledge from both Indigenous and Western perspectives together, where each strand is necessary. In this respect, Two-Eyed Seeing is an integrative scientific approach which allows for the process of decolonization (Iwama, et al., 2009). It is through Two-Eyed Seeing that science, and mental health interventions in this case, can become culturally adapted and appropriately modified for Indigenous youth. Bartlett, Marshall, and Marshall (2012) highlight lessons learned when implementing a Two-Eyed Seeing approach, which has been applied to a diverse range of scientific initiatives, including health (Martin, 2012) and addictions (Rowan, et al., 2015), and could be helpful in building culturally appropriate CBT interventions for Indigenous youth.

To begin the work of developing culturally- and contextually-appropriate CBT interventions for Indigenous youth, it is necessary to first understand the current research which has used and/or adapted CBT interventions for this population group. The following review seeks to address this need in the literature and

treatment field. The current paper aims to review culturally adapted CBT interventions with North American Indigenous children and adolescents. Within this paper, the term “Indigenous” refers to the international groups of people who are the original or first inhabitants of the land. The term “First Nation” (FN) refers to members of an Indigenous band or First Nation in Canada (Policy Research Initiative, 2003; Poirier, 2015). The term “Alaskan Native” (AN) refers to Indigenous populations from the arctic region of Alaska, USA, and “American Indian” (AI) will be used to describe descendants of Indigenous populations within the remaining states, or AI/AN combined.

Method

A scoping review was conducted to identify research that evaluated cognitive behavioral interventions for Indigenous children and adolescents within North America. Two academic databases (Academic Search Premiere and PsychInfo) were searched using the following terms: “cognitive behavioral therapy”, “behavioral therapy”, “cognitive therapy”, “Indigenous”, “Aboriginal”, “First Nation”, “Métis”, “American Indian”, “Alaskan Native”, and “Native North American”. Studies were included if they described the use of an intervention that included aspects of cognitive and/or behavioral therapy in combination with any form of adaptation made for the Indigenous population. In total, 654 titles were reviewed, with 10 articles meeting the inclusion criteria.

Review of the Literature

Few studies have adapted CBT protocols for Indigenous children or adolescents within North America. In total, 10 studies were included in this review (Table I). These studies ranged from descriptions of adaptations and protocols to evaluations of protocols which included school-based prevention programs as well as community-based clinical treatments. The most frequent adaptations of CBT were intended to target trauma symptoms ($n = 4$), followed by substance use or prevention ($n = 3$), and internalizing disorders such as depression or anxiety symptoms ($n = 3$). Most studies (e.g. Goodkind, LaNoue, & Milford, 2010; Listug-Lunde, Vogeltanz-Holm, & Collins, 2013; Miller et al., 2011; Morsette et. al., 2009; Morsette, van den Pol, Schuldberg, Swaney, & Stolle, 2012) used weekly or biweekly sessions for delivery, although two studies employed intensive, multi-day off-site workshops (Donovan et al., 2015; Patten et. al., 2012). Furthermore, all studies used group interventions, with only some using individual and/or parent sessions as well (e.g. Goodkind et al., 2010; Novins et. al., 2012). Specific client characteristics are presented in Table I for each study.

Adaptations to protocols. Whaley and Davis (2007) define cultural adaptation as “changes in the approach to service delivery, in the nature of the therapeutic relationship, or in components of the treatment itself to accommodate the cultural beliefs, attitudes, and behaviors of the target population” (pg. 571). These changes can take many different forms, including structural changes, such as the language it is delivered in, the clinicians’ type of clothing, and observable aspects (Castro, 2010). In contrast, deep structure changes include modifications that are based on more deeply rooted cultural beliefs, values, histories, and socio-political contexts (Castro, 2010). A summary of each level of adaptation for all included studies is presented in Table II.

Trauma symptom interventions. The most frequent use of CBT adaptations was for trauma-related symptoms. In total, four articles provided information about this type of cultural adaptation, although outcome information was available for three. Overall, trauma-related symptoms decreased in response to the CBT interventions (see Table I for more detail).

The protocol developed by Morsette et al. (2009) is a school-based CBT treatment targeted at trauma symptoms as well as depressive symptoms which has been adapted for Native Americans in Montana. It is a 10-week group-based intervention that engages children from grades 4 to 6 in relaxation training techniques, labelling feelings, identifying maladaptive thoughts, and reduction of emotional and behavioral avoidance (Morsette et al., 2009). To reduce avoidance, children are taught how to develop an exposure hierarchy, engage in those exposures, develop a trauma narrative, and learn problem solving as well as relapse prevention skills (Morsette et al., 2009). Morsette et al. (2009) incorporated Indigenous culture into the treatment protocol through consultation with community members about the appropriateness of case examples, incorporating local histories and stories, adjusting linguistic concepts, and incorporating Indigenous spiritual practices (Table II). Decreases in trauma and depressive symptoms were demonstrated (Table I) and treatment providers felt comfortable with their ability to implement and use it effectively (Morsette et al., 2009).

Another example of a trauma-based CBT protocol that was adapted is presented in Morsette et al. (2012). This protocol was also a 10-session group-based intervention (Morsette et al., 2012). Over the course of treatment, 4th to 6th graders in a northwestern USA community were taught about stress and trauma reactions, safety planning, how to rate their stress using a feelings thermometer,

relaxation and reciprocal inhibition training, restructuring cognitions, graduate in-vivo and imaginal exposure, peer mediated coping skills, and problem solving. The authors also noted that it was possible to have individual and parent sessions as needed. The cultural adaptations included in the Morsette et al. (2012) intervention were limited in description due to ethical concerns over disclosing proprietary cultural information (summarized in Table II). Aspects that were discussed were the inclusion of Elders and spiritual leaders in the trauma and healing components of intervention, as well as the use of cultural and spiritual ceremonies to promote healing. The large decrease in trauma-related symptoms and marginal decreases in depressive symptoms can be seen in Table I.

The trauma-focused CBT intervention developed by Goodkind et al. (2010) demonstrates numerous similarities to the protocols developed by Morsette et al. (2009) and Morsette et al. (2012). The authors describe six techniques that are used to make maladaptive thoughts and behaviors more functional, including psychoeducation, relaxation training, cognitive therapy (i.e. cognitive reappraisal & restructuring), in-vivo exposure, stress or trauma exposure, and social problem solving (Goodkind et al., 2010, pg. 4). Similar to Morsette et al. (2009), the intervention was delivered in a school setting with AI students from the southwestern USA, with 10 weekly meetings. Extensive cultural adaptations were made based on suggestions from a cultural consultation team (summarized in Table II). These changes included changing examples that were inadvertently offensive and/or based on main-stream conceptualizations, including stories and teachings from the culture, including culturally specific questions into assessment procedures (e.g., the acceptability of talking about people after they were deceased), including more humour, and adjusting practices to align with culturally appropriate interpersonal relations (Goodkind et al., 2010). Youth and parents were also provided with a voluntary opportunity to be referred to a traditional healer or spiritual advisor in conjunction to the intervention. Reductions in trauma-related symptoms, as well as depressive symptoms, were demonstrated (see Table I).

The trauma-targeted intervention described by BigFoot and Schmidt (2010) is somewhat dissimilar to Morsette et al. (2009) and Goodkind et al. (2010). BigFoot and Schmidt (2010) embedded the concept of Two-Eyed Seeing in the development of a program called “Honouring Children, Mending the Circle” (HC-MC) that was developed for AI/AN children. Within this intervention, greater emphasis was placed on incorporating the Indigenous worldview and cultural teachings than was emphasized in the previous protocols.

However, in terms of the CBT techniques that were included in the protocol, many similarities with previously mentioned studies emerged. Within this intervention, relaxation training was provided, as were cognitive reappraisal and gradual exposure with the development of a trauma-narrative (BigFoot & Schmidt, 2010). CBT practices that were consistent with cultural views and practices (e.g., social support, oral narratives, behavioral principles) were incorporated into the intervention. Other components of standard CBT, such as the cognitive triangle between thoughts, feelings, and emotions, were further expanded upon, being reflected in the concept of a circle to depict cultural views of balance in mental, spiritual, physical, and emotional health. HC-MC also incorporated key aspects of Indigenous cultures that are common in many communities, such as all things being interconnected, the spiritual nature in all things, and existence as dynamic. Outcome information for this intervention was not available.

Substance use interventions. Outcomes for interventions targeting substance use prevention or treatment were available from two out of the three studies identified. These studies included community-based workshops targeting tobacco cessation (Patten et al., 2012) in AN youth, a community-based treatment for substance use in a residential treatment facility (Novins et al. 2012), as well as a prevention program for generalized substances for AI youth living within a reservation-based community (Donovan et al., 2015). Overall, positive effects were seen from both interventions.

Within the Patten and colleagues' (2012) tobacco cessation program, an emphasis was placed on social cognitive principles which aimed to enhance participants' sense of self-efficacy. The protocol was based on the view that having the support of family, friends, and peers is important for tobacco cessation (Patten et al., 2012). Thus, a youth advisory group from Bethel, Alaska was developed, which included people who self-identified as wanting to help others quit smoking, were not currently using tobacco, alcohol, or drugs, and were in good standing at school. Of the six youth who were included in the advisory panel, three had a history of tobacco use. This group reviewed and provided feedback on the intervention material.

The Patten et al. (2012) protocol included CBT strategies such as coping skills aimed at managing negative moods or social cues, psychoeducation about the long-term health effects of tobacco use, enhancement of self-efficacy, as well as opportunities to engage in role plays of high-risk situations. The protocol also provided culturally-based interventions through storytelling and

role-modelling from community members and Elders that had previously engaged in tobacco use. During the first implementation of the protocol, adolescents from the Yukon-Kuskokwim Delta region of western Alaska attended a 2-day, 1-evening workshop outside of their community. However, participants viewed this workshop as being too rushed, so the researchers extended the workshop to be a 3-day, 2-evening workshop outside of the community. Having the workshops outside of the community was considered essential, as it provided an opportunity for the adolescents to be surrounded by like-minded and supportive peers.

Novins et al. (2012) integrated a number of different evidence-based treatments that are commonly used in combination for substance use treatment. The "Walking On" protocol that was developed incorporates motivational interviewing strategies, contingency management, CBT, as well as cultural elements (Novins et al., 2012). This intervention integrated evidence-based strategies that were consistent with cultural beliefs and practices from the Cherokee Nation, such as the use of narratives to discuss key ideas (Table II). This process was facilitated by the contributions of a steering committee which included a cultural expert and Elder among other community members. The intervention was premised on a set of key concepts, including guiding principles (e.g., strength-based, community of healing, flexible, etc.), healing being a journey, and an intervention-specific Medicine Wheel (comprised of belief, courage, trust, and hope). This approach includes three phases of treatment that are each three months in length and comprised of: finding the winding road (treatment engagement, abstinence from substances, & relapse prevention), staying on the path (independence of applying these skills), and widening the road (time management and mentoring others). Within each session, a teaching is presented (with 15 of these in total) as well as a ceremony (Novins et al., 2012). Outcome data were not available for this program.

The substance use prevention program that was developed by Donovan et al. (2015) demonstrated a similar emphasis on community, family, and peer support as was emphasized in the Patten et. al.(2012) intervention. During the community assessment phase, key stakeholders, community members, and a community advisory board from the Suquamish Tribe and Port Gamble S'Klallam Tribes emphasized the need for adolescents to become more connected to the community, especially extended family, as well as connecting with specific mentors and traditional practices (Donovan et al., 2015). An iterative review of the intervention, "A Canoe Journey", was undertaken to identify the core components

to be retained and develop culturally-grounded content to include in the adapted intervention (summarized in Table II). Based on recommendations from these advisors, a protocol was developed that teaches participants about traditional beliefs, self-knowledge, emotional regulation through self-talk, setting goals, problem solving, effective listening and communication skills, as well as relapse prevention strategies (Healing of the Canoe Training Center, 2018).

Originally, the researchers intended to develop an intervention that was administered to middle-school students over the course of 10 weekly sessions (Donovan et al., 2015). However, the implementation of the protocol coincided with the development of a new high school, and the advisory group suggested transforming the protocol into a curriculum-based intervention that was delivered over the course of the year. The implementation of this intervention is referred to as the “Suquamish high school” in Table I. In the following year, the researchers were required to find an alternative medium for delivery as the school was no longer available, thus the researchers used workshops for the delivery. Although the foundation for this intervention included concepts that are found in many AI communities (e.g., connection to community, history of assimilation, etc.) there were also specific placeholders where community stories and examples can be integrated to make it culturally appropriate in a variety of communities. Reductions in substance use were demonstrated, as were increases in hope, optimism, and self-efficacy (see Table I for more detailed results).

Internalizing disorder interventions. Outcome information was found for three studies involving adaptations of CBT protocols for internalizing disorders, such as depression and anxiety. These included two treatments, one for depression (Listug-Lunde et al., 2013) and one for anxiety (Nowrouzi et al., 2015), as well as a prevention program for anxiety (Miller et al., 2011). The delivery of these interventions was completed either through the school (Listug-Lunde et al., 2013; Miller et al., 2011) or community-based services (Nowrouzi et al., 2015).

Listug-Lunde and colleagues (2013) adapted the “Coping with Depression – Adolescent” (CWDA) protocol for use in an AI middle school setting in a Northern Plains community. Although the authors do not provide detailed information about the specific CBT strategies and skills used, they do state that the intervention targets cognitive, self-control, behavioral, interpersonal, and social skills over 13 sessions that are 35 to 40 minutes long and are delivered twice per week. Cultural adaptations (Table II) were developed in consultation with educators, school

and community mental health professionals, as well as an expert in AI mental health concerns. These adapted components included offering the program during the school day, providing more culturally relevant examples and role play situations, and discussing the effect of culture on some skills (e.g., eye contact, assertiveness, etc.). The authors compared this adapted intervention to treatment as usual (TAU; see Table I). The intervention displayed reductions in depressive scores, and anxiety scores that were close to a significant reduction. Furthermore, the adolescents endorsed the acceptability, with students recalling 75% of the topics presented and rating 50% of the sessions as at least somewhat helpful.

Nowrouzi, et al. (2015) compared the outcome of a culturally adapted protocol delivered by a First Nation service provider to Indigenous children in northwestern Ontario to a non-adapted version of the “Coping Cat” protocol delivered in a non-Indigenous community organization. Potential cultural adaptations were reviewed through weekly discussion among clinicians, although these were not described within the study. This article primarily focused on the clinicians’ ratings of their ability to use the intervention. Results indicated that there were no differences in anxiety or depression scores between outcomes from the First Nation or non-Indigenous agency.

A school-based prevention program for anxiety was developed and evaluated by Miller and colleagues (2011) in four schools within western Canada. The authors describe that they adapted the “FRIENDS for Life” protocol, which includes seven specific sessions on: (1) feeling worried, (2) relaxing and feeling good, (3) inner thoughts, (4) exploring plans of action, (5) nice work reward yourself, (6) don’t forget to practice these new skills, (7) and smile, stay cool, and calm (Miller et al., 2011). Miller et al. (2011) worked with consultants from the Indigenous school board to enhance the program through the integration of culturally relevant examples, increased use of storytelling, the inclusion of an animal metaphor, culturally informed exercises (e.g., creation of a medicine pouch), as well as conceptual models that aligned with culture (i.e., circle of support and FRIENDS wheel modelled after a Medicine Wheel). Although the sample for this study included non-Indigenous participants (64%; see Table I), the results demonstrated that the reduction of anxiety symptoms was similar for Indigenous and non-Indigenous students. Overall, reductions in anxiety symptoms were only seen for children who had elevated initial anxiety scores.

Discussion

The reviewed studies demonstrate that CBT is amenable to cultural adaptations for Indigenous people within North America. There are few studies (10 identified) that have examined these adaptations, although initial support has been demonstrated. While reductions in symptoms have been found for prevention and treatment interventions, the robustness of findings for prevention is limited. Within this review, two studies developed preventative interventions, including one for anxiety and another for substance use. There were some demonstrated reductions in symptoms, although the studies did not demonstrate reductions in all targeted symptoms, or within all groups that received the intervention. In contrast, the interventions for trauma-related symptoms showed much more promise. Across trauma-related interventions, the CBT techniques remained similar. All of the interventions included relaxation training, cognitive restructuring, gradual exposure hierarchies, in-vivo and imaginal exposure, and the development of a trauma narrative. The level of cultural adaptations for trauma interventions demonstrates the level of diversity in all forms of the adaptations, ranging from minimal surface level changes to deep structural changes. Thus, despite varying levels of adaptation, they have similar underlying cognitive and behavioral mechanisms.

In terms of cultural adaptations, variation was observed across studies, with some basing the construction of the intervention in what could be described as a Two-Eyed Seeing approach and others making adjustments to examples and language. This variation reflects the publication of studies before or during the emergence of the best-practices of Two-Eyed Seeing, which was largely adopted in 2011 by the Canadian Institutes of Health Research (Institute of Health Economics & Canadian Institute of Health Research, Institute of Aboriginal Peoples' Health, 2011). Nevertheless, the incorporation of surface level changes was demonstrated in nearly all of the protocols (Table II). These types of adaptations often included changing the wording that was used or specific examples used to illustrate a point. However, most of the interventions also demonstrated deeper changes that incorporated traditional cultural values, beliefs, or practices. Half of the studies (BigFoot & Schmidt, 2010; Donovan et al., 2015; Miller et al., 2011; Novins et al., 2012; Patten et al., 2009) engaged community members and consultants in the development of their protocols. These consultations ensured that the treatment was grounded in community needs, was relevant to the community context, and accounted for regional variances in culture (Health Canada, 2015).

Eight of the 10 interventions (see Table II) embedded traditional concepts, beliefs, or values into their

adaptations. Including these aspects of culture into treatment likely makes the intervention more acceptable and relatable for clients. A frequently used concept was the Medicine Wheel, which emphasizes that health and wellness stems from a balance between physical, emotional, mental, and spiritual domains (Health Canada, 2015). Other commonly occurring concepts included the importance of creating connections to community, culture, and tradition. Engaging in ceremony throughout the treatment process was also frequently employed. Although some authors were reluctant to divulge specific information due to a history of appropriation of cultural practices (Morsette et al., 2012), many others provided detailed descriptions of these ceremonies (e.g. Novins et al., 2010). Although there are commonalities among these adaptations, the level of adaptation of an intervention is not a one-size-fits-all solution, where there is a specific number of changes that need to take place in order to achieve a quality intervention. Ideally, interventions are developed and tailored toward specific community needs and preferences for what is suitable in a certain location (Health Canada, 2015).

Limitations of Existing Research and Future Directions

The studies presented in this review demonstrate the initial stages of a research field. They are working to integrate theories, Indigenous knowledge, culture, and evidence into a meaningful and culturally appropriate practice. Thus, refinement of methodology is the next step in the process of developing these treatments. In particular, the lack of control or comparison group is not ideal. A control group was utilized in only one of the studies reviewed (Listug-Lunde et al., 2013). This comparison of a culturally adapted CBT protocol provided information that suggests benefits may be seen beyond treatment as usual (Listug-Lunde et al., 2013). However, it did not demonstrate if adapting the protocol increased the effectiveness or acceptability of the intervention. Two studies included non-Indigenous children in the sample (Morsette et al., 2009; Morsette et al., 2012), and one study provided a comparison of FN children to non-Indigenous children (Nowrouzi et al., 2015). The findings from these studies suggest that adapted interventions work just as well for non-Indigenous as Indigenous children, although the small samples from these studies precludes a firm conclusion.

Internalizing disorders such as anxiety and depression may not be as heavily influenced by cultural adaptations as trauma-related and substance use symptoms. The studies presented here, although preliminary and limited in number, demonstrated that engaging in treatment as usual may be just as beneficial for these disorders.

However, it is possible that the types of adaptations for these interventions may need to be adjusted in order to make them more appropriate. Further research can aim to clarify this relationship.

The number of adapted interventions is small, and many reflect community-specific changes that are not relevant outside of the context in which they are developed. Although this limits the generalizability of the adaptations outside of the communities, it also reflects ideal standards of meeting community-specific needs (Health Canada, 2015). The sample sizes of many of the studies are very small; four out of ten studies had fewer than 15 participants. This limits the ability to conduct sophisticated statistical analyses that can inform the development of services by informing what works for whom, and when. While an essential start, additional studies incorporating higher numbers of participants in the adapted interventions is a necessary next step. The development of community-specific interventions demonstrates a responsiveness to the diversity found in Indigenous communities across North America, although this also constrains the results of the studies to a specific population. Furthermore, the number of Indigenous communities represents a small proportion of all Indigenous communities within Canada and the USA, as there are over 600 First Nation communities in Canada alone (National Household Survey, 2013). Future research can work to determine what levels of adaptation (e.g., surface level, structural, etc.) are associated with improved outcomes and acceptability. Research such as this can potentially increase the generalizability of adapted interventions. Furthermore, the majority of studies were conducted within Indigenous communities or schools that are on or near reserves. Thus, this limited research base is further restricted for Indigenous people living in urban areas.

The databases included in the search provide access to a breadth of journal articles, however they did not capture all of the literature or research published in grey literature reports. Indeed, the authors are aware of some additional work in culturally-adapted CBT interventions for Indigenous youth. For example, Mushquash, Comeau, and Stewart (2007) developed a culturally-adapted early alcohol intervention using Two-Eyed Seeing principles. This intervention approach demonstrated reductions in risky drinking (i.e., decreases in binge drinking, frequency and quantity of alcohol use, and alcohol-related problems) and reduced marijuana use among participants when compared to youth who did not participate in the intervention (Mushquash et al., 2007). There is also limited grey literature on cultural adaptations of highly effective CBT-based interventions used with Indigenous

youth (e.g., “Stop Now and Plan” program; National Crime Prevention Centre, 2013).

Future researchers should seek to demonstrate if adapting CBT interventions increases effectiveness, acceptance, attendance, or participation, above-and-beyond established evidence-based CBT protocols. One draw of developing culturally adapted interventions is increasing the acceptability of the intervention for the intended recipient. The interventions reviewed did not include an assessment of this influential factor. In making an intervention more aligned with a client’s worldview, and therefore increasing acceptability, it is possible that enhanced engagement and greater therapeutic alliance can be developed. Therapeutic alliance refers to the sense of collaboration and consensus between the client and clinician, as well as an agreement on the intended goals of therapy and the methods used to achieve these goals (Bordin, 1994). Thus, if an intervention acknowledges a cultural view of developing wellness between multiple aspects of one’s life, the goals developed between the client and clinician may be more appropriate. Future research should aim to identify the interconnections among various forms of adaptation and subsequent effects on acceptance, engagement, and therapeutic alliance. In the end, understanding how thoughts, feelings, and behaviours are connected, or learning new ways of managing difficulties, is not likely specific to non-Indigenous concepts. What requires additional work is ensuring that concepts and approaches are adapted collaboratively with Indigenous people in a manner that is relevant to culture and context.

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Appendix A

Table I: Characteristics of Reviewed CBT Articles with Indigenous Youth

Authors	Presenting Problem	Implementation factors	Participants	Measures Used	Summary of Outcomes
Trauma Interventions					
BigFoot & Schmidt (2010)	Trauma Symptoms	Community health	AI/AN youth Case example: 14 - year-old AI female	HCMC Component Worksheet Healing Practices Worksheet Note: no results provided	Description of program and case example
Goodkind, LaNoue, & Milford (2010)	Trauma Symptoms	School	Age: 12 – 15	Childhood PTSD Symptom Scale (CPSS)	Trauma symptoms decreased pre- to post treatment
		10 weekly meetings	(<i>M</i> = 13.39)		<ul style="list-style-type: none"> Continued to decrease at follow-up
		1-2 individual meetings	<i>n</i> = 24	Children’s Depression Inventory (CDI)	Anxiety decreased pre- to post
		2 parent meetings	3 southwestern USA schools in AI communities	MASC	<ul style="list-style-type: none"> Increased slightly at follow-up but below pre-intervention
1 teacher meeting			Children’s Coping Strategies Checklist	Depression marginally decreased pre- to post-	
		Group Intervention			<ul style="list-style-type: none"> Increased at follow-up
					Avoidant coping decreased pre- to post-
Morsette et al. (2009)	Trauma Symptoms	Schools	11 – 12 years-old <i>n</i> = 4	Life Events Scale	Trauma and depressive symptoms decreased for 3/4
		10 weeks	48 screened	Child PTSD Symptom Scale	<ul style="list-style-type: none"> Post-intervention scores decreased by 1/2 to 2/3
		Small groups	75% NA; 17% NA & Other; 8% NA & Caucasian; & 4% unspecified	Children’s Depression Inventory	

Authors	Presenting Problem	Implementation factors	Participants	Measures Used	Summary of Outcomes
			Montana: school attendees on or near a reservation		Treatment providers happy with intervention & able to use it effectively
Morsette et al. (2012)	Trauma Symptoms	6 schools across 3 AI communities 10 sessions Group intervention	10.6 – 15.8 years old ($M = 12.7, SD = 1.3$) $n = 43$ Attending school on or near a reservation in NW USA 83.7% NA; 14.0% Caucasian; 2.3% Hispanic; 4.7% Other	Life Events Scale Child PTSD Symptom Scale Children’s Depression Inventory	Trauma symptoms: <ul style="list-style-type: none"> • Large decrease • Reductions observed from screening to pre-treatment • Pre- to post-treatment reductions larger than screening to pre-treatment Depressive symptoms nearly significant reduction pre- to post
Substance Use Interventions					
Donovan et al. (2015)	Substance Abuse Prevention	Suquamish high school: Year-long curriculum taught over 1.5 hours/day Suquamish/PGST workshop: Series of 3 workshops, 2 ½- to 3-days long, occurring within 3 months, and off-reserve	Suquamish high school: $n = 8$ 10 th – 12 th grade Suquamish/PGST workshop: $n = 23$ 9 th – 12 th grade Squamish and Port Gamble S’Klallam Tribes	Author created scales for: <ul style="list-style-type: none"> • Cultural affiliation and participation in activities • Hope, optimism, & self-efficacy • Substance abuse knowledge Washington State Healthy Youth Survey (Substance use)	Suquamish high school: <ul style="list-style-type: none"> • Hope/optimism/self-efficacy increased from pre-to post-intervention • Remained reduced at 4-month follow-up • Substance use decreased from pre- to post-intervention but was only clinically different at 4-month follow-up Suquamish/PGST Workshops: <ul style="list-style-type: none"> • Increase in hope/ optimism/ self-efficacy and reduction in substance use associated with the intervention from pre- to post & 4-month follow-up

Authors	Presenting Problem	Implementation factors	Participants	Measures Used	Summary of Outcomes
Novins et al. (2012)	Substance Use	Residential Treatment 9 months 15 teachings for each of 3 phases Combination of weekly circles and family/individual sessions	Native American Adolescents	-	Knowledge about drug abuse significant at 4-month follow-up Description of program and development
Patten et al. (2012)	Tobacco	Community-based Workshops Full day workshops Pilot 1: 2 days and 1 evening Pilot 2: 3 days and 2 evenings Group intervention	Age: 12 – 17 years old Yup'ik or Cup'ik (Alaskan Native) <i>n</i> = 9 in Pilot 1 <i>n</i> = 12 in Pilot 2	Eligibility assessments: <ul style="list-style-type: none">Center for Epidemiological Studies Depression ScaleFagerström Tolerance QuestionnaireFagerström Tolerance Questionnaire – Smokeless Tobacco	Pilot 1: <ul style="list-style-type: none">1/9 (11%) remained abstinent from tobacco 7 days after treatment0/9 (0%) abstinent after 30 days Pilot 2: <ul style="list-style-type: none">6/7 (86%) abstinent at 7 days5/7 (71%) abstinent at 30 days
Internalizing Disorder Interventions					
Listug-Lunde, Vogeltanz-Holm, & Collins (2013)	Depression	Middle Schools 13, 35-40-minute sessions over 7 weeks <ul style="list-style-type: none">2 booster sessions Group intervention	Age: Coping With Depression Adolescent (CWDA): 11 – 14 Treatment As Usual (TAU): 12 – 14	Children's Depression Inventory Multidimensional Anxiety Scale for Children	Depressive symptoms decreased over time for both groups <ul style="list-style-type: none">No difference between groups in reductionsDecreases maintained at follow-up

Authors	Presenting Problem	Implementation factors	Participants	Measures Used	Summary of Outcomes
			CWDA: $n = 8$ TAU: $n = 8$ AI middle school students from NW Plains reservation school		Anxiety scores appeared to decrease <ul style="list-style-type: none"> • TAU returned to pre-intervention levels at follow-up • CWDA maintained anxiety reductions
Miller et al. (2011)	Anxiety Prevention	School-based 9 weekly session Curriculum based intervention	$M = 9.77$ $SD = 0.99$ $n = 353$ 192 FN Western Canada	MASC	Anxiety symptoms were not significantly decreased Elevated initial anxiety scores significantly reduced at time 2 (except social anxiety) Comparable effects for Aboriginal children
Nowrouzi et al. (2015)	Anxiety	Community-based 12 sessions	Age: $M = 11.8$ $SD = 2.71$ $n = 7$ FN children from NW Ontario	Multidimensional Anxiety Scale for Children Child Behavior Checklist Children's Depression Inventory	Comparable reductions in anxiety and depressive scores to non-Indigenous group Discusses clinicians' ability to implement and adapt the protocol

Table II: Indigenous Cultural Adaptations for Reviewed CBT Interventions

Authors	Development of the Intervention	Types of Adaptations Made		
		Deep Structural: Underlying Values	Structural: Incorporating Cultural Practices	Surface level (e.g. wording, pictures, etc.)
BigFoot & Schmidt (2010)	<ul style="list-style-type: none"> Worked with community members (e.g. leadership, knowledge holders, traditional healers, etc.) to develop, refine, & evaluate the treatment 	<ul style="list-style-type: none"> Core components: all things are interconnected, all things (e.g. people, earth, animals, etc.) have a spiritual nature, existence is dynamic (pg. 850) Well-being is defined as a balance and harmony between spiritual, relational, emotional, mental and physical dimensions Exposure to trauma creates an imbalance; the intervention seeks to restore balance in the 5 domains 	<ul style="list-style-type: none"> “The smudging ceremony addresses several of the TFCBT PRACTICE components: affect management, relaxation, cognitive coping, and enhancing safety.” (pg. 854). This enhances spiritual and relational components of treatment 	<ul style="list-style-type: none"> Use of traditional images (e.g. swaying grass, movement of shawl while dancing) to induce relaxation Use of traditional instructions: e.g. intrusive thoughts – compare to dancing practices – leave negative thoughts outside of the place, know you are safe, know who you are, feel where you are sitting, etc.
Novins et al. (2012)	<ul style="list-style-type: none"> Used Community Based Participatory Research that includes consultation with clinicians, administrators, youth, Elders, cultural experts, etc. 	<ul style="list-style-type: none"> Flexible protocol that can be implemented in any order Builds upon 4 key aspects – belief, hope, trust, and courage – represented in the Medicine Wheel; at the centre is a fire Strength based, purposely repetitive “spiraling” of treatment topics Attempts to create a community of healing through regular family involvement Services can be extended as long as needed 	<ul style="list-style-type: none"> Ceremonies have been embedded into the protocol that can be used by anybody (i.e. not restricted to certain people) Ceremony is included in either the check-in for each session or at the end of each session 	<ul style="list-style-type: none"> Uses the metaphor of a winding road to conceptualize the healing journey – may get lost or off the road but there’s always a way to get back on; this journey is shared

Authors	Types of Adaptations Made			
	Development of the Intervention	Deep Structural: Underlying Values	Structural: Incorporating Cultural Practices	Surface level (e.g. wording, pictures, etc.)
Patten et al. (2012)	<ul style="list-style-type: none"> Conducted focus groups with youth to determine what they wanted 	<ul style="list-style-type: none"> Based on traditional views of role-modelling as an important way of learning 	<ul style="list-style-type: none"> Included talking circles and personal stories from Elders as storytelling is a traditionally accepted learning medium 	<ul style="list-style-type: none"> Not clear
Morsette et al. (2009)	N/A	<ul style="list-style-type: none"> Embedded local histories and traditions E.g. adapted the “hot seat” protocol so that it was a group activity refuting the irrational negative thoughts instead of a child pair 	<ul style="list-style-type: none"> Also incorporated an Elder to start the session with a prayer and to be present at the graduation 	<ul style="list-style-type: none"> Added native language concepts Changed examples to be more relevant to children’s lives
Morsette et al. (2012)	<ul style="list-style-type: none"> Not identified 	<ul style="list-style-type: none"> Provided information on Native perspectives on healing & trauma, and conducted ceremonies based on culture and traditional practices (these were not specified due to proprietary reasons) 	<ul style="list-style-type: none"> Encouraging Elders and healers to attend the initial session & the graduation ceremony 	<ul style="list-style-type: none"> Not identified
Listug-Lunde, Vogeltanz-Holm, & Collins (2013)	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Discussion surrounding the cultural impact of skills such as eye contact, assertiveness, constructive criticism, and self-disclosure 	N/A	<ul style="list-style-type: none"> Offered it as a part of the regular school day and curriculum Changing examples and roleplay scenarios
Nowrouzi et al. (2015)	<ul style="list-style-type: none"> Not identified 	<ul style="list-style-type: none"> Not identified 	<ul style="list-style-type: none"> Not identified 	<ul style="list-style-type: none"> Not identified
Goodkind, LaNoe, & Milford (2010)	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Made referrals to traditional spiritual healers when appropriate 	<ul style="list-style-type: none"> Changed stories to be more relevant & acceptable (e.g. removal of flat earth story,

Authors	Development of the Intervention	Types of Adaptations Made		
		Deep Structural: Underlying Values	Structural: Incorporating Cultural Practices	Surface level (e.g. wording, pictures, etc.)
Miller et al. (2011)	<ul style="list-style-type: none"> Enriched the protocol according to consultations with Indigenous school board consultants 	<ul style="list-style-type: none"> Used an animal guide, Rusty the Raven, as the storyteller 	<ul style="list-style-type: none"> Read it out loud or used more storytelling Developed a medicine pouch to place good thoughts; decorated the pouches with Indigenous symbols 	<p>replacement of chicken little with coyote story)</p> <ul style="list-style-type: none"> Primarily changed the examples to be better aligned with Indigenous culture
Donovan et al. (2015)	<ul style="list-style-type: none"> Engaged with community members and consultants in an iterative process to ensure the protocol aligned with the community’s vision 	<ul style="list-style-type: none"> Focused on “strengthen[ing] youths’ connection to their tribe and community, especially to extended family; specific mentors; and cultural activities, traditions, and values, all of which are believed to promote cultural identity” (pg. 5) 	<ul style="list-style-type: none"> Incorporated but not specified 	<ul style="list-style-type: none"> Incorporated but not specified

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