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Aboriginal and non-Aboriginal women perpetrators of violence: a trial of a prison-based intervention (Beyond Violence)

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Abstract

Women who use violence represent one of the fastest growing Australian prisoner populations. Many women report histories of adverse childhood experiences and intimate partner violence, resulting in an interest into the gender-specific complexities in addressing female violence in the prison setting. Between 2017 and 2021 we implemented the before-and-after trial of Beyond Violence, a gender-specific violent behaviour intervention, in several Western Australian women's prisons. This baseline study examined participant's sociodemographic characteristics including cultural status, intimate partner violence, childhood adversities and head injury. We found Aboriginal women were more likely to report that a family member was incarcerated as a child, than those who did not identify as Aboriginal ($p=0.001$). There was an association between an increased number of ACEs and head injury resulting in a loss of consciousness ($p=0.008$), of which 47% indicated that this was a result of intimate partner violence. The results present a harrowing picture of early exposure to adversity and violence suggesting that successful rehabilitation of women in prison should consider female violence trajectories experienced as both victim and offender.

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Introduction

Women represent one of the fastest growing groups in the Australian prisoner population (Australian Institute of Health and Welfare, 2020). Between 2010 and 2022 female incarceration for violent offences in Australia increased by 92% (Australian Bureau of Statistics, 2010; Australian Bureau of Statistics, 2022) while the male population between 2009 and 2019 increased by 45% (Australian Institute of Health and Welfare, 2020). This trend cannot be explained as natural population growth (Walmsley, 2017; Australian Institute of Health and Welfare, 2020). Aboriginal and Torres Strait Islander women are significantly over-represented in Australian prisons accounting for more than one third of incarcerated females (38%), despite comprising only 3% of Australia's total female population (Australian Institute of Health and Welfare, 2022). Similarly, among men Aboriginal and or Torres Strait Islander males in prison account for 31% of the total prison population (Australian Institute of Health and Welfare, 2022). For the rest of this article, when we speak of Aboriginal women, we include those who identify as Aboriginal, Torres Strait Islander, and Aboriginal and Torres Strait Islander, and use the term interchangeably with Indigenous. Over the past decade the number of Aboriginal women incarcerated for violent offences increased by 66% compared with a 20% increase among non-Aboriginal women (Australian Bureau of Statistics, 2022). This relatively greater increase has been attributed to the residual, accumulative effects of colonisation and post-colonial policies and procedures which continue to extend into the lives of Aboriginal women, their children, families and community, as intergenerational trauma (Atkinson et al., 2014; Sullivan et al., 2019, Friestad et al., 2014; Messina & Calhoun, 2021; Wilson et al., 2017; Rossegger et al., 2009).

Whist the experience of trauma is not exclusive to members of any given cultural, racial or religious group in Australia, trauma-related behaviours such as the use of violence and corresponding victimisation is prevalent among the most disadvantaged and disconnected

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communities (Atkinson et al., 2014). The relationship between substance use and offending is well established (Egeressy et al., 2009; Loxton et al., 2021; Messina et al., 2016), where misuse is understood to be a symptom of trauma (Loxton et al., 2021; Messina et al., 2016). A report undertaken by the Western Australia Office of the Inspector of Custodial Services (2014), found that standard (i.e., non-gender specific) interventions for high-risk substance use resulted in a lower recidivism rate for males, yet higher rates for women. Flemming and colleagues (2001) propose that the factors which underpin offending for females are not the same for males, and non-gender specific programs do not meet the needs of incarcerated women, particularly those at a high risk of reoffending (Fleming et al., 2001). Prison programs addressing violence have stemmed primarily from the needs of male offenders, focussing on the discontinuation of cyclic patterns of violence predominately relating to family and sexual violence, and aggression (Rossegger et al., 2009). Notwithstanding the victimisation and oppression widely experienced by those in prison (Australian Institute of Health and Welfare, 2020), there is disparity between male and female needs when addressing violence and recidivism (Craig et al., 2019; Jones et al., 2020).

Childhood physical and sexual violence and abuse, neglect, and household dysfunction feature prominently in the backgrounds of incarcerated women (Egeressy et al., 2009; Fleming et al., 2001; Friestad et al., 2014; Loxton et al., 2021; Messina & Zwart, 2021; Messina et al., 2016). Such exposures have been termed ‘adverse childhood experiences’ (ACEs), and represent well documented risk factors for poor education and employment outcomes, health risk behaviours including alcohol and other drug use, health conditions including heart disease and mental illness, homelessness, and acts of violence into adulthood (Craig et al., 2019; Friestad et al., 2014; Jones et al., 2020; Jones et al., 2018; Loxton et al., 2019; Messina & Calhoun, 2021). As such, ACEs may have a profound and lasting negative impact on individuals’ abilities to successfully function and flourish (Stensrud et al., 2019). The relationship between substance-use and recidivism is well established in the literature (Covington, 2015; Craig et al., 2019;

Eaves et al., 2020; Felitti et al., 1998; Kubiak et al., 2016), and is common among those who have experienced adverse childhood experiences (Craig et al., 2019; Eaves et al., 2020). ACEs include witnessing or directly experiencing physical, emotional and sexual abuse; physical and emotional neglect; witnessing violence in the home; residing with a family member suffering from a mental illness or who has attempted suicide; the separation or divorce of parents; exposure to household members using alcohol and illicit substances and having a family member be incarcerated (Felitti et al., 1998). Such exposures are not uncommon in the general population, especially if limited to three or fewer ACEs (Jones et al., 2020; Loxton et al., 2021; Loxton et al., 2019; Stensrud et al., 2019).

A recent study into the health behaviour of 8607 young Australian women (Loxton et al., 2021), identified that in those aged between 20 and 25 years, 41% reported no adverse events at all, 26% reported one ACE, 23% experienced between two and three, and 10% experienced more than four ACEs during childhood. Up to 90% of incarcerated female populations in the United States are reported to have experienced childhood adversity at elevated levels (Jones et al., 2020; Jones et al., 2018). Previous studies describe a dose-response relationship between ACEs, socio-economical vulnerabilities and negative health impacts (e.g. substance use) as well as victimisation in the form of domestic and intimate partner violence (Dube et al., 2002; Loxton et al., 2019; Messina et al., 2016; Stensrud et al., 2019). Cyclic patterns of victimisation, beginning in childhood and repeated throughout adult relationships, are considered a contributing factor for female anger and aggression (Kubiak et al., 2017; Messina & Calhoun, 2021). Importantly, research indicates that the accumulation of ACEs and victimisation throughout childhood extending into adulthood in the form of domestic and intimate partner violence, lays the foundation for female aggression and perpetration of violence (Craig et al., 2019; Friestad et al., 2014; Messina & Calhoun, 2021). These predominately gendered factors pose significant challenges for the way females are rehabilitated and supported in Australian prisons (Craig et al., 2019; Friestad et al., 2014; Messina & Calhoun, 2021). Historically, few

interventions have been developed to address the needs of incarcerated women who are both victims and perpetrators in the prevention of violence (Kubiak et al., 2016; Messina et al., 2016). Yet growing evidence suggests that programs developed which privilege the female experience of victimisation and their unique criminogenic needs, are demonstrating improved outcomes extending beyond the reduction in recidivism in comparison to gender-neutral interventions (Kubiak et al., 2016; Messina & Zwart, 2021; Messina & Calhoun, 2021). While there is some existing evidence illustrating the prevalence of ACEs among Australian prisoners more broadly (Egeressy et al., 2009), little information exists regarding the burden of ACEs among incarcerated females in Australia, particularly those incarcerated for violent offences.

We report the prevalence of ACEs in a sample of Aboriginal and non-Aboriginal women in Western Australian prisons participating in a trial of an intervention for women who use violence, Beyond Violence (BV) (Covington, 2015).

Methods

Study design

We used data from a sample of females incarcerated for current or historical (<5 years) violent offences, who participated in a before-and-after trial of the BV intervention program in Western Australia. BV is a manualised trauma-informed intensive intervention, developed in the USA to address the gendered gap in the prevention of further female violent behaviours and substance use (Covington, 2015; Jones et al., 2018; Loxton et al., 2019; Messina et al., 2016). Modifications were made prior to, and during the initial pilot phase to adapt the program for the Australian context and ensure it is culturally safe for Aboriginal women.

Ethics

This research received ethics approval from Curtin University (HR88/2016); the West Australian Aboriginal Ethics Committee (Ref. 704); and the WA Department of Corrective Services (Project ID – 395).

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Setting

Beginning in October 2017, both Aboriginal and non-Aboriginal women were recruited from three adult women's prisons in WA to participate in the BV trial.

Recruitment

One hundred and sixty-seven participants were recruited between October 2017 and June 2021. Controls were recruited first to avoid contamination once the intervention phase commenced and to ensure there was no opportunity for BV participants to disclose program content and treatment processes among other prisoners, nor to potential future recruits. Inclusion criteria required women to have at least one prior conviction for a violent offence, as classified by the Australian and New Zealand Standard Offence Classification codes 01-06 (01 homicide and related offences; 02 acts intended to cause injury; 03 Sexual assault and related offences; 04 dangerous and negligent acts endangering persons, 05 abduction, harassment and other offences against the person and 06 robbery, extortion and related offences), have a minimum of three months remaining on their current sentence, willing to have a baseline interview upon entry into the program, agree to be followed-up at three, nine and 15 months post release, consent to allow access to offending records using data-linkage for a period of 10 years, and able to provide informed consent. Exclusion criteria included severe mental illness or profound cognitive impairment, an inability to communicate in English, and subject to deportation upon release. Participants were initially identified for the program by WA Corrective Services staff, and subsequently approached by Research Officers to establish a willingness to participate and to be screened for eligibility. Recruitment also occurred through promotional posters and word-of-mouth within the three prisons. Offending was objectively verified through the administrative Total Offender Management Solution (TOMS) database held by WA Corrective Services.

Data Collection and Measures

Baseline structured screening and interviews were conducted by research officers employed by

the study with individuals in a private setting within the prison complex. Interviews typically took between 45 minutes to two hours to complete. Interviews included standardised self-report questionnaires covering socio-demographic characteristics, and histories of violence perpetration and victimisation; criminogenic risks including educational attainment, juvenile offending history, substance use, child protective services involvement and family removal (many Aboriginal and/or Torres Strait Islander children were forcibly removed from their families as a result of government policies that spanned more than 60 years from 1910 into the 1970s; and family and intimate partner violence including head-injury and non-fatal strangulation. Non-fatal strangulation screening was introduced to the baseline questionnaires as a separate self-reporting questionnaire after it emerged as a significant issue on the Intimate Partner Violence Screening Tool. The above events are not necessarily mutually exclusive however screened for separately.

Adverse events in childhood (defined as an adverse event occurring before the age of 18 years) across the domains of abuse, neglect and household dysfunction were measured by the Adverse Childhood Experience Questionnaire (Friestad et al., 2014; Jones et al., 2018). Some respondents did not complete all the questionnaires and were omitted from the analysis where applicable.

Analysis

Sociodemographic characterises, incarceration history, and substance use at baseline, as well as screening data on the prevalence of adverse childhood experiences, intimate partner violence and injury were summarised by descriptive statistics. Differences between Aboriginal and non-Aboriginal women and grouped ACE data in categorical variables were assessed using Fisher's exact and chi-square test of association with 95% confidence intervals (95%CI) calculated around each estimate. Continuous variables were presented as medians with interquartile range (IQR) and P-values calculated from the Wilcoxon-Mann-Whitney test using Stata BE Version 17.0. (StataCorp., 2021). Statistical significance was set at 2-sided, $p < 0.05$.

Results

Demographics

Overall, 167 women (68% Aboriginal) were screened for inclusion in the BV intervention. The median age of the sample at baseline was 33 years (IQR 29-40) (Table 1). Eleven percent of Aboriginal women were removed to a mission and placed in care as a child, with over half reporting that a family member or relative had been removed to a mission. Unstable housing (sleeping rough, shifting between relatives, in crisis accommodation) prior to their incarceration was reported by 30%. Eighty percent of women had at least one child, however, 59% of them reported that their children were not in their care prior to prison. Over 40% had a history of being in juvenile detention, with 18% reported that their current incarceration was a result of breaching of their existing order. Non-alcohol substance use was widespread among participants (69%), with stimulants (87%) and cannabis (64%) identified as the most used substances. Seventy-six percent of participants reported ever injecting substances.

Adverse Childhood Experiences

A total of 153 women completed the Adverse Childhood Experience questionnaire of whom 102 (67%) identified as Aboriginal (Table 2). Household dysfunction due to parental separation or divorce was the most common ACE reported with (n=108), followed by witnessing family or domestic violence (n=97). Overall, 94% (n=144) reported to have experienced at least one childhood adversity, with a median of 6 ACEs reported (IQR 3-8). Aboriginal women were more likely to have a family member being incarcerated during childhood compared with non-Aboriginal women (58%, [95%CI 47%-67%] vs 29% [95%CI 14%-43%]; p=0.001). Any form of neglect was experienced by 59% (n=91) of women. Close to half of the women (n=73) reported sexual abuse as a child.

Exposure to Violence

Of the 159 women screened for intimate partner violence (Table 3), 66% (n=105) identified as Aboriginal. Overall, 94% of all women reported experiencing physical violence perpetrated

against them by their current or former intimate partners. Eighty-seven percent of all women reported threats of harm, including threats to kill them. A significant number of women (n=108) indicated that they had experienced choking, strangulation, or suffocation by a current and or former intimate partner (NFS events are not mutually exclusive however screening specifically for NFS was introduced later into the program). In the context of intimate partner violence, 77% of women reported that they fought back in response to violence.

Of the 166 women screened for a head injury, 106 (64%) reported sustaining a head injury with a loss of consciousness. For 49 women the head injury and subsequent loss of consciousness was due to intimate partner and or family and domestic violence. Of the 106 women who reported loss of consciousness 46% (n=49) reported that this has occurred several times. Overall, 58% of women (n=62) reported ongoing health impacts following head injury including: mental health issues (31%) (including depression and PTSD), headache or migraine (26%), loss of sensory processing including loss of vision and balance (17%), and continuous pain (11%). In screening for non-fatal strangulation (NFS) 77% of women (n=47/61) disclosed that their current or former partner had applied pressure in restraint around/across their neck, with 59% reporting sustained visible injuries.

Characteristics of Participants and the Experiences of Adversity in Childhood

There was no statistical significance between the other variables however high levels of non-alcohol substance use (daily, weekly, monthly) and the experience of intimate partner violence (physical) were salient among this population (Table 4). Women who had head injury with loss of conciseness were more likely to report >5 ACEs than those with no head injury with loss of consciousness (67% [95%CI, 57%-76%] vs (43% [95%CI, 30%-56%] p=0.008).

Discussion

This report presents a harrowing picture of ubiquitous exposure to adverse childhood experiences and violence in adulthood in a sample of adult women prisoners who were recruited as part of the BV intervention and underscores the need for trauma informed

approaches to the population. It highlights that whilst this population have been convicted of violent offences, almost all are victims themselves. This report expands the limited research assessing the experiences of violence in women who use violence, in areas of childhood adversity, substance use, and family and intimate partner violence, including victimisation resulting in head injury (Jones et al., 2020; Jones et al., 2018; Messina & Calhoun, 2021). Indeed, only nine women out of 153 women reported no ACEs reinforcing the traumatic background from which many of these women come from.

Despite representing greater than half of the baseline cohort, Aboriginal women were only found to be more likely to report that as a child a family member was incarcerated, compared with non-Aboriginal women. Yet Aboriginal and or Torres Strait Islander women continue to live with systemic disadvantage, cultural marginalisation and dislocation, including the forced removal of their children, or their own experience of removal as a child (Atkinson et al., 2014). The cyclic cost of colonisation for Aboriginal women may be expressed behaviourally as unresolved intergenerational and childhood trauma, resulting in normalised expressions of violence and subsequent incarceration (Atkinson et al., 2014). This is linked to continued intergenerational suffering, the breakdown of family functioning and community, resulting in poor physical and mental wellbeing as well as the complex experience of violence as both victim and perpetrator (Atkinson et al., 2014; Friestad et al., 2014; Sullivan et al., 2019; Welfare., 2020). Atkinson and colleagues (2014) describe this victim-participant relationships further as a normalisation of violence experienced intergenerationally and accumulatively as a child, remaining unresolved and sustained into adulthood; trauma symptomology indistinguishable from causation and effect (Atkinson et al., 2014). It is the resistance, the contestation and resilience which Aboriginal women participate that moves the narrative beyond the focus of entrenched victimisation, to consider the numerous intersecting causes of violence which have resulted in their growing rates of incarceration experienced by this group (Australian Institute of Health and Welfare, 2020; Blagg et al., 2020; Friestad et al., 2014;

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Sullivan et al., 2019).

All participants had a history of violent offending, with most witnessing violence in the home as a child and over half (57%) having been victim to physical abuse during childhood. Victimisation throughout childhood and subsequent use of violence as an adult has been described as the intergenerational transfer of violence occurring by way of imitation and/or tolerance of similar behaviours and experiences into adulthood (Mair et al., 2012). Regardless of the level of adversity experienced during childhood, a significant proportion (93%) of participants reported to have experienced intimate partner violence, which supports previous research findings (Jones et al., 2018; Messina & Calhoun, 2021).

High rates of head injury resulting in a loss of consciousness as a direct result of intimate partner violence were reported in the sample with almost half reporting ongoing mental health issues as a consequence of the head injury. This is consistent with research indicating that head injury with loss of consciousness is found more commonly among violent female prisoner populations than those who are incarcerated for non-violent crimes (Brewer-Smyth et al., 2004). Numerous factors confer risk for traumatic brain injury beyond intimate partner violence such as substance use and physical assault (non-family or intimate partner violence), both of which are substantially over-represented in prisoner populations and may be a risk-factor for criminal behaviours, impulsiveness, and violence (Australian Institute of Health and Welfare, 2020; Brewer-Smyth et al., 2004; Schofield et al., 2006). Screening for head injury on entry into the justice system may provide the opportunity to divert offenders away from incarceration, and into treatment programs to address the needs of those affected by head injury (Schofield et al., 2006).

Early childhood exposure to parental/carers who misuse substances represents negative parental modelling of coping skills and adaptive functioning and is a robust predictor for substance misuse in adulthood (Marotta, 2017). Many participants reported that they witnessed substance use in the household as a child (59%). Previous research by Kubiak and colleagues

(2017), found no direct effect of substance use on the perpetration of violence, rather the misuse of substances was considered an attempt to suppress or avoid difficult emotions relating to ACEs, leading to a greater difficulty in managing emotions such as anger, suggesting that these factors have an indirect effect on offending, yet are interconnected. The extent of trauma exposure during childhood development appears to correlate negatively with the effectiveness of interventions for substance use among women (Marotta, 2017). These findings highlight the need for female specific programs such as BV, in addressing the complexities of ACEs, cyclic victimisation including head injury and the relevance to the causality of the perpetration of violence. Importantly, the unique needs of female offenders may be currently overlooked in existing programs generalised from men.

Limitations

Limitations of the study include the reliance on self-report by the women who have suffered numerous head injuries. The lack of access to medical records to verify participant medical history, mental health diagnoses or history of victimisation has relied further on self-reporting. However, a previous study by Schofield et al. found adult male prisoners to be very reliable in terms of reporting head injury (Schofield et al., 2011). The instruments we used may have failed to ascertain both the level of adverse events during childhood due to underreporting, but some life events that might confer additional risk for substance misuse, and violence in adulthood. For example, the death of a parent or family member, economic deprivation, peer victimisation and violence in the community during childhood, have been considered to contribute to adverse consequences later in life (Jones et al., 2020; McLennan et al., 2020). In addition to establishing an ACE norm among females who perpetrate violence, further research to explore the interrelatedness of ACEs and their possible associations with specific types of crime including non-violent crimes would be valuable and lead to a greater understanding of not only female victimisation, but the possible differentiation of female violence as a result of 'fighting back' as previously described in the context of intimate partner violence, the role of

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extensive victimisation, along with undiagnosed head injury. Furthermore, a recent publication on women in Australian prisons by the Australia Institute of Health and Welfare (2020), suggested that the increase in the female prisoner population for violent offences may be attributed to an increase in the seriousness of offences committed, which are more likely to attract a custodial sentence, or there may be a more severe response to minor offences which would have otherwise seen community base sentences imposed.

Conclusion

The findings of this study are consistent with the limited research and literature that has identified ACEs as a possible risk factor for female violence, substance misuse, head injury and family and or intimate partner violence in adulthood. The focus of the intervention program BV on ACEs and the related efforts to assist female offenders with an opportunity to address and resolve the repercussions of these negative experiences on entry into the system, may well pay dividends in terms of the prevention of incarceration and reduction in reoffending in the future. We hope that with the conclusion of the BV intervention study from which these baseline data were drawn, we may have robust evidence to support such an anticipated outcome.

Data availability

The authors do not have permission to share data.

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List of Tables

Table 1. Sociodemographic characteristics of female participants (n=167) screened for the Beyond Violence trial.

Characteristics	**n (%)**
Born in Australia	138 (83)
Aboriginal and/or Torres Strait Islander	113 (68)
Removed to a mission as a child	11 (10)
Relatives/family member removed to a mission	84 (74)
Women with children:	
No children	33 (20)
1-3 children	83 (50)
≥4 children	51 (30)
Median age when first child was born (years) (IQR)	18 (17-21)
Median age when left school (years) (IQR)	15 (14-16)
Highest education level completed	
≤Year 8	29 (17)
Year 9	32 (19)
Year 10	57 (34)
Year 11	31 (19)
Year 12	18 (11)
Role prior to incarceration:	
Full-time parent	34 (20)
Full-time carer	2 (2.0)
Full-time work	6 (3.0)
Full-time study	1 (1.0)
Part-time or casual work	12 (7.0)
Unable to work due to disability, age, health	7 (4.0)
Unemployed	105 (63)
Receiving a government payment[1]	151 (90)
Accommodation before entering custody:	
Homeowner or purchaser	11 (7.0)
Public housing/community housing	64 (38)
Private rental (including shared rental)	31 (19)
Shifting between relatives, friends (couch surfing)	23 (14)
Sleeping rough/squatting/long grass[2]	22 (13)
Backpackers/hotel/motel	2 (1.0)
Boarding house	2 (1.0)
Crisis Accommodation (refuge)	2 (1.0)
Not identified	10 (6.0)
Juvenile and adult incarceration:	
Incarcerated as a juvenile	70 (42)
Incarcerated ≥4 times as a juvenile	49 (71)
Median age of incarceration as a juvenile (years) (IQR)	14 (13-15)

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First time incarcerated as an adult	57 (34)
Median sentence length, months (IQR)	22 (12-36)
Undertaking a community based order prior to incarceration	77 (46)
Alcohol use prior to incarceration:	
Daily consumption of alcohol	33 (20)
Alcohol use indicated in current sentence	39 (23)
Non-alcohol substance use prior to incarceration:	
Daily non-alcohol substance use	105 (63)
Non-alcohol substance use indicated in current sentence	115 (69)

[1] Government payments include Family Income Supplement, Carer's Pension, Newstart (unemployment benefit), Disability support Pension, Parenting Payment and 'other' (youth allowance, family tax benefit)
[2] Long grass is used to describe shared spaces including beaches and bushland where tall spear grass grows, and Aboriginal people sleep.

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Table 2. Participants reporting adverse childhood experiences (ACEs).

Adverse Childhood Experiences Items n (%)	Non-Aboriginal Women (n=51)	Aboriginal Women (n=102)	*p-value*
Household dysfunction			
Witnessed domestic violence	28 (55)	69 (67)	0.155
Parental separation or divorce	34 (67)	74 (72)	0.458
Mental illness/suicide attempt in household	23 (45)	36 (35)	0.291
Substance-use in household	30 (59)	60 (59)	1.000
Incarcerated family member	15 (29)	59 (58)	**0.001**
Any household dysfunction (above)	**45 (88)**	**94 (92)**	0.612
Childhood abuse			
Psychological abuse	34 (67)	58 (57)	0.294
Physical abuse	34 (67)	54 (53)	0.121
Sexual abuse	25 (49)	48 (47)	0.865
Any abuse (above)	**40 (78)**	**67 (66)**	0.293
Childhood neglect			
Emotional	29 (57)	53 (52)	0.609
Physical	20 (39)	32 (31)	0.368
Any neglect (above)	**34 (67)**	**57 (56)**	0.404

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Table 3. Violence and injury characteristics of participants.

Characteristic n (%)	Non-Aboriginal Women	Aboriginal Women	*p value*
Intimate Partner Violence			
Number screened:	**N=54**	**N=105**	
Partner threatened to harm/kill	44 (81)	89 (85)	0.653
Partner used physical violence	50 (92)	99 (94)	0.735
Partner choked/strangled/suffocated	40 (74)	68 (65)	0.283
Partner stalked/harassed	34 (63)	65 (62)	1.000
Partner controlled access to money	29 (54)	61 (58)	0.616
Partner harmed or threatened to harm/kill family pet	11 (20)	13 (12)	0.242
Partner jealous/controlling	48 (89)	92 (87)	1.000
Any intimate partner violence (above)	51 (94)	102 (97)	0.409
Head Injury			
Number screened:	**N=54**	**N=112**	
Head injury with loss of consciousness	30 (55)	76 (68)	0.167
Hospitalised following head injury	14 (26)	44 (39)	0.387
Ongoing physical/mental health issues post head injury	17 (31)	45 (40)	0.830
Non-Fatal Strangulation (NFS)			
Number screened:	**N=21**	**N=40**	
Partner ever put hands/or other item around/across neck and applied pressure in restraint	17 (81)	30 (75)	0.753
Partner put hands/or other item around/across neck and applied pressure in restraint in past 12 months	10 (47)	11 (27)	0.158
Sustained any visible injuries from NFS	13 (62)	23 (57)	0.790

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Table 4. Participant characteristics by number of adverse childhood experiences (ACEs).

	Number of ACEs (%)				
	0	**1-4**	**≥5**	**Total**	***p-value***
Aboriginal and/or Torres Strait Islander					0.850
Yes	6 (5.8)	35 (34)	61 (60)	102 (67)	
No	3 (5.8)	20 (39)	28 (55)	51 (33)	
Age Left School					0.851
Age 10 to 14	2 (3.8)	19 (36)	31 (60)	52 (34)	
Age 15 to 18	7 (6.9)	36 (36)	58 (57)	101 (66)	
Juvenile Detention					0.227
Yes	2 (3.1)	20 (31)	42 (66)	64 (42)	
No	7 (7.8)	35 (39)	47 (53)	89 (58)	
Alcohol use in month prior to prison					0.890
Daily	2 (7.7)	8 (31)	16 (61)	26 (18)	
Weekly	3 (7.7)	15 (38)	21 (53)	39 (27)	
Monthly	0	6 (30)	14 (70)	20 (14)	
Not at all	3 (5.1)	21 (36)	34 (59)	58 (41)	
Missing				10	
Non-alcohol substance use in month prior to prison					0.234
Daily	3 (3.1)	31 (33)	60 (63)	94 (69)	
Weekly	2 (7.4)	12 (44)	13 (48)	27 (20)	
Monthly	2 (22)	2 (22)	5 (56)	9 (6.6)	
Not at all	0	2 (33)	4 (67)	6 (4.4)	
Missing				17	
Experienced intimate partner violence (physical)					0.087
Yes	5 (3.5)	52 (37)	84 (59)	141 (93)	
No	2 (20)	3 (30)	5 (50)	10 (6.6)	
Missing				2	
Head Injury with loss of consciousness					**0.008**
Yes	3 (3.1)	28 (29)	64 (67)	95 (62)	
No	6 (10)	27 (47)	25 (43)	58 (38)	

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