

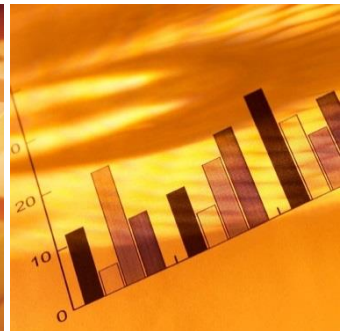
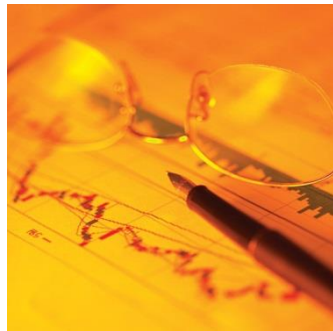
Culturally-relevant Programming versus the Status Quo: A Meta-analytic Review of the Effectiveness of Treatment for Indigenous Offenders

by Leticia Gutierrez, Nick Chadwick, & Kayla A. Wanamaker

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Abstract

The overrepresentation of Indigenous peoples in criminal justice systems internationally remains a critical issue. Some have argued that replacing generic services with culturally relevant programming would be an effective strategy to address this problem. This meta-analysis examined the effectiveness of culturally-relevant programs for Indigenous offenders compared to conventional programs. Results based on seven studies ($N = 1,731$) indicate Indigenous offenders who participate in these programs have significantly lower odds of recidivism (odds ratio [OR] = 0.72) compared to Indigenous offenders who participate in generic programs. Although considerable methodological limitations were observed in the studies reviewed, the results of this meta-analysis are consistent with the concept of specific responsivity and the notion that treatment effectiveness is maximized when the learning environment is engaging and relevant. Additional research of higher methodological quality is needed to further evaluate culturally-relevant programs and determine with greater confidence how correctional interventions work best for this population.

Author's Note

The views expressed are those of the authors and do not necessarily reflect those of Public Safety Canada. Correspondence concerning this report should be addressed to:

Research Division
Public Safety Canada
340 Laurier Avenue West
Ottawa, Ontario
K1A 0P8
Email: PS.CSCCBResearch-RechercheSSCRC.SP@canada.ca

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Introduction

Most correctional systems have a responsibility to provide rehabilitative services to those under their supervision. Given the diversity of most correctional populations, some argue that these services should be tailored to the diverse needs and cultural backgrounds of the individuals they aim to help in order to be effective. Specifically, proponents of this view argue that utilizing a generic (i.e., culturally non-specific) one-size-fits-all approach to treatment is not only less effective, but contributes to the persistent problematic outcomes faced by many minority offender groups. For example, Indigenous offenders in the justice systems of Canada, Australia, New Zealand, and the United States are overrepresented compared to their proportion in the general population. The potential cause for this overrepresentation has been attributed in part to the lack of cultural-relevance in offender programming, the argument being that these services are not targeting the appropriate needs in a culturally-responsive manner that would otherwise maximize effectiveness (e.g., reducing re-offending; e.g., Ellerby and MacPherson 2002; Heckbert and Turkington 2001; Laprairie 1997). Although some of these countries have made strides to acknowledge and address the unique needs of these groups through the creation of culturally-relevant programming and other similar initiatives, little is known about the effectiveness of these programs. Furthermore, the effectiveness of these programs compared to conventional criminal justice services has yet to be examined.

Overrepresentation of Indigenous peoples

The overrepresentation of offenders of Indigenous heritage is a long-standing issue for many justice systems around the world. In Canada, Indigenous peoples (broadly defined as First Nations, Métis, and Inuit peoples) represent approximately 23% of the total federal offender population and approximately 26% of those in provincial and territorial custody, despite accounting for only 4.3% of the general population (Public Safety Canada 2017). Similar patterns can be observed in Australia, where 27% of the national prison population are Aboriginal and Torres Strait Islander peoples, and New Zealand, where Māori and Pacific Islanders comprise approximately 50% of the prison population while only accounting for roughly 13% of the general population (Australian Bureau of Statistics 2015; New Zealand Department of Corrections 2016). In the United States, although concerns regarding racial inequities in the justice system largely focus on Black and Hispanic/Latino populations, Native Americans are also overrepresented. For example, in Montana, Native Americans account for approximately 20% of all arrests, but only 7% of the general population; in South Dakota, they comprise 60% of federal caseloads despite accounting for only 8.5% of the general population (United States Sentencing Commission 2016).

A variety of common factors have been identified as contributors to the overrepresentation of Indigenous peoples globally. Broadly, these include the devastating effects of colonization and the ensuing social, economic, and political marginalization as well as specific systemic discrimination within the justice system (e.g., over-policing, imposing longer sentences, higher rates of revocation on conditional release, etc.; Jackson 1988; LaPrairie 1997; Mann 2009; Office of the Correctional Investigator 2016). In an attempt to ameliorate the issue of overrepresentation, governments have adopted various strategies to improve how their correctional systems respond to the needs of Indigenous peoples.

Canada

In Canada, the *Royal Commission on Aboriginal Peoples* (RCAP) prompted changes to legislation, most notable of which was an acknowledgement by Parliament of the over-reliance on the incarceration of Indigenous peoples. This led to the introduction of Bill C-41 section 718.2 (*e*) *Canadian Criminal Code* (CCC), which required that sentencing judges consider “all available sanctions, or options other than imprisonment that are reasonable in the circumstances, should be considered for all offenders, with particular attention to the circumstances of Aboriginal offenders”. The importance of considering the unique needs of Indigenous peoples was formally recognized by the Supreme Court of Canada and efforts have been made to implement these considerations within the correctional system. For example, courts have required that cultural and background factors (i.e., termed Gladue factors or social history factors), such as the impact of residential schools or poor living conditions, be considered when sentencing Indigenous peoples (*R. v. Gladue* 1999). The federal correctional system also considers social history factors when making a variety of decisions pertaining to the management of Indigenous offenders (e.g., security classification and placement, institutional transfers, etc.) and is legally required under section 80 of the Corrections and Conditional Release Act (1992) to provide programs designed specifically to address the needs of Indigenous offenders. Relatedly, additional initiatives, such as the implementation of healing lodges and access to Elders and traditional ceremonies, were introduced to increase the cultural relevance of the system. Although the various responses demonstrate efforts to address the needs of Indigenous peoples in Canada, a recent report by Office of the Correctional Investigator (OCI), ombudsman for federal offenders in Canada, indicated that the inconsistent application of these strategies has rendered them inadequate (OCI 2016). For example, although social history factors are supposed to be considered when assigning institution and security placements, they are rarely identified in the rationale provided by decision-makers (Office of the Correctional Investigator 2016).

More recently, the *Truth and Reconciliation Commission* (TRC) was established to acknowledge the impact and experiences of Indigenous peoples as a result of the residential school system, as well as bring awareness to Canadians regarding the negative effects of colonization. As a part of their calls-to-action, the TRC recommends justice systems must provide realistic alternatives to incarceration and respond to the underlying causes of offending in order to eliminate Indigenous overrepresentation. Specifically, they highlight the need to eliminate barriers to the creation of healing lodges and access to culturally-relevant programs (Truth and Reconciliation Commission of Canada 2015).

New Zealand & Australia

In New Zealand, a number of initiatives have been undertaken to address the overrepresentation of Māori offenders. As summarized by Tauri (1999 2010), criminal justice agencies introduced new staff recruitment and training initiatives starting in the 1970s in an effort to demonstrate the “biculturalism” of government, largely in response to external pressures (e.g., Māori activist movements) to improve the treatment of Māori offenders. Some of these efforts included the creation of specialized roles for Māori staff, such as specialty Māori advisors and court liaison officers to assist offenders and their families in navigating the court system. Special recruitment drives were introduced to increase the number of Indigenous peoples working in policing and correctional roles. Similarly, in-house cultural sensitivity training for staff was implemented to increase cultural competence and awareness. More symbolically, various departmental agencies

adopted traditional Māori names to demonstrate a commitment to this bicultural justice approach. Finally, to enhance the effectiveness of programming, services based on the principles of *tikanga* – a Māori term that refers to the traditional cultural rules or ways of life – were introduced, such as family-group conferencing and restorative justice.

In Australia, Aboriginal Justice Agreements were similarly established to respond to the overrepresentation of the Aboriginal and Torres Strait Islander peoples. Through collaboration with Aboriginal Justice Advisory Councils, these agreements outline frameworks to improve the overall experience of Indigenous Australians involved in the criminal justice system. In Victoria, prisons are required to provide access to Aboriginal Wellbeing Officers and Aboriginal Liaison Officers, in addition to culturally-appropriate programming (Corrections Victoria 2014). A recent report from the Victorian Ombudsman (2015), however, indicated that these programs were infrequently offered and programming options were not sufficiently addressing important issues such as education, parenting, family violence, and substance abuse issues.

The culturally-responsive initiatives that have been ushered in over the last 40 years have been met with mixed opinions and results. And despite the efforts to target and address the issues of overrepresentation, the proportion of Indigenous peoples in criminal justice systems in most cases has *increased* rather than decreased (Cunneen 2013; Marie 2010; Public Safety Canada 2015).

Effective Correctional Interventions

Identifying effective strategies for reducing Indigenous overrepresentation in part relies on understanding what approaches lead to more successful outcomes (e.g., reductions in re-offending) for this population. The last 30 years of research on correctional interventions has yielded considerable evidence regarding “what works” in general for offender treatment. The most prominent approach has been the risk, need, responsivity (RNR) model of offender rehabilitation (Andrews, Bonta and Hoge 1990). Based on a general psychological social learning perspective, this model stipulates that treatment should be matched to the offender’s level of risk-to-reoffend, focus on addressing risk and need factors related to re-offending (i.e., criminogenic needs), and employ cognitive-behavioural methods within an engaging learning environment (Andrews and Bonta 2010; Bourgon and Bonta 2014). Correctional programs that incorporate the principles of RNR have demonstrated significant reductions in recidivism compared to non-RNR programs (e.g., Andrews and Bonta 2010; Dowden and Andrews 1999a; Smith, Gendreau and Swartz 2009). Numerous meta-analytic reviews have found that greater adherence to the RNR principles can result in greater reductions in recidivism for a variety of offender types, outcomes, and treatment settings (e.g., women offenders, Dowden and Andrews 1999a; young offenders, Dowden and Andrews 1999b; and sex offenders, Hanson, Bourgon, Helmus and Hodgson 2009).

Correctional Programming with Indigenous Offenders

Although a considerable amount of research has enabled the identification of effective correctional strategies for offenders in general, less is known about what works specifically with Indigenous peoples. A recent meta-analysis examined the effectiveness of correctional programming for Indigenous offenders serving federal sentences in Canada (Usher and Stewart 2014). The review identified eight reports that included 5,755 Indigenous offenders and indicated that Indigenous offenders who participated in treatment experienced lower odds of being readmitted to custody than a comparison group, who did not participate in treatment. Although

these findings provide further evidence that accessing correctional programming is more beneficial than no programming at all, the review did not examine the effectiveness of culturally-relevant programming compared to generic programming.

Although there is scarce empirical research on the benefits of culturally-relevant programming for Indigenous offenders, some research has found positive effects on a variety of outcomes of interest. For example, although not statistically significant, Ellerby and MacPherson (2002) demonstrated that participants of a sex offender program that integrated traditional healing approaches with contemporary cognitive-behavioural techniques demonstrated higher completion rates (83.3%) than Indigenous offenders who participated in the standard program (55.2%) and were more likely to voluntarily continue their treatment in the community after release. Similarly, preliminary findings from a culturally-relevant Inuit sex offender program ($n = 27$) highlighted positive effects for participants, including high rates of completion, reductions in overall need areas following treatment, and increased satisfaction (Trevethan, Moore, and Naqitarvik 2004). Importantly, almost all participants (91%) indicated they were very satisfied with the role of Inuit healers in the program and highlighted that having a link with their culture and community had a positive impact on them. Improving an individual's connection to the community has been identified as a potential protective factor among Indigenous peoples, with community involvement related to positive coping skills, self-esteem, and resilience (Heckbert and Turkington 2001; Shepherd 2015).

The cultural competence of program facilitators has been described as critical to creating an effective therapeutic environment (Mals, Howells, Day, and Hall 2000). It is argued that, in doing so, program deliverers can more readily convey the program material in a culturally informed manner that should facilitate uptake. For example, a small sample of service providers ($n = 14$) were interviewed for their perspective on the importance of tailoring violence prevention programs for Australian Aboriginal offenders. A common theme across the respondents was the belief that programs that address the unique needs of the participants would lead to greater cohesion in the treatment setting, including a stronger therapeutic relationship with service providers (Mals et al. 2000). Similarly, results from a survey of incarcerated Indigenous offenders also suggest that Elders or spiritual leaders would be the preferred individuals to act as counsellors (Johnston 1997).

Providing an individual with the opportunity to engage with their culture through programming can also contribute to the creation of a cultural identity, which some have described as critical to the healing process (Trevethan et al. 2004). It is argued that the development of a cultural identity also reinforces prosocial identity, an internal mechanism that in turn supports the process of desistance (e.g., Chiricos, Barrick, Bales, and Bontrager 2007; Maruna 2001). A review of the factors that contribute to successful reintegration for a sample of Indigenous offenders ($n = 68$) indicates a majority of respondents (76%) believe having a strong sense of identity positively influenced their ability to initiate a transition from crime (Heckbert and Turkington 2001). Additionally, 94% indicated that having strong personal values and identity was helpful for remaining crime free for over two years. Results further indicated that the majority of respondents perceived family supports, Indigenous spirituality, and cultural activities as positively influencing their ability to remain crime free.

Current Study

For the purposes of this study, any treatment approach that was developed for specific use with an Indigenous sample of offenders was included, with the intention of identifying whether tailored, culturally-relevant programs would lead to more successful offender outcomes (i.e., reductions in recidivism) compared to generic (culturally non-specific) treatment approaches. It is important to emphasize however, that cultural traditions, practices, and spirituality can vary substantially across subgroups as well as geographic location; therefore, it is important to acknowledge the diversity of cultures that exist within this grouping of Indigenous peoples.

Determining whether participation in culturally-relevant programming results in greater reductions in recidivism compared to participation in generic programming will help inform decision-making pertaining to program development, resource allocation, and the availability of programs. Moreover, it will provide much needed evidence regarding best practices for Indigenous offenders, which would be an important step towards addressing the issue of overrepresentation.

Method

Selection of Studies

A comprehensive search of PsycINFO, National Criminal Justice Reference Service (NCJRS), Google Scholar, Dissertations and Theses: Full Text, Criminal Justice Abstracts, and various government correctional agency websites was conducted using the following key terms: *Aboriginal**, *Native*, *Indian*, *Indigenous*, *ethnicity*, *race*, *Māori*, *culture*, *minority*, *First Nations*, *Métis*, *Inuit*, and *recid**, *relapse*, *offen**, *prison*, *reoffen**, *program**, *treatment*, and *interven**. Additional articles were also found through reference lists of articles that were collected, review and discussion articles, and contact with researchers in the field. In many cases, authors were contacted by email for additional information needed to calculate the effect size(s) or for clarification on the information presented in their study. Furthermore, the authors contacted several governmental criminal justice agencies (both within Canada and internationally) to gain access to any ongoing or upcoming research that would be of relevance.

To be included, studies had to examine the effectiveness of culturally-relevant programming for Indigenous offenders by comparing the recidivism rates (i.e., general, sexual, or violent recidivism) of a sample of Indigenous offenders who participated in culturally-relevant programming to a comparison group of Indigenous offenders (who received programming that was not *intentionally* culturally-informed). Studies were excluded based on insufficient information on the treatment or comparison group. Notably, specific information pertaining to the comparison groups from three studies (i.e., Berry 2003; Maxwell et al. 1999; Trevethan et al. 2005) could not be located. When multiple articles reported findings based upon the same (or overlapping) samples, the report with the largest sample size and longest follow-up time was chosen for inclusion. In some cases, information to code studies was taken from multiple sources (e.g., program description captured from a different source than where the recidivism information was drawn from).

Overall, a total of 32 studies were identified in the initial screening; however, studies were eliminated due to: 1) failure to include an Indigenous comparison group that participated in an alternate generic offender treatment program; 2) failure to disaggregate Indigenous offenders from non-Indigenous offenders; and/or, 3) missing recidivism information. Although efforts were made to obtain the missing information or have information appropriately disaggregated, a total of 25 studies were ultimately eliminated, resulting in a total of seven unique studies that satisfied the inclusion criteria (see Table 1). Each of these studies is described briefly below.

Table 1: List of Studies Included in the Meta-Analysis

Study Number	Authors	Program Name	Year
1	Stewart, Hamilton, Wilton, Cousineau, and Varrette	Tupiq Program for Inuit sex offenders	2015
2	Kunic and Varis	Aboriginal Offender Substance Abuse Program (AOSAP)	2009
3	Wehipeihana, Porima, and Spier	New Life Akoranga Program	2003
4	Berry	Montgomery House Violence Prevention Program	2003
5	Maxwell, Morris, and Anderson	Te Whanau Awhina Program	1999
6	Trevethan, Moore, and Allegri	In Search of Your Warrior (ISOYW) program	2005
7	Nathan, Wilson, and Hillman	Te Piriti program for child sex offenders	2003

Study 1: Stewart, Hamilton, Wilton, Cousineau, and Varrette 2015. This report evaluates the Tupiq Program specifically designed for Inuit sex offenders. This high intensity program has been operating at Fenbrook Institution in Gravenhurst, Ontario since 2001, and occurs over an 18-week period. This program is designed to focus on issues related to family violence, emotional mismanagement, substance abuse, and social skills. Furthermore, it incorporates an Inuit-specific therapeutic approach delivered by an Elder, and integrates Inuit values, languages, and perspectives. The comparison group was comprised of Inuit sex offenders, serving a sentence during the same time as the treatment group, who participated in generic federal sex offender treatment not specific to Indigenous offenders.

Study 2: Kunic and Varis 2009. This report evaluates the Aboriginal Offender Substance Abuse Program (AOSAP), a holistic model of recovery operating across various regions in Canada, including Quebec, Ontario, the Prairies, and Atlantic and Pacific regions. This program was established in 2004 and includes 65 sessions grouped into four treatment modules. This program

focuses on relapse prevention, planning, and motivation. Culturally-relevant components include ceremonial traditions, medicines, and the inclusion of Indigenous Elders and Indigenous correctional program officers. The comparison group was made up of Indigenous offenders who participated in the National Substance Abuse Program (NSAP), either moderate (26 sessions, each 2 hours long) or high intensity (89 sessions, each 2 hours long).

Study 3: Wehipeihana, Porima, and Spier 2003. This report evaluates the New Life Akoranga program specifically designed for Māori offenders. This 4-day program has been operating in various prisons across New Zealand since 1995, and focuses on targeting general criminality. Specifically, this program focuses on understanding individual behaviour, actions, self-control, accepting responsibility, and nurturing self-esteem. The culturally-relevant components include spiritual story-telling, the incorporation of Māori traditions, values, language, and history, and the inclusion of Māori Chiefs. The comparison group consisted of a matched sample of Māori offenders who attended a variety of generic programming on issues related to substance use, violence prevention, education skills, and cognitive skills that was not tailored to Indigenous offenders.

Study 4: Berry 2003. This evaluation examines the Montgomery House violence prevention program in Hamilton, New Zealand. This program has been in operation since 1987 and is designed for Māori offenders. The duration of this program is 10 weeks with approximately 470 hours of treatment, and focuses on managing addictions as well as enhancing communication, problem-solving, and relationship skills. This program also incorporates traditional Māori ceremonies, ancestry, language, music, and dancing. The comparison group consisted of Māori offenders who received generic violence prevention programming.

Study 5: Maxwell, Morris, and Anderson 1999. This report evaluates the Te Whanau Awhina program operating since 1996 in West Auckland, New Zealand. This program is specifically designed to target the general criminality of Māori offenders and focuses on offenders' accountability and recognizing the consequences of their actions. The culturally-relevant components of this program include improving the quality of relationships between offenders and the Māori community and the incorporation of Māori philosophy, values, and Whareniui—a traditional Māori meeting house. The comparison group consisted of Māori offenders who participated in unspecified, generic correctional programming.

Study 6: Trevethan, Moore, and Allegri 2005. This report examined the 'In Search of Your Warrior' (ISOYW) program operating within several federal correctional facilities across Canada, including Quebec, Prairie, and Pacific regions. The ISOYW program was established in 1999 and focuses primarily on violence prevention for Indigenous male offenders. The program promotes anger and violence awareness, self-awareness, and the development of cognitive skills. It also incorporates a holistic approach by including Indigenous elders and highlighting the use of the medicine wheel and traditional cultural ceremonies (e.g., spiritual cleansing ceremonies). The comparison group was comprised of a sample of Indigenous male offenders who received generic violence prevention programming.

Study 7: Nathan, Wilson, and Hillman 2003. This evaluation focuses on the Te Piriti special treatment program for child sex offenders in Auckland, New Zealand. Established in 1994, this 40-week program assists Māori clients with developing positive self-views, building prosocial relationships, preventing relapse, and sexual reconditioning. The culturally-relevant components

include cultural consultants, a focus on strengthening social and spiritual Māori relationships, and the inclusion of cultural assessments. The comparison group was based on a sample of Māori child sex offenders who received generic sex offender programming prior to the development of the Te Piriti treatment program.

Coding Procedure

To calibrate the coding approach, three studies were identified and coded by all of the authors. During this stage, each study was independently coded and then discussed as a group to reach a consensus and provide clarification wherever required. The remaining four studies were then independently coded by the second and third authors who discussed and generated consensus ratings for any discrepancies. Efforts were made to code for a variety of study characteristics (e.g., country, study design, role of evaluators), programming information for the treatment and comparison groups (e.g., program type, age of program), information pertaining to treatment quality (e.g., adherence to RNR principles), sample characteristics (e.g., gender, race, age), and recidivism information (e.g., length of follow up, timeframe, source of information).

Study quality. To assess study quality, studies were rated on an abridged version of the Collaborative Outcome Data Committee (CODC 2007) study quality guidelines. CODC guidelines were initially developed by sex offender researchers to better estimate the effectiveness of sex offender treatment. The CODC guidelines consist of 21 items that assess whether certain factors within the study present bias in the estimation of the treatment effect and whether these factors influence confidence in the study's findings. Items are organized into seven domains, including administrative control of independent variables, experimenter expectancies, sample size, attrition, equivalency of groups, outcome variables, and correct comparisons conducted. After rating the items, individual studies are then given global ratings, in the form of structured judgment, of either: 'rejected', 'weak', 'good', or 'strong'. Similar measures of study quality exist, including the Maryland scale (Sherman, Gottfredson, Mackenzie, Eck, Reuter, and Bushway 1997), an influential rating scale used in criminology that similarly assesses several domains of methodological rigor (e.g., sample size, type of comparison groups, etc.; CODC 2007).

According to CODC (2007), for a study to be deemed 'strong' it must be well-executed and contain few methodological flaws that do not influence the observed effects. To be deemed 'good', there must be high confidence that the study presents limited bias and only contains minor methodological issues. A 'weak' study generally has significant flaws, but is still relevant with respect to examining the effectiveness of treatment. Finally, a study is 'rejected' if multiple significant flaws produce considerable bias and generates low confidence in the findings. Importantly, studies are coded as weak as opposed to rejected in the case of missing information because it is unclear whether the information is truly missing or if the authors failed to report it. For the purposes of the current study, studies including a comparison group that received some form of alternative programming but no details of that programming (e.g., specific program type, length of program, length of follow up, etc.) were considered weak rather than rejected. Global study quality was assessed for all studies, and inter-rater agreement was 100% on four of the seven studies (i.e., all studies that were coded independently).

Inter-rater Reliability

Inter-rater reliability analyses were conducted based on four studies, resulting in four common coded effect sizes between raters. High levels of agreement were found, with an absolute intraclass correlation coefficient (ICC) of .98 (95% CI = [.86, .99]), based on a two-way mixed model with a single rating. The seven remaining continuous variables (e.g., length of follow up, total sample sizes) had ICC values of 1.0 based on a single rating. Notably, 14 continuous variables could not be analyzed due to missing data.

There was a high level of percentage agreement (75-100%; median = 100%; mean = 91%) for all categorical variables ($n = 35$). Overall, the categorical variables that had the lowest percentage agreement included: items pertaining to descriptions of the comparison group, type of treatment the comparison group received, average risk level of participants (both comparison and treatment group), whether the programs were structured, where the recidivism information came from, adherence to the need principle, and whether there was a valid evidence-based risk tool used to classify the offenders. Additionally, there were three variables that had kappa values less than 1.0, which included the items assessing program structure (.50), quality of recidivism information (.50), and whether programs adhered to the need principle (.64). Overall, the categorical variables demonstrated acceptable levels of reliability, defined as Kappa values exceeding .40 (Landis and Koch 1977). Given that interrater was based on four studies, any single discrepancy dramatically influenced the percentage agreement (by 25%). Consensus ratings were derived for any disagreements based on discussion between coders and the consensus ratings were used for further analyses.

Index of Program Effectiveness

Effect sizes were exclusively derived from 2×2 tables that displayed the successful and non-successful outcomes for both the treatment and comparison groups. Odds ratios (OR) were calculated to estimate the effectiveness of culturally-relevant programming compared to generic programming. The benefit of odds ratios is that they provide stable estimates for variables that are dichotomous in nature.

Odds ratios are used when calculating the likelihood of an outcome given exposure to a particular factor of interest, compared to the likelihood of that same outcome given no exposure to the factor. Therefore, an odds ratio of 1.0 indicates that the ratio of recidivism for the treatment group is equal to the ratio of recidivism for the comparison group. Alternatively, an odds ratio of less than 1 indicates that the odds of recidivism for the treatment group are small relative to the odds of recidivism for the comparison group. Given that odds ratios are not normally distributed (i.e., one side of the ratio is bound between 0.00 and 1.00, while the other side of 1 is unbounded), they were converted to log odds ratios before calculating mean effect sizes. Doing so ensures that opposing effects accurately impact the overall meta-analytic average (Borenstein, Hedges, Higgins, and Rothstein 2009). The log odds ratios were then converted back into odds ratios, which are the effect sizes reported in the current study.

Summarizing Findings

All data were entered into the Statistical Package for the Social Sciences (SPSS) version 24 and analyzed using syntax files developed by Helmus and Babchishin (2011). Both fixed-effect and random-effects models of meta-analyses were used to calculate summary statistics across studies

(Borenstein et al. 2009). Fixed-effect models are theoretically restricted to studies included in the meta-analysis. Conversely, random-effects models provide estimates for the population being considered by the sample in the meta-analysis and, unlike fixed-effect models, incorporate the variability across samples into the error term. If variability across studies is low ($Q < df$), the results of the fixed-effect and random-effects models will be similar; if variability across studies is high, the confidence intervals (CI) for the random-effects model become wider than the fixed-effect model (Borenstein et al. 2009).

Cochran's Q and the I^2 statistic were used to assess the variability in the findings across studies (Borenstein et al. 2009). Cochran's Q is a significance test for variability across studies, whereas I^2 is an effect size measure for variability comparable across analyses. Generally, I^2 values of 25, 50 and 75% represent low, moderate, and high variability, respectively (Higgins, Thompson, Deeks, and Altman 2003).

A search for outliers was conducted using criteria outlined by Hanson and Morton-Bourgon (2009). To be considered an outlier, the finding must have been an extreme single value that accounted for over 50% of the total variance and had a significant Q value. In addition to outliers, extremely large weights can also influence the results. In the current study, no outliers or excessively influential weights were identified.

Results

The majority of the seven studies included in this meta-analysis were from unpublished reports (71.4%, $k = 5$), originating from New Zealand (57.1%, $k = 4$) with the remaining studies conducted in Canada (see Table 2). The dates of completion for the studies ranged from 1999 to 2015 ($M = 2005$); however, most were completed from 2003 onwards (85.7%, $k = 6$). The majority of evaluations were conducted by agency-based researchers (85.7%, $k = 6$) utilizing a matched-group design (71.4%, $k = 5$), and were conducted on programs delivered in a custody/institutional setting (71.4%, $k = 5$). The average follow-up length for the treatment and comparison groups was 47.8 weeks ($SD = 16.03$, $k = 6$) and 41.1 weeks ($SD = 15.3$, $k = 5$), respectively.

Demographic information is based on the full sample ($n = 2,006$) of offenders who contributed to each study. Not all offenders remained in the recidivism analyses, either due to missing information or insufficient time at risk. The Trevethan and colleagues (2005) study accounted for the vast majority of sample attrition (92%), as the sample initially consisted of those who had enrolled in the program ($n = 218$), but was reduced to 112 after considering whether the participant completed programming, there was sufficient information for follow-up, and was released before the end of the study. The comparison group for this study also experienced attrition due to not being released. Of the 135 comparison clients identified, only 64 participants were released and eligible for the follow-up analyses. Notably, other studies could have experienced similar rates of attrition, but the samples were preselected to ensure that participants would have sufficient time at risk for recidivism analyses. As a result of attrition, the number of offenders who contributed to the calculation of the effect size in each study ranged from 93 to 517 ($M = 259$, $SD = 154.5$), with a total combined sample of 1,731 offenders ($n = 728$ offenders in

the culturally-relevant treatment group and $n = 1,003$ offenders in the comparison group). Although the mean age of the total sample could not be obtained, due to missing information, all studies consisted of exclusively adult offenders (i.e., older than 17 years of age). At least two-thirds of all samples were males from various Indigenous ancestries, with the majority of the samples identifying as Māori (57.1%, $k = 4$). For the three Canadian studies, one study included exclusively Inuit offenders, one included First Nations offenders, and one indicated Indigenous peoples in general. For programs that specified the use of a validated risk assessment ($k = 4$), the overall risk level of the offenders in both groups was medium to high. Treatment programs included in the review tended to target a variety of offender groups, with 2 programs designed for sex offenders, 2 programs designed for violent offenders, and the remaining 3 programs designed to target any offenders (see Table 1). The average percentage of offenders with prior involvement in the criminal justice system (e.g., prior convictions) was 70.8% ($SD = 12.4$, $k = 4$) for the treatment group and 68.2% ($SD = 14.01$, $k = 3$) for the comparison group.

For the comparison groups, three of seven (43%) evaluations utilized a retrospective cohort of eligible Indigenous offenders who participated in a generic treatment program, one study used an eligible random sample from another jurisdiction, and the remaining studies did not provide information on how the comparison group was defined; however, they indicated that offenders received standard programming services.

Although efforts were made to code for dosage (e.g., frequency and duration of treatment), the variety of metrics utilized in each study prohibited any meaningful combination. However, it should be noted that a considerable range was apparent in the duration of treatment. For example, the evaluation of the New Life Akoranga program reported a program length of four days, whereas the Te Piriti program reportedly occurred over the course of 40 weeks. It is not possible from this information to glean the length of each session to inform accurate estimations of dosage (e.g., 1 vs. 8 hours per session). For those programs that specified ($k = 3$), the number of treatment hours ranged from 70 hours to 470.

Findings for Study and Treatment Quality

Study and treatment quality were assessed using the global outcome rating of the CODC guidelines (i.e., ‘strong’, ‘good’, ‘weak’, or ‘rejected’; CODC 2007) and the level of adherence of each program to the RNR principles. For study quality, only one study received a rating of ‘good’ (i.e., Stewart et al. 2015); however, the remaining six studies were rated as ‘weak’ due to major methodological limitations. These limitations included inadequate group matching to ensure equivalency, focussing on program graduates rather than performing an intent-to-treat analysis, and a lack of information pertaining to the programs offered to the treatment and comparison groups (e.g., dosage and service delivery). For treatment quality, three studies demonstrated adherence to the risk principle, four studies demonstrated adherence to the need principle, and five studies noted the use of cognitive-behavioural interventions as part of their curriculum. Put differently, three studies demonstrated adherence to all three of the RNR principles, one study demonstrated adherence to two, one study showed adherence to one principle, and two studies demonstrated adherence to none of the RNR principles.

Table 2: Study Characteristics

Study	Country	Indigenous Ancestry ^a	Setting	Offender Type	Treatment program's Adherence to RNR ^b	Risk Level ^c	Design	Comparison Program	CODC Rating
1	Canada	Inuit	Custody	Sex Offender	High ^d	High	Convenience	Sex offender	Good
2	Canada	First Nations	Custody	Mixed	Some ^d	High	Convenience	Moderate and High Intensity Substance Abuse ^d	Weak
3	New Zealand	Māori	Custody	Mixed	Minimal	-	Matched	Mixed generic ^e	Weak
4	New Zealand	Māori	Community	Violent	Some ^d	High	Matched	Unspecified	Weak
5	New Zealand	Māori	Community	Mixed	Minimal	-	Matched	Unspecified	Weak
6	Canada	Indigenous	Custody	Violent	High ^d	High	Matched	Unspecified	Weak
7	New Zealand	Māori	Custody	Sex Offender	Some ^d	-	Matched	Sex offender ^d	Weak

Note. Empty cells indicate that information was not available. RNR = Risk, Need, and Responsivity; CODC = Collaborative Outcome Data Committee. ^aAt least 2/3rds of the sample identified with the listed ancestry. ^b*Minimal* adherence indicated that routine services were provided, *Some* referred to one or two of the principles being considered, and *High* indicated that there was evidence of adherence to all three principles. ^cRisk level represents the majority risk presented by the sample. Risk level was comparable in every study across treatment and comparison groups. ^dThis is a cognitive-behavioral program. ^eParticipants attended a variety of programming, such as drugs and alcohol, violence prevention, education skills, cognitive skills, etc.

Effects of Culturally-relevant Programs on Recidivism

Figure 1 shows the effect sizes for each of the seven studies as well as the overall mean weighted odds ratio for the meta-analysis. Using both fixed and random effects analyses, Table 3 provides the mean weighted odds ratio for general recidivism for Indigenous offenders who participated in culturally-relevant programming compared to Indigenous offenders who participated in generic/standard programming. Recidivism was defined as any new reconviction in the majority of the studies ($k = 5$), with the remaining two studies relying on new charges and readmissions to custody as the index of recidivism. All possible recidivism outcomes were coded (e.g., violent, sexual, technical violations); however, there was an insufficient number of studies ($k < 3$) to analyze each recidivism outcome separately. Therefore, only the results for general recidivism are provided.

Table 3: Outcome Information for Individual Studies

Study	Recidivism	Mean Follow-up (weeks)	<i>n</i> Treatment	Treatment Base Rate (%)	<i>n</i> Comparison	Comparison Base Rate (%)
1	Reoffence/ new charges	30.3	61	29.5	32	56.3
2	Reconviction	28.7	94	36.2	423	52.0
3	Reconviction	52.0	224	52.7	224	55.8
4	Reconviction	71.5	79	30.4	79	41.8
5	Reconviction	52.0	90	33.3	100	47.0
6	Readmission to Custody	52.0	112	33.0	64	21.9
7	Reconviction	52.0	68	41.2	81	44.4

General recidivism rates for the treatment and comparison groups ranged from 29.5 to 52.7% and 21.9 to 56.3%, respectively (see Table 3). It is important to highlight that although 6 of the 7 studies favoured a treatment effect, only 2 of these (Study 1 and 2) effects were significant. Weighted recidivism rates (inverse of the variance) were calculated to facilitate comparison between the treatment and comparison groups. The weighted average recidivism rate for offenders who participated in culturally-relevant programming was 9% lower ($M = 39.1\%$, 95% CI = 35.7% - 42.6%, $n = 728$) than the comparison group ($M = 48.4\%$, 95% CI = 45.3% - 51.4%,

$n = 1,003$). For general recidivism, the odds ratios ranged from 0.33 to 1.76, with a fixed-effect mean weighted odds ratio of 0.72 (95% CI = [0.59, 0.89], $k = 7$), indicating that those in the comparison group experienced greater odds of recidivism compared to the treatment group, on average. As presented in Table 4, the results for fixed and random effects analyses converged, and the 95% confidence intervals did not contain 1.0, indicating significantly lower rates of recidivism for the treatment group relative to the comparison group.

Table 4: Mean Weighted Odds Ratio for the Effect of Culturally-relevant Programming on General Recidivism using Fixed and Random Effects Models

	Odds Ratio	Fixed		Odds Ratio	Random		Q	I^2 (%)	k	n
		95% CI			95% CI					
		Lower	Upper		Lower	Upper				
General recidivism	.72	.59	.89	.71	.51	.99	13.38	55.15	7	1,731
General recidivism^a	.69	.54	.89	.65	.44	.97	6.30	52.40	4	1,207

Note. General recidivism includes any recidivism outcome; CI = confidence interval; k = number of studies.

^aIncludes only studies where information on comparison group programming is specified. In light of the large amounts of missing information for the comparison group samples and to strengthen the accuracy of the comparisons between the two groups, Table 4 also presents the overall meta-analytic results excluding the three studies in which programming information for the comparison group was largely “unspecified” (i.e., Berry 2003; Maxwell et al. 1999; Trevethan et al. 2005). Consequently, when only the four studies with programming information for both groups was included, the fixed-effect mean weighted odds ratio showed a similar treatment effect (OR = 0.69, 95% CI = [0.54, 0.89]).

For both sets of comparisons, there was no more variability in the effect sizes than would be expected by chance. Although the non-significant Q suggests consistency among the studies, there was a moderate proportion of variability ($I^2 = 55.15\%$, $k = 7$). Further examination of study, sample, and program characteristics, however, yielded no significant moderators to account for the observed variability, which was expected given the small number of studies and low statistical power.

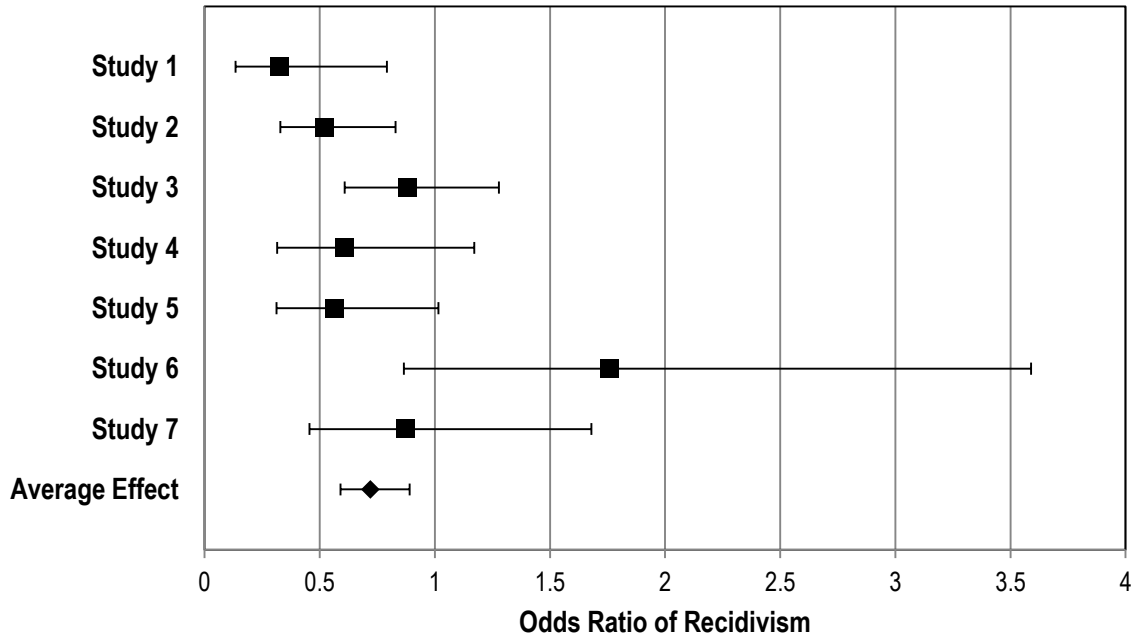


Figure 1: Individual odds ratios for general recidivism (N = 1,731). The horizontal bars represent the 95% confidence intervals.

Discussion

The importance of cultural relevance with regards to the effectiveness of programming for offenders is a topic of great significance, particularly to justice systems with widely diverse populations. It is an issue of particular importance to jurisdictions where unique sub-populations are overrepresented in their criminal justice systems (e.g., Indigenous peoples in Canada, Australia, and New Zealand; Black and Hispanic/Latino peoples in the United States). The purpose of the present study was to examine this issue as it relates to the effectiveness of programs designed specifically for Indigenous peoples (e.g., First Nations peoples of Canada, Māori peoples of New Zealand) compared to conventional programs. Specifically, this review sought to identify whether culturally-relevant programs are more effective than generic programs at reducing re-offending behaviours for Indigenous offenders.

Based on a total of seven studies and 1,731 offenders, Indigenous offenders who participated in programs described as culturally-relevant demonstrated significantly lower odds of recidivism (i.e., any new convictions/charges; OR = 0.72) compared to those who participated in generic programs. Specifically, the weighted average recidivism rate for Indigenous offenders who participated in culturally-relevant programming was 9% lower than their counterparts (39.1 versus 48.4%). Furthermore, despite the small number of studies ($k = 7$) and the variety of program types and Indigenous populations, a general consensus among the individual studies was evident. However, the imprecision in each study's effect size (as evidenced by wide confidence

intervals) could be masking genuine dispersion in the effectiveness of each program examined (Borenstein et al. 2009). Given the small number of studies and considerable methodological issues, there are two likely explanations for the observed findings: 1) culturally-relevant programs are indeed more effective than generic programs at reducing future criminal behaviour; or, 2) the pervasive methodological problems systematically influenced obtaining a treatment effect, and therefore, the results may in large part be attributable to a methodological artefact.

Cultural-relevance as a Necessary Component of Treatment

If taken at face value, the results suggest that culturally-relevant programs out-perform generic programs for Indigenous offenders and the results of individual studies demonstrated surprising consistency (as shown in Figure 1). This overall finding is consistent with the concept of specific responsivity, which contends that treatment environments that maximize relevance through engagement and learning will in turn result in more effective interventions (i.e., reduced rates of reoffending; Andrews et al. 1990; Bourgon and Bonta 2014). Although the ultimate outcome of interest is reducing re-offending, intermediate indicators of effective responsivity are outcomes such as higher rates of participation/low attrition, increases in observable learning (e.g., pre-post knowledge tests), or higher rates of satisfaction. Some evidence suggests that culturally-relevant programs are effective in this regard. As described earlier, Ellerby and MacPherson (2002) observed that treatment attrition rates were reduced following the inception of a traditional healing program for Indigenous sex offenders. Nathan et al. (2007) found that Māori participants demonstrated post-program increases in knowledge related to cultural history, skills, values and beliefs. Therefore, it seems plausible that treatment programs that are more culturally compatible – in terms of language, format, regional or historical context, for example – with their target group are indeed more accessible and applicable, and therefore, more effective.

In addition to providing a more responsive treatment context, culturally-relevant programs might be more effective because they tap into unique criminogenic risk/need areas that are not otherwise targeted by generic programs. Conversations that have been occurring in the area of risk assessment around culturally-relevant risk/need factors suggest the need to explore whether unique social history factors provide important information regarding offending behaviour for Indigenous peoples (e.g., Homel, Lincoln, and Herd 1999; Shepherd 2015; Wilson and Gutierrez 2014). For example, the residential school system in Canada resulted in an expansive cultural genocide of generations of Indigenous peoples. The institutionalized trauma that resulted was not only experienced by those who lived it first-hand, but was also transmitted intergenerationally. This intergenerational trauma has been identified as a contributor to various negative outcomes, including substance abuse, Fetal Alcohol Spectrum Disorder, suicide, family and domestic violence, and high rates of involvement in the criminal justice system (Truth and Reconciliation Canada 2015). It is therefore argued that the harmful manifestations of this culturally-specific intergenerational trauma indeed render it a unique criminogenic factor. To meaningfully reduce the risk factors that stem from this trauma (and in turn, reduce the problematic outcomes), the *underlying cause* must therefore be targeted through relevant treatment. Barring the ability to access program manuals for the programs included in this review, we are unable to speak to how culturally-unique risk factors were addressed in these treatment programs. This area requires further research to gain knowledge regarding which treatment targets, culturally-unique or otherwise, are most effective when working with different Indigenous populations.

A Methodological Artefact?

One of the issues inherent in meta-analysis is that it involves the combination of various different studies, which in turn results in the inclusion of research of varied quality. It is therefore important to assess methodological quality to know how confident we can be in the observed results. In the present review, study quality was assessed using a modified version of the CODC guidelines. All but one study received a ‘weak’ rating on account of major methodological problems. Among these issues were the following: inadequate group matching procedures (e.g., matching on a small number of basic demographic factors); the use of program graduates only to examine treatment effectiveness (i.e., three programs reported on program graduates exclusively); and, limited information on treatment dosage, structure, and modality, for both groups. For all but one study, the principal authors were agency-based researchers (i.e., affiliated with the treatment program being evaluated). Although their level of involvement with service delivery, or their investment in the outcomes of these evaluations, is unknown it is argued that an arm’s length approach to evaluation can decrease the potential introduction of bias (intentional or unintentional) in favour of a treatment effect (CODC 2007).

The most common methodological limitation was the large amount of missing information, particularly with regards to the comparison groups and the types of treatment they received. One of the difficulties with missing information is that it prohibits determining whether the observed treatment effect was due to the “cultural-relevance” of the programs, or simply because these programs were generally better quality than the programs to which the comparison group participants were exposed. For example, five of the seven culturally-relevant programs reportedly used cognitive-behavioural interventions, whereas it was only possible to identify two studies where the comparison group received treatment that was considered cognitive-behavioural in nature. Cognitive-behavioural interventions are among the most effective treatment approaches with a variety of offender populations (e.g., Cullen and Gendreau 1989; Gendreau and Andrews 1990; Lipsey, Chapman and Landenberger 2001; Schmucker and Lösel 2015). Furthermore, in our assessment of treatment quality (i.e., adherence to the principles of risk, need and responsivity), five of the seven programs demonstrated adherence to at least one of the RNR principles, and three of the programs demonstrated adherence to all three. Without information on the comparison group and the quality of treatment they received, it is difficult to draw strong conclusions from such comparisons. On the one hand, it could be that the comparison groups also received good quality treatment, but this information was simply not included in the studies; therefore, a true treatment effect occurred in favour of culturally-relevant programming. On the other hand, this information was perhaps not included because the programs the comparison groups received were of a lower quality, and therefore these comparisons are artificially biased in favour of a treatment effect. It is reasonable to expect that in all likelihood, a combination of these issues is at play in the current pool of studies and the effect of culturally-relevant programs may indeed be significant but potentially weaker, or potentially stronger (for example, the culturally-relevant group had a 14% longer average follow-up time, which could be minimizing the magnitude of the effects), than what has been observed in the present study. Although the lack of variability and small number of studies precluded our ability to examine the influence of various study and program characteristics, such examinations will be enabled by future research.

Implications and Future Directions

Taken together, the results of this review present a case for cautious optimism. Although the current pool of research studies is small and of low methodological quality, the findings suggest

that, on average, participation in culturally-relevant programs is related to lower odds of re-offending than standard programming. Given that random assignment of participants to treatment conditions is often not possible, there are many ways in which high-quality quasi-experimental designs can be accomplished. For example, in the evaluation of the Tupiq program for Inuit sex offenders, researchers made efforts to match groups on risk level, applied post-hoc statistical controls to account for differences between groups, utilized an intent-to-treat sample to evaluate outcomes (i.e., included drop-outs in the treatment group), and examined history of treatment exposure for each group, given its potential influence on subsequent treatment outcomes (e.g., Lösel 2001; Stewart et al. 2015). In the evaluation of the Te Piriti program, the researchers compared a culturally-relevant program founded on a cognitive-behavioural approach to a similar cognitive-behavioural program with the specific intention of isolating the effects of the cultural components of treatment (Nathan et al. 2007). Clearly, more (higher quality) research needs to be conducted to have confidence in these findings; furthermore, increased transparency and communication of detailed methodological information will enable meta-analysis, with the specificity of information required, to more accurately answer these questions. The lack of research in this area cannot be simply attributed to a lack of programs available for evaluation. A recent environmental scan revealed over 100 rehabilitative programs specifically for Indigenous offenders operating internationally (Camman, Ferguson, Appell, and Wormith 2011). Transparency can be improved by simply reporting more information in outcome studies, and improving the quality of the research rests on researchers making sound methodological choices.

Conclusion

Criminal justice agencies have a responsibility to provide appropriate services to their populations to enhance public safety. Efforts to infuse these agencies with cultural relevance have come largely as a result of external pressures to reverse the damaging legacies of colonization that have led to the overrepresentation of Indigenous peoples in these systems. Arguably, the effectiveness of these “Indigenization” strategies has yielded equivocal results in many cases, and little to no results in others (e.g., in Canada, the rate of overrepresentation of Indigenous peoples has increased in the last two decades; Mann 2009; Public Safety 2015; Roberts and Melchers 2003; Rudin 2009). Although the criminal justice system often inherits the failures of other systems, it is not exempt from the responsibility of providing effective and humane treatment in order to prepare individuals to transition to productive lives in their community.

Given that most criminal justice systems are comprised of diverse peoples, it is incumbent on these agencies to generate evidence-based knowledge of “what works best for whom”, rather than assuming a one-size-fits-all approach. Accomplishing this requires cultural competence, which can only come via earnest and thorough consultations and collaborations with communities and Indigenous peoples, as well as rigorous empirical validation of program effectiveness. It also requires flexibility and recognition that Indigeneity, in this case, encompasses a diversity of peoples with differing histories and present realities; and therefore cannot be accomplished by utilizing a pan-Indigenous approach. Otherwise, we run the risk of making the same assimilative mistakes of the past. A blended approach, combining culturally-relevant components with conventional principles of effective correctional programming, may ultimately be *necessary* to achieve the best outcomes, with neither component sufficient on its own. Addressing these questions, however, relies on a greater commitment by researchers, practitioners, and governments to support higher quality examinations of these issues in the future.

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