

Child Maltreatment and Intimate Partner Violence Among Indigenous and Non-Indigenous Canadians

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Abstract Indigenous peoples of Canada face an elevated risk of intimate partner violence (IPV) compared to non-Indigenous Canadians. Few empirical studies have been conducted to understand this elevated risk, and none have examined child maltreatment (CM) as a predictor. This study used data on a nationally representative sample of 20,446 Canadians to examine CM and proximal risk factors for IPV against Indigenous and non-Indigenous respondents. Results showed that Indigenous respondents had greater risk of experiencing both CM and IPV. All three forms of CM (exposure to violence, direct physical and/or sexual abuse victimization, as well as both exposure and direct victimization) were associated with increased odds of IPV in adulthood. CM along with proximal risk factors accounted for Indigenous peoples' elevated odds of IPV ($AOR = 1.62$; NS). These results were consistent with the theory that Indigenous peoples' elevated risk of IPV is largely due to effects of historical trauma from past and continuing colonization. Reducing Indigenous peoples' disproportionate risk of IPV requires efforts to reduce CM and its negative

developmental effects among Indigenous peoples as well as resolving the manifestations of historical and contemporary trauma within Indigenous society.

Keywords Colonization · Intimate partner violence · Child abuse · Indigenous · Aboriginal · Violence · Abuse

Indigenous/Aboriginal peoples (including Indian, Inuit, Métis, First Nations of Canada, and American Indian/Alaska Native in the United States) comprised 4.4 % of the Canadian population in 2011 (Morency et al. 2015) and 1.7 % of the population of the United States in 2010 (Norris et al. 2012). Although they represent a small proportion of the total population, it is well established that Indigenous peoples are vulnerable to a number of social ills, including family violence. Despite awareness of Indigenous peoples' unique vulnerability to violence, less is known about the determinants of violence they experience than in any other racial group (Matamonasa-Bennett 2015). The main theory for this vulnerability, known as *colonization theory*, suggests that Indigenous peoples' high risk of family violence stems from the lingering effects of historical trauma, many elements of which are passed across generations. If high rates of family violence in these communities are a manifestation of historical trauma, then it is important to understand the contribution of the intergenerational transmission of violence (IGTV) to Indigenous peoples' elevated risk of intimate partner violence (IPV). However, the association between child maltreatment (CM) and IPV among Indigenous peoples has not been thoroughly examined. The main purpose of this study, then, is to examine the association between maltreatment in childhood and subsequent risk of IPV victimization for Indigenous compared to non-Indigenous Canadians. Based on extant literature, the main hypotheses of the study are that, compared to

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Non-Indigenous Canadians, Indigenous Canadians: 1) have an elevated risk of IPV; 2) have an elevated risk of having experienced CM; 3) are more likely to possess proximal risk factors for IPV; and 4) have a significantly reduced risk of IPV after controlling for CM and proximal risk factors.

Indigenous Peoples' Risk of CM and IPV

Although attention to the issue of family violence in the vulnerable population of Indigenous peoples has increased in recent years, more research is needed. Our literature search identified only seven journal articles that provided the prevalence of one or more forms of CM for Indigenous peoples (Bohn 2003; Brockie et al. 2015; Burnette and Cannon 2014; Duran et al. 2004; Evans-Campbell et al. 2006; Koss et al. 2003; Kunitz et al. 1998; Libby et al. 2005). The reported prevalence of CM varied widely, from a low of 2.7 % of Indigenous males having experienced child sexual abuse (Kunitz et al. 1998), to an overall prevalence of CM (including emotional abuse, physical abuse, sexual abuse and neglect) of 76.5 % (Duran et al. 2004). Those studies that examined multiple types of CM did not find consistent results with respect to the most common forms experienced by Indigenous peoples (Bohn 2003; Brockie et al. 2015; Duran et al. 2004; Koss et al. 2003; Kunitz et al. 1998). Only two studies reported on exposure to IPV, with rates of 40.1 % (Brockie et al. 2015) and 70 % (C. E. Burnette and Cannon 2014). The only study to include a comparison to the non-Indigenous population was by Libby et al. (2005). In a large sample from two American Indian tribes (from the Southwest and Northern Plains), Libby et al. (2005) found that 8 % of the Southwest and 10 % of the Northern Plains tribes experienced physical child abuse. The authors compared their results to data from the National Comorbidity Survey which estimated that 3.3 % of the general population of the United States experienced physical child abuse. This suggests that Indigenous peoples in these tribes had about 2–3 times the risk of physical CM compared to the general population. However, the authors noted methodological differences across the studies that rendered them not directly comparable. In short, while the evidence for an elevated risk of CM is tenuous and based on non-representative samples, research suggests that Indigenous peoples have a higher risk for CM compared to their non-Indigenous counterparts.

A greater number of studies have been done on the risk for IPV among Indigenous peoples. Comprehensive reviews of studies of IPV against Indigenous women (Brownridge 2009) and men (Brownridge 2010) have shown that, similar to studies of CM, investigations into Indigenous peoples' risk of IPV find the prevalence to range widely. Unlike the literature on CM, representative sample studies of IPV have been conducted that include comparison groups of non-Indigenous respondents. These studies have found that Indigenous

women and men have an elevated risk of IPV, with rates at least 2–3 times their non-Indigenous counterparts. For example, Indigenous women in Canada have been shown to have about 4–5 times the odds of IPV victimization compared to non-Indigenous women (Brownridge 2008). Similarly, in Canada Indigenous men's odds of IPV have been reported to be 2–3 times that of their non-Indigenous counterparts (Brownridge 2010).

Explaining Indigenous Peoples' Elevated Risk of CM and IPV: Colonization Theory and the Intergenerational Transmission of Violence

The leading explanation for high rates of family violence against Indigenous peoples is colonization theory (Brownridge 2003). Colonization created the 'American Indian' because theretofore disparate peoples began to share commonalities in experience, expectation, and outlook as a consequence of colonial policies and practices that subjugated Indigenous peoples (Gone and Trimble 2012). Having been repeatedly subjected to historical trauma since colonization, according to colonization theory, Indigenous peoples internalized the oppression experienced over time, manifesting in their thoughts, beliefs, feelings, behaviors, and relationships (Puchala et al. 2010). Moreover, the historical trauma that they experienced was subsequently passed across generations, with each generation experiencing internalized oppression, anger, pain, sadness, and hopelessness (Bombay et al. 2009; Kwan 2015; Menzies 2007). From this approach, current-day Indigenous peoples' elevated risk of IPV can be seen as one among a myriad of consequences of historical trauma from past and continuing colonization (Burnette 2015).

Colonization theory is inherently difficult to prove. However, indications of its veracity can be gleaned from empirical tests of risk factors for IPV. Because colonization theory posits a complex interplay of a constellation of factors arising out of the experience of colonization, this approach would predict that no single risk factor will explain Indigenous peoples' elevated risk of IPV. The few empirical studies that have been done have found that risk factors on which Indigenous peoples are more likely to be represented, such as low socioeconomic status, are important but do not fully account for Indigenous women's elevated risk of IPV (Brownridge 2003, 2008, 2009; Daoud et al. 2013). One study examining Indigenous male victims of IPV found that their higher rates of unemployment and tendency to be younger than non-Indigenous men accounted for their elevated odds of IPV victimization (Brownridge 2010). However, these studies were limited by their small subsamples (e.g., the latter study had 103 Indigenous men) and the exclusion of some important risk factors for IPV, most notably variables measuring a history of CM.

Given Indigenous peoples' unique historical circumstances, it is reasonable to expect that there will be a high rate of IGTV across generations of Indigenous families. For example, the removal of generations of children from their homes and their placement in residential schools reduced opportunities for the transmission of, among other things, family values and parenting knowledge (Menzies 2007). Subjected to forced assimilation, and, in some cases, horrendous abuse in residential schools, some of these children were unable to parent effectively when they became adults (Evans-Campbell 2008). Hence Indigenous peoples' elevated risk of CM and, at least theoretically, an ensuing intergenerational cycle of violence (Moffitt et al. 2013).

There has been little empirical examination of the connection between CM and IPV among Indigenous peoples. A recent review article on Indigenous violence reported that only two studies have examined associations between CM and IPV, leading the authors to recommend further research in this area (Yuan et al. 2015). Bohn (2003) examined a convenience sample of 30 pregnant women who attended a Midwestern Indian clinic and reported that all 14 of the women who were maltreated as children were re-victimized as adults. Yuan et al. (2006) studied correlates of violence among six Native American tribes and found CM to predict women's and men's physical assault victimization, as well as women's sexual assault victimization. Kunitz et al. (1998) also examined the association between child abuse and IPV in a sample of Navajo Indians from a reservation as well as from Indian Health Service catchment areas. Their results showed that child physical abuse increased the risks of both adult domestic violence perpetration and victimization. The consequences of child sexual abuse, however, were unclear. These studies suggested a significant connection between CM and adult IPV among Indigenous peoples. However, they had limited generalizability due to their non-representative samples and exclusion of non-Indigenous comparison groups to allow comment on differences in this relationship between Indigenous and non-Indigenous peoples.

Theoretical Explanations for the Intergenerational Transmission of Violence To better understand the IGTV, it is important to examine its theoretical underpinnings. There are two main theoretical explanations for the IGTV. A *social learning* perspective argues that IGTV results from children learning through the observation of IPV that violence is an acceptable means of resolving conflict with intimate partners (Bandura 1977). Childhood exposure is common among IPV incidents. Current American data suggest that 25 % of children witness violence between their parents in their lifetime (Finkelhor et al. 2015). Canadian data suggest that among spousal violence incidents involving couples with children, more than half (52 %) of the time the children are exposed to the violence (Sinha 2012). Canadian data have shown that

exposed children are 2–3 times more likely to be in a violent relationship as an adult, as victims and/or perpetrators, compared to children that were not exposed to IPV (Johnson 1996). Given the high proportion of childhood exposure to IPV and its strong association with direct involvement in IPV as an adult, it is not surprising that exposure ranks among the most powerful risk factors for adult IPV perpetration and victimization. However, social learning theory cannot account for the fact that the IGTV is not 100 %. A seminal meta analysis reported that the rate of IGTV falls between 25 % and 35 % (Kaufman and Zigler 1987).

An alternative approach to understanding IGTV is a *developmental model*. This approach argues that growing up in an environment that involves maltreatment, including exposure to IPV and/or child abuse, may negatively impact children's ability to regulate their behaviour, emotions, and expectations of the behaviour of others in close relationships (Ehrensaft et al. 2003). Child abuse is associated with numerous negative behavioural and emotional sequelae (e.g., cf. Afifi et al. 2006; Afifi et al. 2014; Stirling and Amaya-Jackson 2008; Odhayani et al. 2013) and has, indeed, been found to increase the risk of IPV in adulthood (e.g., cf. Whitfield et al. 2003). Thus, the developmental model would predict that child physical and sexual abuse, in addition to exposure to violence, will increase the likelihood of IPV victimization in adulthood.

Finally, there is considerable overlap between children who are exposed to IPV and direct victimization from child abuse (Dong et al. 2004; Herrenkohl et al. 2008). Some have proposed that the cumulative risk from IPV exposure and direct victimization in childhood intensifies the risk of IPV in adulthood (aka, the *double whammy*; Ehrensaft et al. 2003; Kalmuss 1984).

These modes of IGTV have not been empirically investigated among Indigenous peoples. Based on existing evidence, it is reasonable to expect that these forms of CM, although experienced by a larger proportion of Indigenous Canadians, will have a similar effect on risk of IPV for Indigenous and non-Indigenous Canadians.

Proximal Risk Factors

According to colonization theory, not only will the traumatic effects of colonization have been transmitted distally across generations, but also the current context of colonization will be evident in the disproportionate representation of Indigenous peoples on a number of risk factors for IPV. For example, a higher proportion of Indigenous than non-Indigenous peoples live in rural areas, partly due to the establishment of rural land reserves. Violent crimes, including IPV, are more likely to occur on rural reserves compared to the rest of Canada (Brzozowski et al. 2006). Other risk factors that have been identified in previous empirical

research on colonization theory (cf. Brownridge 2009) and which were available for analyses with the data used in the current study include: young age; low education; unemployment; alcohol/substance use; partner's dominance; and family size.

Materials and Methods

The Data Set

We used data from Cycle 28 of Statistics Canada's General Social Survey (GSS), which was conducted in 2014¹. The 2014 GSS surveyed a random sample of 33,127 non-institutionalized persons aged 15 years and older living in the 10 Canadian provinces. The survey employed a complex, multi-stage sampling design. All households with telephone numbers were identified through lists of numbers in use (both landline and cellular) and a register of all dwellings in the 10 provinces. When a given household had more than one telephone number, the numbers were ranked in terms of the best number to reach the household. Records were then stratified, contacted by telephone, and one person aged 15 years or older was randomly selected from each household. Interviews were conducted by trained interviewers using computer assisted telephone interviewing techniques. Households without telephones (approximately 1 % of the target population) were not captured by the 2014 GSS sampling procedure. The response rate was 52.9 % (Statistics Canada 2016a).

Respondents completed in-depth telephone interviews concerning the nature and extent of their criminal victimization, including experiences of IPV. Because this study concerned IPV by current and former partners, we selected a subsample of respondents who were either married/living common-law at the time of the survey or who had previously been in a marital/common-law relationship and had contact with their ex-partner within the 5 years preceding the interview ($N = 20,446$ individuals; 49.6 % female)².

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² To ensure that the sample was representative of the Canadian population and to account for the complex sampling design of the 2014 GSS, in all analyses the results were weighted and bootstrapped using STATA 13 with the person weight and bootstrap weights provided by Statistics Canada.

Measurement

Indigenous Identity Respondents identified themselves as either Indigenous (First Nations including both Status and Non-Status Indians, Métis or Inuk/Inuit) or non-Indigenous.

Child Maltreatment CM was assessed using items derived from the Childhood Experiences of Violence Questionnaire (cf. Walsh et al. 2008). Respondents were asked questions on the frequency with which CM occurred before age 15. Following the guidelines of the Childhood Experiences Questionnaire, in this study the childhood exposure to violence and physical abuse variables were coded dichotomously as follows. Exposure to violence was determined by whether the respondent saw or heard any of their parents, step-parents or guardians hit each other or another adult 3 or more times. Respondents were coded as having experienced physical child abuse if: 1) an adult had slapped them on the face, head or ears, or hit them with something hard to hurt them 3 or more times; 2) an adult pushed, grabbed or shoved or threw something at them to hurt them 3 or more times; and/or 3) an adult kicked, bit, punched, burned or physically attacked them in some way at least once. Child sexual abuse was coded as having occurred if the respondent reported that an adult forced or attempted to force them into any unwanted sexual activity, by threatening them, holding them down or hurting them in some way, and/or whether an adult touched them against their will in any sexual way. Respondents who were both exposed to violence between adults and who experienced any form of child abuse (E&CA) were indicated using the aforementioned variables. A CM variable was then created with the following mutually exclusive categories: 1) no child abuse; 2) physical and/or sexual child abuse; 3) exposure to violence; and 4) E&CA.

Proximal Risk Factors Interviewers recorded the respondent's gender and, if necessary, asked respondents to self-report their gender as either male or female. Age in years was self-reported. Education was measured by asking the respondent about the highest level of education that they had attained. Employment was determined by asking the respondent if their main activity in the year prior to the survey was working at a paid job or business (i.e., employed), looking for paid work, going to school, caring for children, household work, retired or something else (i.e., unemployed). The number of children was measured based on the number of children aged 0–14 years who were reported by the respondent to be residing in the household. Rural/Urban residence was derived from the postal code of the respondent's residence. Respondent's heavy drinking was measured with items that asked about the frequency with which the respondent consumed five or more drinks on a single occasion in the month prior to the survey. Respondent's drug use was based on items

asking about the frequency with which the respondent used non-prescription drugs (marijuana, hashish, hash oil or other cannabis derivatives, magic mushrooms, cocaine, speed, methamphetamine, ecstasy, PCP, mescaline or heroin) in the month prior to the survey³. Finally, dominance was measured based on whether the respondent's current/ex-partner prevented them from knowing about or having access to the family income, even if s/he asked for such access.

Violence Eleven behavioral items from a modified version of the Conflict Tactics Scales (CTS; Straus 1979) were used to measure violence. The CTS has been demonstrated to be a valid and reliable measure of IPV (Archer 1999; Straus et al. 1996). IPV was defined as acts of physical assault (having something thrown at you that could hurt; being pushed, grabbed, or shoved in a way that could hurt; being slapped; being hit with something that could hurt; being kicked, bit, or hit with a fist; being beaten; being choked; being threatened with or having a knife or gun used against the respondent), physical threat (being threatened to be hit with a fist or anything else that could hurt), and sexual assault (being forced into any sexual activity by being threatened, held down, or hurt in some way; being subjected to non-consensual sexual activity by means of drugs, intoxication, manipulation or non-physical force) perpetrated by the respondent's current and/or, for those who had been in contact with an ex-partner in the five years prior to the survey, former marital/common-law partner within the five years preceding the interview. Hence, if respondents reported having experienced any of the aforementioned forms of violence within the five years preceding the interview by a current and/or ex-partner they were coded as having experienced IPV. For the descriptive analyses additional IPV variables were derived from the aforementioned IPV variables to examine the prevalence of IPV in the year prior to the survey and to distinguish between less severe (physically threatened; having something thrown; being pushed, grabbed or shoved; being slapped) and severe (being hit; kicked, bit/hit with a fist; beaten; choked; threatened with a knife/gun; sexually assaulted) IPV.

Method of Analysis

To examine the prevalence of IPV and investigate independent variables by Indigenous/non-Indigenous status, we conducted descriptive analyses using cross-tabulations and unadjusted odds ratios (ORs). Logistic regression was used for the multi-variable analyses because it is an appropriate technique for predicting a dichotomous dependent variable from a set of independent variables.

³ This variable was coded dichotomously because it was derived from combining two frequency variables, which rendered impractical maintaining the frequency categories.

Two sets of logistic regressions were conducted. The first involved direct logistic regressions with all of the predictor variables. These analyses allowed examination of the operation of each independent variable in the prediction of violent victimization for Indigenous and non-Indigenous respondents holding constant the effects of all other variables in the model. Also, these analyses allowed comparisons of the operation of these variables for respondents across the two groups.

The second set of regression analyses were sequential logistic regressions. In these regressions, the first model contained only the Indigenous/non-Indigenous status variable while adjusting for gender. In the second model, these variables were entered along with CM variables. In the third model, the Indigenous/non-Indigenous status and gender control variables were entered along with the proximal risk factors. Finally, in the fourth model, the Indigenous/non-Indigenous status and gender control variables were entered along with all of the predictor variables. These sequential logistic regressions allowed an examination of the extent to which controlling for CM and proximal risk factors accounted for the elevated odds of violence against Indigenous relative to non-Indigenous respondents.

Pseudo t-tests were used to compare odds ratios. The calculation of *pseudo t* involved taking the difference between the two regression coefficients and dividing that difference by the square root of the average of the square of the standard errors corresponding to each regression coefficient. We ran simulations in R to test our approach against traditional likelihood ratio tests for significance of the interaction term in a logistic regression. When the logistic regression coefficients were the same (2.5) in random binomial population samples of 750 and 10,000 (similar to the subgroups in our data), false positives occurred in 262 out of 5000 (5.2 %) simulations using the LR test, and in 283 out of 5000 (5.7 %) using *pseudo t*. This was not a significant difference in proportions ($Z = 0.93$, $p = .35$). When simulations were run with a substantial difference in logistic regression coefficients (coefficients of 3 and 2, respectively) in random binomial population samples of 750 and 10,000, false negatives occurred in 2212 cases out of 5000 (43.2 %) simulations using Likelihood Ratio tests and in 1545 cases out of 5000 (30.9 %) using *pseudo t*. This difference in false negative rate was significant ($Z = 13.77$, $p < .001$). We concluded, tentatively, that the *pseudo t* approach may not have serious drawbacks with respect to false positives, and may have benefits in reducing false negatives when comparing logistic regression interaction terms for well-specified models that have an underlying binomial distribution. In spite of large samples and relatively large substantive differences between groups the simulation found the likelihood-ratio test to have a high rate of false

negatives. This suggests the need for research to develop statistical models that are better suited to the study of comparatively rare events such as severe child maltreatment⁴.

Results

Descriptive Analyses

Prevalence of Violence by Indigenous/Non-Indigenous Status Table 1 summarizes the prevalence of IPV victimization for Indigenous and non-Indigenous respondents. Indigenous respondents' risk of experiencing violence was higher than their non-Indigenous counterparts by a factor of three times in the year prior to the survey ($OR = 3.08$; $p < .01$) and by a factor of 2.5 times in the five years prior to the survey ($OR = 2.47$; $p < .001$). The results in Table 1 also showed that Indigenous respondents faced an elevated odds of victimization on both less severe ($OR = 2.53$; $p < .001$) and severe ($OR = 2.98$; $p < .001$) forms of IPV.

Gender Comparisons To determine if gender should be included as a risk factor or a control variable, a number of descriptive comparisons were run. The 5-year prevalence of IPV victimization was slightly higher for male than female respondents (4.3 % vs. 3.6 %; $p < .05$). This gender difference appeared to be due to the non-Indigenous population. Comparing Indigenous females to Indigenous males, there were no significant differences in odds of IPV ($OR = 1.24$; NS). However, non-Indigenous females had 20 % lower odds of reporting IPV victimization compared to non-Indigenous males ($OR = 0.80$; $p < .05$).

The 5-year prevalence of IPV was higher for both Indigenous males and females compared to their non-Indigenous counterparts. Eight percent of Indigenous males compared to 4.2 % of non-Indigenous males reported IPV victimization. Similarly, the corresponding figures for females were 9.8 % and 3.4 %, respectively. A *pseudo t*-test of unadjusted odds ratios suggested that the difference in elevated risk of IPV for Indigenous males ($OR = 2.00$; 95 % CI = 1.08, 3.69; $p < .05$) and females ($OR = 3.07$; 95 % CI = 1.87, 5.04; $p < .001$) was not statistically significant (*pseudo t* = -1.51).

Clearly, gender did not appear to be a risk factor for Indigenous respondents in these data. However, given indications of gender differences in the total sample, the decision was made to control for gender in all multivariate analyses.

Table 1 Prevalence (%) and unadjusted odds (OR) of IPV against Indigenous and non-Indigenous respondents

| | Indigenous (n = 705) | Non-Indigenous (n = 19,741) | OR [95 % CI] |
|-------------------|-------------------------|--------------------------------|-----------------------|
| 1-year prevalence | 3.3 | 1.1 | 3.08 [1.48, 6.41] ** |
| 5-year prevalence | 8.9 | 3.8 | 2.47 [1.69, 3.60] *** |
| Less severe IPV | 8.8 | 3.7 | 2.53 [1.73, 3.71] *** |
| Severe IPV | 7.3 | 2.6 | 2.98 [1.94, 4.58] *** |

* $p < .05$; ** $p < .01$; *** $p < .001$

Independent Variables by Indigenous/Non-Indigenous Status Table 2 provides the results of the cross-tabulations of the independent variables by Indigenous/non-Indigenous status. Results showed that Indigenous respondents were more likely to have experienced maltreatment prior to age 15 ($p < .001$). Forty-two percent of Indigenous respondents reported having been abused as children compared to 25 % of non-Indigenous respondents. Indigenous respondents were also more likely to report each type of CM. For both ethnic groups, the largest group of child abuse victims was those who experienced physical and/or sexual abuse. One quarter of Indigenous respondents experienced physical/sexual child abuse compared to 19 % of non-Indigenous respondents. Indigenous respondents were twice as likely to have been exposed to violence as children and three times as likely to have experienced the both exposure and direct physical/sexual victimization.

With respect to proximal risk factors for IPV, the results in Table 2 showed that Indigenous respondents were more likely to be young ($p < .05$), less well-educated with half as many Indigenous as non-Indigenous respondents holding a university degree ($p < .001$), and unemployed ($p < .05$). Indigenous and non-Indigenous respondents did not differ with respect to the number of young children living in the household but Indigenous respondents were more likely to be living in a rural area ($p < .001$). The frequency of heavy drinking was reported at similar rates for both groups. However, those who consumed alcohol heavily five or more times in the month prior to the survey were more likely to be Indigenous ($OR = 1.68$; $p < .05$). Drug use was more than twice as common among Indigenous compared to non-Indigenous respondents ($p < .001$) and Indigenous respondents were also more than twice as likely to have a partner that dominated them through control of the family finances ($p < .001$).

Multiple Logistic Regression Analyses

Table 3 provides the results of the direct logistic regressions for Indigenous and non-Indigenous respondents. Results showed that CM was associated with high odds of IPV for both Indigenous and non-Indigenous respondents. Due to the

⁴ Interested readers are invited to contact either Dr. Emery or Dr. Brownridge for an appendix that details the simulations that were conducted on methods for comparing differences between logistic regression coefficients across two groups.

Table 2 Distribution of independent variables by Indigenous/Non-Indigenous status (%) and unadjusted odds ratios (OR)

| Independent Variables | Indigenous (n = 705) | Non-Indigenous (n = 19,741) | OR [95 % CI] |
|--|-------------------------|--------------------------------|-----------------------|
| Child Maltreatment | | | |
| None | 58.2 | 74.7 | 1.00 |
| Physical and/or sexual abuse | 25.4 | 19.4 | 1.69 [1.32, 2.15] *** |
| Exposure to violence | 3.7 | 1.8 | 2.68 [1.35, 5.33] ** |
| Exposure & child abuse | 12.8 | 4.2 | 3.92 [2.83, 5.43] *** |
| Proximal Risk Factors | | | |
| Respondent Age | | | |
| 15–34 years | 20.9 | 17.7 | 1.44 [1.08, 1.92] * |
| 35–54 years | 47.5 | 43.7 | 1.32 [1.07, 1.64] * |
| 55 years and older | 31.6 | 38.5 | 1.00 |
| Respondent Education | | | |
| Less than high school | 14.7 | 10.2 | 3.03 [2.09, 4.37] *** |
| High school | 34.2 | 22.9 | 3.13 [2.23, 4.38] *** |
| Non-university diploma/certificate | 33.2 | 31.7 | 2.19 [1.57, 3.06] *** |
| Diploma/certificate (non-degree) from university | 3.1 | 4.2 | 1.53 [0.79, 2.97] |
| University degree | 14.8 | 31.0 | 1.00 |
| Respondent Employment | | | |
| Unemployed | 15.1 | 11.1 | 1.43* |
| Employed | 84.9 | 88.9 | 1.00 |
| Children <15 | | | |
| None | 63.4 | 68.1 | 1.00 |
| One | 15.9 | 13.9 | 1.23 [0.93, 1.62] |
| Two | 13.7 | 13.1 | 1.12 [0.85, 1.48] |
| Three or more | 7.1 | 4.9 | 1.54 [1.00, 2.39] |
| Rural Residence | | | |
| Rural | 31.4 | 19.6 | 1.88 [1.52, 2.33] *** |
| Urban | 68.6 | 80.4 | 1.00 |
| Respondent Heavy Drinking | | | |
| Never | 73.6 | 75.7 | 1.00 |
| Once | 10.6 | 9.9 | 1.11 [0.79, 1.54] |
| 2–4 times | 10.3 | 11.1 | 0.96 [0.69, 1.33] |
| 5 times or more | 5.5 | 3.4 | 1.68 [1.02, 2.76] * |
| Respondent Drug Use | | | |
| Yes | 12.0 | 4.6 | 2.84 [2.05, 3.94] *** |
| No | 88.0 | 95.4 | 1.00 |
| Partner Dominance | | | |
| Yes | 4.5 | 2.0 | 2.31 [1.50, 3.56] *** |
| No | 95.5 | 98.0 | 1.00 |

*p < .05 **p < .01; ***p < .001

much smaller sample of Indigenous relative to non-Indigenous respondents, the odds ratios were, with one exception, not statistically significant for this group. However, a comparison of the odds ratios across the two groups using *pseudo t*-tests suggested that they were not significantly different on most variables. Among the different CM variables, for both groups respondents that experienced E&CA had the

highest odds of IPV victimization as adults, having more than 2.5 times the odds of reporting experiencing IPV compared to their counterparts who were not maltreated as children.

With respect to proximal risk factors, the results in Table 3 showed that age was similarly negatively associated with IPV in both groups. On the other hand, the *pseudo t*-tests showed that education and employment variables had a significantly

Table 3 Results of direct logistic regressions for Indigenous and Non-Indigenous respondents

| Independent Variables | Indigenous AOR [95 % CI] | Non-Indigenous AOR [95 % CI] | Indigenous vs. Non-Indigenous <i>Pseudo t</i> -test | Indigenous vs. Non-Indigenous interactions (AOR) |
|------------------------------|-----------------------------|---------------------------------|---|--|
| Female | 0.87 [0.31, 2.45] | 0.81 [0.65, 1.00] | 0.19 | 1.73 |
| Child Maltreatment | | | | |
| Physical and/or sexual abuse | 2.12 [0.66, 6.83] | 1.86 [1.45, 2.38] *** | 0.31 | 0.90 |
| Exposure to violence | 1.48 [0.21, 10.47] | 1.92 [1.12, 3.30] * | -0.36 | 0.46 |
| Exposure and child abuse | 2.56 [0.65, 10.03] | 2.65 [1.85, 3.81] *** | -0.07 | 0.79 |
| Proximal Risk Factors | | | | |
| Respondent Age | 0.97 [0.93, 1.01] | 0.96 [0.95, 0.96] *** | 1.07 | 1.00 |
| Respondent Education | 1.13 [0.89, 1.44] | 0.97 [0.92, 1.02] | 1.73* | 1.12 |
| Respondent Unemployed | 2.81 [0.74, 10.68] | 0.64 [0.45, 0.90] * | 2.99** | 4.49** |
| Children <15 | 1.12 [0.78, 1.63] | 1.04 [0.93, 1.16] | 0.55 | 1.16 |
| Rural Residence | 1.35 [0.48, 3.93] | 0.81 [0.62, 1.06] | 1.31 | 1.94 |
| Respondent Heavy Drinking | 0.99 [0.81, 1.21] | 1.05 [1.01, 1.08] * | -0.71 | 0.92 |
| Respondent Drug Use | 1.78 [0.60, 5.23] | 3.02 [2.23, 4.10] *** | -1.32 | 0.45 |
| Partner Dominance | 6.20 [2.05, 18.71] ** | 12.72 [9.05, 17.88] *** | -1.72* | 0.55 |
| Constant | 0.03 [0.00, 2.03] | 0.31 [0.12, 0.81] * | | |
| χ^2 | 2.13 | 39.82 *** | | |

AOR = adjusted odds ratio

* $p < .05$; ** $p < .01$; *** $p < .001$

different impact on the odds of IPV for Indigenous and non-Indigenous respondents. While having no effect for non-Indigenous respondents, for Indigenous respondents each unit of increase in years of education was associated with a 13 % increased odds of IPV victimization. As well, although unemployment was associated with 26 % reduced odds of IPV for non-Indigenous respondents, it was associated with 181 % increased odds of IPV for Indigenous respondents. The number of children in the home and living in a rural area were not significant risk factors for either group. Heavy alcohol consumption was associated with increased odds of IPV victimization only for non-Indigenous respondents, for whom each additional occurrence of heavy drinking in the month prior to the survey was associated with a 5 % increased odds of IPV ($p < .05$). The respondent's drug use was associated with 78 % increased odds of IPV for Indigenous respondents and 202 % increased odds of IPV for non-Indigenous respondents ($p < .001$). Finally having a domineering partner via control of access to the family finances was associated with large increases in the odds of IPV for both groups. For Indigenous respondents having such a partner was associated with 6.2 times the odds of IPV ($p < .01$), and non-Indigenous respondents with domineering partners had 12.7 times the odds of IPV ($p < .001$), compared to their counterparts without domineering partners. The *pseudo t*-test suggested that the impact of having a domineering partner on the odds of IPV was larger

for non-Indigenous than Indigenous respondents (*pseudo t* = -1.72; $p < .05$).

Results of the sequential logistic regressions are presented in Table 4. The first model showed that, controlling for sex, Indigenous respondents had 146 % greater odds of experiencing IPV compared to non-Indigenous respondents ($p < .001$). In the second model the CM variable was entered. Controlling for CM, Indigenous respondents had 124 % increased odds of IPV victimization ($p < .001$). In Model 3 the proximal risk factors were entered. With controls for proximal risk factors Indigenous respondents had 75 % greater odds of IPV victimization relative to non-Indigenous respondents. Model 4 controlled for both CM and proximal risk factors. This model resulted in a significant reduction in Indigenous respondents' odds of IPV (Model 1 vs. Model 4 *pseudo t* = 1.89; $p < .05$) such that their odds of IPV were no longer significantly elevated relative to non-Indigenous respondents. The results in Table 4 also showed that significant predictors of IPV in Model 4 were CM, respondent's age, alcohol and drug use, as well as having a domineering partner.

Discussion

The current investigation was one of a handful of studies to examine the elevated risk of IPV for Indigenous peoples, and

Table 4 Results of sequential logistic regressions for Indigenous relative to Non-Indigenous respondents

| Independent Variables | Model 1 Indigenous/ Non-Indigenous AOR [95 % CI] | Model 2 Child Maltreatment AOR [95 % CI] | Model 3 Proximal Risk Factors AOR [95 % CI] | Model 4 Full Model AOR [95 % CI] |
|------------------------------|---|---|--|--|
| Indigenous | 2.46 [1.69, 3.59] *** | 2.24 [1.51, 3.32] *** | 1.75 [1.10, 2.79] * | 1.62 [1.00, 2.63] ^a |
| Female | 0.83 [0.68, 1.00] | 0.85 [0.70, 1.03] | 0.81 [0.65, 1.00] | 0.81 [0.66, 1.01] |
| Child Maltreatment | | | | |
| Physical and/or sexual abuse | | 2.10 [1.67, 2.64] *** | | 1.87 [1.43, 2.39] *** |
| Exposure to violence | | 1.94 [1.21, 3.12] * | | 1.75 [1.05, 2.93] * |
| Exposure & child abuse | | 2.97 [2.11, 4.16] *** | | 2.61 [1.85, 3.70] *** |
| Proximal Risk Factors | | | | |
| Respondent Age | | | 0.96 [0.95, 0.97] *** | 0.96 [0.95, 0.96] *** |
| Respondent Education | | | 0.97 [0.92, 1.02] | 0.98 [0.93, 1.03] |
| Respondent Unemployed | | | 0.77 [0.55, 1.07] | 0.76 [0.54, 1.06] |
| Children <15 | | | 1.04 [0.93, 1.15] | 1.04 [0.94, 1.16] |
| Rural Residence | | | 0.82 [0.64, 1.06] | 0.87 [0.67, 1.12] |
| Respondent Heavy Drinking | | | 1.04 [1.02, 1.08] * | 1.04 [1.01, 1.07] * |
| Respondent Drug Use | | | 3.14 [2.33, 4.23] *** | 2.89 [2.14, 3.90] *** |
| Partner Dominance | | | 14.49 [10.59, 19.82] *** | 12.14 [8.75, 16.85] *** |
| Constant | 0.04 [0.04, 0.05] *** | 0.03 [0.03, 0.04] *** | 0.38 [0.15, 0.94] * | 0.29 [0.11, 0.74] * |
| χ^2 | 13.42 *** | 20.62 *** | 53.61 *** | 41.86 *** |

AOR = adjusted odds ratio

^a Difference in odds between Models 1 and 4 is significant (*pseudo t* = 1.89; *p* < .05)

p* < .05; *p* < .01; ****p* < .001

the first to examine the role of CM. The first hypothesis of the study, which predicted that Indigenous respondents would have an elevated risk of IPV, was supported. Results showed that Indigenous respondents had 2.5–3.1 times the odds of IPV victimization compared to non-Indigenous respondents. This elevated risk existed regardless of time frame (1-year vs. 5-year) and severity of the violence (less severe vs. severe). It is important to note, however, that the results also showed that the vast majority of both Indigenous (91 %) and non-Indigenous (96 %) respondents did not report having experienced IPV in the five years prior to the survey. As noted in the review of the literature, past studies have found wide variability in prevalence. There are many potential explanations for this variability. For instance, sampling can be a factor with community-based samples tending to find lower rates than reserve-based samples (Evans-Campbell et al. 2006). Similarly, the current study was based on a crime victim survey. Surveys with contexts in which violence is restricted to criminal assault are known to produce lower estimates of IPV than surveys in which the context is one of relationship conflict (Dutton 2006). The focus of the current study, however, was to understand what places Indigenous respondents at a higher risk compared to their non-Indigenous counterparts, and so the actual prevalence was less important than the difference in prevalence between the two groups.

It was also hypothesized that, in addition to IPV, Indigenous respondents would have an elevated risk of CM. This hypothesis was also supported with 42 % of Indigenous respondents compared to 25 % of non-Indigenous respondents reporting a history of CM. Moreover, Indigenous respondents were more likely to report having experienced each of the individual forms of CM. It is important to note that, to allow testing different modes of IGTV in the current study, the CM variable was coded with mutually exclusive categories. Thus, readers should not interpret the percentages on the individual forms of CM as representing the overall prevalence of the forms of CM. For example, the ‘exposure to violence’ category included those respondents that reported experiencing exposure but who did not report experiencing any other forms of CM (i.e., physical and/or sexual or E&CA). Because, as noted in the review of the literature, exposure and direct victimization tend to co-occur, many of those who were exposed fell into the E&CA category. Hence, readers should not conclude that, for instance, the rate of exposure for Indigenous peoples is 3.7 % because this would undercount those who were exposed in the E&CA category.

In terms of the IGTV, results showed that, as social learning theory would predict, childhood exposure to violence is associated with an increased risk of IPV. But, for both Indigenous and non-Indigenous respondents, among the three forms of

CM, exposure alone had the lowest impact on the odds of IPV. Consistent with a developmental model, direct physical and/or sexual child abuse victimization was also a strong predictor of IPV in adulthood. Moreover, among the three child abuse groups, for both Indigenous and non-Indigenous respondents, those who experienced both exposure and direct child abuse victimization had the highest risk of IPV.

The third hypothesis, that Indigenous respondents would be more likely to possess proximal risk factors associated with IPV, was supported. With the exception of the number of young children in the household, Indigenous respondents were more likely to report proximal risk factors that have been associated with IPV in past research. That is, Indigenous respondents were more likely to be young, have lower levels of education, be unemployed, live in rural area, engage in heavy drinking 5 or more times in the previous month, use illegal drugs, and have a domineering partner. Moreover, the direct logistic regressions showed that young age, low education, unemployment, drug use, and having a domineering partner all were associated with Indigenous respondents' increased odds of experiencing IPV.

The final hypothesis was also supported. That is, the sequential logistic regressions showed that Indigenous respondents' elevated odds of IPV were significantly reduced after controlling for CM and proximal risk factors. Indeed, with these controls Indigenous respondents' elevated odds were reduced by 84 % such that they no longer had significantly elevated odds of IPV. The risk factors that were significant in this model (cf. Model 4 in Table 4), combined with insights from the descriptive and direct logistic regression analyses, are informative as to the dynamics leading to Indigenous respondents' elevated odds of IPV. The direct logistic regressions showed that there were two risk factors which were associated with IPV only for Indigenous respondents; low education and unemployment. In one of the few empirical studies of Indigenous women's elevated risk of IPV, it was found that socioeconomic position (as measured by education and low income cut-off after tax) accounted for half of the sampled Indigenous mothers' elevated odds of IPV (Daoud et al. 2013). This led the authors to conclude that improving Indigenous women's socioeconomic position would remove most of their elevated risk of IPV. However, as the sample was based on Canadian-born mothers of singletons, the results were not generalizable to the general population. In the current study the full model showed that the economic indicators were not significant predictors. These results suggested that socioeconomic differences were not responsible for Indigenous respondents' elevated odds of IPV in the Canadian population. Indeed, the data suggested that it was not a matter of risk factors operating differently for Indigenous respondents, but, rather, the fact that Indigenous respondents were more likely to be represented on significant risk factors. In other words, the significant risk factors in the full model were important

predictors for both groups, but Indigenous respondents were more likely to possess these risk factors. Specifically, Indigenous respondents were more likely to have a history of CM, to be young, to frequently engage in heavy drinking, to use illegal drugs, and to have a domineering partner. These factors appeared to account for their elevated odds of IPV. Indigenous peoples' higher representation on these risk factors, be they distal or proximal, can be tied to their unique history of colonization. Interestingly, the current study showed that controlling for proximal risk factors alone did not fully account for Indigenous respondents' elevated risk. This has also been found in previous empirical examinations of Indigenous women's elevated risk of IPV from a current partner (Brownridge 2003, 2008, 2009; Daoud et al. 2013)⁵. Rather, it is the distal risk factor of CM, which is even more clearly connected to Indigenous peoples' past and continuing colonization, that needed to be included to fully account for their elevated risk of IPV. These results are consistent with the theory that the high rates of family violence victimization observed among Indigenous peoples are linked to historical trauma from colonization.

Limitations

Several limitations of this study must be borne in mind when extrapolating from the results. First, the representativeness of the data was impacted by the exclusion of individuals without landline or cellular telephones. This may have affected the representativeness of Indigenous peoples living on reserves because our experience suggests that they are less likely than non-reserve residents to have telephones. Moreover, the greater representation of Indigenous peoples in the lower socioeconomic strata may result in them being less likely than non-Indigenous Canadians to have telephones. Second, the survey was limited to respondents that could speak in English or French. Thus, potential respondents that could not speak in either of Canada's official languages were excluded from the sample. However, this was unlikely to have impacted the results of the study given that, according to the 2011 Census, only 1.8 % of Canadians speak neither English nor French (Statistics Canada 2016b). Third, the use of a secondary data set collected by Statistics Canada resulted in measurement limitations. In particular, all but one of the risk factors were specific to the respondent rather than their current/ex-partner.

⁵ In a study that focused only on post-separation violence against women, it was found that controls for age, an index of coercive control, and stalking by the ex-partner removed the significance of Aboriginal women's odds of post-separation IPV relative to non-Aboriginal women (AOR = 1.92; $p = .09$; Pedersen et al., 2013). When the focus is only on post-separation violence, where the motives for men's use of violence are theorized to be more proximal (Brownridge 2006), it is theoretically reasonable that proximal risk factors could account for Aboriginal women's elevated odds of victimization.

Future research should include more characteristics of the perpetrators to enhance our understanding of this phenomenon. Fourth, although the GSS collected information on childhood experiences of physical abuse, sexual abuse, and exposure to IPV, measures of childhood emotional maltreatment and neglect were not assessed in the survey. Thus, we could not assess the association of all forms of CM with IPV victimization. Fifth, the survey was based on self-reports of victimization. This may lead to underreporting the true prevalence of violence both consciously (socially desirable responding) and unconsciously (recall bias) (Chan 2011; Gelles 1990). Unfortunately, Statistics Canada did not include in their survey a measure of social desirability, which would have allowed an assessment of the extent to which this may have impacted admissions of IPV victimization. The use of a 5-year time frame combined with the relative salience of IPV rendered recall bias unlikely to have contributed to underreporting IPV in the current study. Finally, respondents were asked only about victimization, and so it was not possible to establish the extent to which IPV was bi-directional using these data.

Conclusions and Implications

Although, as stated at the outset of this article, Indigenous peoples comprise a small proportion of the total population of Canada, Indigenous Canadians have a higher growth rate than the non-Indigenous population. For example, it has been projected that by 2036 the proportion of Indigenous peoples in Manitoba, which, along with Saskatchewan, has the largest Indigenous population relative to the size of the total population among the 10 provinces, will fall somewhere between 17.6 % and 21.3 % (Morency et al. 2015). If more is not done to reduce family violence among Canada's Indigenous peoples, there will be exponentially more Indigenous CM and IPV victims in the future. Indeed, the results of the current study, which established that Indigenous peoples had an elevated risk of CM and that they continued to have an elevated risk of IPV, clearly demonstrated that violence prevention efforts are needed to reduce rates of both CM and IPV in this vulnerable population.

The results of the current study were consistent with colonization theory, suggesting that violence prevention efforts need to, where possible, include foci on Indigenous peoples' disproportionate representation on risk factors as well as treating historical and contemporary trauma within Indigenous society. With respect to the former, it would appear that reducing Indigenous children's maltreatment may also help to reduce their risk of IPV. It has been suggested that preventing Indigenous children's exposure may be crucial for dealing with violence in Indigenous communities (Moffitt et al. 2013).

The results of the present study show that violence prevention efforts need to focus not only on exposure but also on the developmental consequences of the experience of various forms of child abuse. The negative effects of abuse on children may, fortunately, potentially be overcome in a number of ways, including: if the child has the love and support of at least one parent; if they are in a loving, supportive relationship as an adult; if they have fewer stressful life events; and if they acknowledge their victimization and are determined not to repeat it (Kaufman and Zigler 1987). There is also evidence that involvement in therapy can reduce the negative impact of CM (Wathen and MacMillan 2013).

Culturally relevant, effective programs are needed to assist Indigenous peoples. If, as colonization theory suggests, parenting knowledge was lost as a consequence of colonization and forced assimilation, efforts are needed to assist Indigenous peoples with appropriate parenting. In terms of treating historical and contemporary trauma, it is evident that efficacious solutions need to be tailored to, and chosen by, Indigenous peoples. It is possible that Indigenous self-government, which allows Indigenous peoples some autonomy to have control over matters of special importance to them (Frideres 2001), would create a context that would help to establish the conditions necessary to reduce historical trauma and its externalized manifestations that contribute to Indigenous peoples' elevated risk of IPV.

In addition, significant investment in community-based mental health and emotional healing programs is imperative. Indeed, the recent report of the Truth and Reconciliation Commission specifically called for such initiatives, in recognition of the devastating impact that residential schools had on the cohesion of Indigenous communities (Truth and Reconciliation Commission of Canada 2015). Continued investments are required to right the wrongs, move away from crisis intervention towards strength-based culturally-informed strategies and programs, and ensure that future generations of at risk Indigenous families are supported in the development of healthier parenting and coping skills. A systematic review, while demonstrating that additional research is needed to inform interventions, suggests the need to focus on multiple levels, including: population-level support such as parenting support, role modelling and active participation; the provision of support for at risk families such as home visiting programs; and healing circle as well as group counselling to prevent IPV recurrence (Shea et al. 2010).

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