






# Police-recorded adult sexual assault in the Northern Territory, Australia: Alcohol involvement and alcohol policy effects

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## Abstract

**Introduction:** Between 2017 and 2018 three major alcohol policy changes were introduced in the Northern Territory (NT): the Banned Drinker Register, an individual-level ban enforced via ID scanners at takeaway outlets; a Minimum Unit Price on alcohol; and Police Auxiliary Liquor Inspectors, who monitor takeaway outlets to prevent purchase by people who do not have a legal place to consume alcohol. We aimed to: (i) describe alcohol-involved adult sexual assault in the NT; and (ii) estimate the impacts of these alcohol policies on police-recorded adult sexual assault.

**Methods:** We used victim records for sexual assault where victims were aged 15 years and over. We undertook descriptive analyses for the NT from 2014 to 2020 and used interrupted time series analysis to assess policy impacts across the NT and in Greater Darwin.

**Results:** In 2020, the NT adult victimisation rate was 105 per 100,000. A large minority (40%) of adult sexual assaults involved alcohol. Interrupted time series analyses showed no effect of the Banned Drinker Register or Minimum Unit Price on sexual assault across the NT or in Greater Darwin.

**Discussion and Conclusions:** The rate of adult sexual assaults in the NT is extremely high and many involve alcohol. Neither the Banned Drinker Register or Minimum Unit Price were associated with changes in police-recorded adult sexual assault in Greater Darwin or across the NT. Due to small counts, we were unable to assess policy impacts in three of the four main towns, highlighting the challenges of assessing impacts of policies on sexual assault in small population areas.

## KEYWORDS

alcohol, policy, sexual assault

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## 1 | INTRODUCTION

One in six (17%) Australian women have experienced at least one sexual assault since the age of 15 [1]. Half of these women report that alcohol and or other drugs contributed to their most recent sexual assault<sup>1</sup> [1]. Globally, alcohol is the most commonly detected substance in drug-facilitated sexual assaults [2]. Discussing the role of alcohol and other drugs in sexual assault can be controversial, because it is often used to excuse perpetrator behaviour and delegitimise victim experiences [3]. We reaffirm that sexual assault is never the victim's fault and that the responsibility for assault lies solely with the perpetrator. Discussions of the role of alcohol and other drugs in sexual assault is important because: (i) it is a common feature of sexual assault; (ii) there is still a lack of clarity regards the exact role it plays; and (iii) alcohol involvement remains a major barrier to women disclosing sexual assault to loved ones and reporting to authorities [4]. Restricting or reducing alcohol use through policy may reduce incidence rates of sexual assault [5] as it mitigates the proposed mechanisms between alcohol and sexual assault.

Alcohol increases the risk of both victimisation and perpetration. Lorenz and Ullman [6] propose three avenues by which alcohol increases the risk of victimisation. The first is the physiological effect of alcohol, which can result in 'misinterpretation of cues, ineffective communication, inability to resist, and difficulty perceiving and responding to threat' [6, p. 83]. The second is the link between alcohol and exposure to risky situations. Alcohol is commonly consumed in settings where many people are intoxicated, risk taking is encouraged, and there is a lack of capable and or willing bystanders to intervene. Mustaine and Tewksbury [7] suggest that it is not the consumption of alcohol which increases the risk of assault, but the place in which, and people with whom, the alcohol is consumed. The third mechanism is the potential for cyclical assault; sexual assault may lead to increased alcohol use as a maladaptive trauma coping mechanism and thus increase the risk of further sexual assault victimisation [6].

Abbey [8] similarly outlines how the physiological effects of alcohol, including impaired cognitive function and impeded inhibition, increase the risk of perpetration. Cues which prevent sexual aggression (like empathy, morality and concern for future consequence) are likely to be less salient than sexual arousal, entitlement and aggression, when intoxicated [8]. People have strong expectancies regarding alcohol's effect on behaviour, thus providing an excuse for disinhibition [8]. Men may also expect women to be more receptive to sex when under the influence of alcohol [9]. Abbey [8] concludes that

alcohol interacts with existing personality traits and situational enablers to increase the risk of perpetration among men who are already predisposed to sexual aggression. If alcohol is known to increase risk of sexual assault via these mechanisms, it is plausible that reducing alcohol consumption may reduce the likelihood of sexual assault.

### 1.1 | Sexual assault and alcohol policy

A 2016 review of alcohol policy approaches to prevent sexual violence perpetration notes that pricing policies, outlet density, bar-room management, decreasing sexist content in alcohol marketing, and policies banning alcohol on university campus all demonstrated some initial evidence of success. However, the authors highlight that 'incorporating sexual assault into alcohol policy evaluation would provide much-needed evidence' [5, p. 37] of effectiveness. More recently, Miller and colleagues [10] did consider the impact of a multifaceted alcohol intervention implemented in Queensland's night-time precincts on self-reports of unwanted sexual attention but found no change in this outcome following the intervention. In the United Kingdom, de Vocht and colleagues found an association between local alcohol licensing policies and a moderate reduction in sexual crimes [11].

### 1.2 | The Northern Territory

The Northern Territory (NT) is a sparsely populated jurisdiction, accounting for 17% of Australia's land mass but only 1% of the Australian population [12, 13] (Figure 1). A large minority (40%) of NT residents live in remote and very remote areas [13] and approximately a third (30%) of the NT population are Aboriginal and Torres Strait Islander, compared to 3% nationally.

The NT has the highest rate of sexual offence victims in Australia<sup>2</sup> (144 per 100,000 persons compared to 106 per 100,000 nationally) and the highest proportion of women who report experiencing sexual harassment (22%, compared to a national average of 17%) in the country [1, 14]. The NT also experiences very high rates of alcohol-related harms [15, 16], including the highest proportion of alcohol-involved domestic and family violence in Australia [17, 18]. There are no estimates available of the proportion of alcohol-involved sexual assault in the NT. Analysis of data from the NT Supreme Court (which hears the most serious criminal matters) found that 71% of adult sexual assaults over a 6 month period involved alcohol [19]. There have been many different policies implemented in the NT aimed at reducing alcohol-related



**FIGURE 1** Map of the Northern Territory [20].

harm in the NT with supply control policies favoured in the past four decades [20]. Most studies assessing NT alcohol policy effectiveness have focused on outcomes such as consumption [21], hospitalisations [22], general assaults [23], domestic assaults [24] and police apprehensions [25]. Only one NT alcohol policy evaluation has examined the impact on sexual assault, but counts were too low to detect any change [22]. This represents a clear gap in current evidence, given the high rates of alcohol harms and sexual assaults in the NT.

### 1.3 | This study

In recent years, there have been three major supply reduction policies introduced in the NT: the Banned Drinker Register (BDR), a Minimum Unit Price (MUP) and Police Auxiliary Liquor Inspectors (PALI) (details provided in Table 1). This paper is part of a broader project evaluating their impacts, called LEarning from Alcohol (policy) Reforms in the Northern Territory (LEARNT) [26]. The BDR, an individual-level supply control policy, was reintroduced in September 2017. The BDR is a register of individuals who, for a variety of reasons predominantly related to engagement with

justice system, have been prohibited from purchasing, possessing and/or consuming alcohol. The ban is enforced through scanners at takeaway alcohol outlets, linked to the register of banned drinkers (approximately 3500 individuals at any given time). In October 2018 a MUP on alcohol was introduced, which prohibited the sale of a standard drink for less than AUD \$1.30, predominantly increasing the price and reducing the consumption of cask wine [21]. Both the BDR and MUP policies were introduced NT-wide. A third policy was implemented in three towns of the NT (excluding the capital city, Darwin, where the majority of the population lives). PALIs are a formalisation of a police practise that had been ongoing since 2012. PALIs are stationed at takeaway alcohol outlets and request details regarding intended consumption location. Only people with a non-restricted address can purchase. Full coverage of all takeaway outlets by PALIs was achieved in Alice Spring in October 2018 and in Katherine and Tennant Creek in January 2019. In addition, Tennant Creek had additional takeaway alcohol restrictions introduced in February 2018. For further detail on these policies see Clifford et al. [20].

In this paper we: (i) describe alcohol-involved sexual assault in the NT; and (ii) estimate the impacts of these

**TABLE 1** Summary of three policy interventions.

Policy	Location	Time period	Description	Precedent
Banned Drinker Register (BDR)	NT wide	First implementation (BDR1) 1 July 2011–August 2012 (in a practical sense)/July 2013 (legislation officially repealed). Reinstatement (BDR2). 1 September 2017–present (August 2023).	A list of people banned from purchasing, possessing, and consuming alcohol. Enforced (via an ID scanner) at takeaway alcohol outlets.	The BDR1 was introduced and repealed 5 years prior to BDR2. Between BDR1 and BDR2, Alcohol Protection Orders were introduced which could include court-ordered bans on consuming/purchasing alcohol. In essence a form of a ‘banned list’ remained but there were no scanners at takeaway outlets, and unlike the BDR, it was not enforced in a systematic way.
Minimum Unit Price	NT wide	1 October 2018–present (August 2023)	Prohibits the sale of 1 standard drink (10 g ethanol) for less than \$1.30AUD	Introduced in some international jurisdictions (i.e., Scotland, Wales, Ireland), no precedent within Australia.
Police auxiliary liquor inspectors (PALI)	Katherine, Tennant Creek and Alice Springs Tennant Creek	Full coverage from October 2018 in Alice Springs. Full coverage from January 2019 in Katherine and Tennant Creek.	Auxiliary police officers are stationed at the entrance of all takeaway alcohol outlets and ask customers where they plan on consuming their purchase. If they cannot nominate a valid (non-restricted) address, the purchase will be prevented.	Initially called Temporary Beat Locations (TBL), subsequently renamed Point of Sale Interventions (POSI), police officers were stationed the entrance of takeaway alcohol outlets to prevent purchase by individuals who could not nominate a legal place where they would consume the alcohol. They were the precursor to PALIs. The main difference between TBLs/POSIs and PALIs is the consistency of coverage. From 2012 to 2016 TBLs/POSIs provided sporadic coverage, unlike the full coverage provided by PALIs.

Abbreviation: NT, Northern Territory.

two alcohol policies on adult sexual assault in the NT and in Darwin specifically.

2020-3926) and the Central Australian Human Research Ethics Committee (CA-21-3968).

## 2 | METHODS

### 2.1 | Ethics

Ethics approval was obtained from the Northern Territory Department of Health and Menzies School of Health Research Human Research Ethics Committee (HREC

### 2.2 | Data

#### 2.2.1 | Police-recorded adult sexual assault

The Australia Bureau of Statistics defines adult sexual assault as assault experienced by victims 15 and over [27]. We used police victim records for sexual assault

(ANZSOC code 031), examining all records where the victim was aged 15 and older. Any records where the age of report did not match the age of incident were excluded, to avoid capturing reports of historical offences. NT police data includes an 'alcohol' flag, which is recorded by police if they assess that alcohol is involved in the crime. Similarly, there is a 'domestic violence' flag, used if the crime is considered to be related to domestic and/or family violence. Data were collapsed into monthly counts for time series analysis.

### 2.2.2 | Population centres

Geography was defined using the Australian Statistical Geography Standard. Greater Darwin is already defined as an Australia Bureau of Statistics Statistical Area (SA) 4. Katherine and Tennant Creek are both already defined as singular Statistical Area 2 areas. We defined Alice Springs (town) as including the following Statistical Area 2 areas: Charles; East Side; Flynn (NT); Larapinta; Mount Johns; Ross [28]. The yearly estimated residential population was sourced from the Australia Bureau of Statistics and used to estimate rates [13].

### 2.2.3 | Intervention measures

Within this paper we aimed to assess the impact of the BDR, MUP and PALIs on sexual assault outcomes. However, in Katherine, Tennant Creek and Alice Springs there were insufficient counts to allow for statistical analyses. Because the timing of the PALIs introduction is in close proximity to MUP and because PALIs were only introduced in three towns they present a confounder for any NT-wide analysis of MUP. As with other literature which has investigated the impact of these policies [21], although we investigate the effect of both the BDR and MUP across the NT and in Greater Darwin, we emphasise that any findings related to MUP in the NT-wide models are confounded by PALIs.

## 2.3 | Analysis

Descriptive analyses of victim demographics, relationship to offender and alcohol involvement were conducted

using data from January 2014 to December 2020. Yearly rates of sexual assault were calculated using the June NT population estimates from 2014 to 2020 ([abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release](https://abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release)).

To investigate alcohol policy impact, we used data from January 2014 to February 2020 to exclude the impacts of the COVID-19 pandemic (and associated restrictions). The impacts of alcohol policies on police-recorded sexual assault counts across the NT and Greater Darwin were modelled using interrupted time series analysis (*itsa* command in Stata v17.0). Portmanteau's test for white noise was used to check whether the models adequately accounted for autocorrelation in the data due to their underlying time-series structure. A categorical month covariate was included to control for seasonal trends and a time variable controlled for overall trends during the study period. There were insufficient counts to undertake a specific analysis of alcohol-involved adult sexual assaults. To account for the increase of individuals on the BDR following its implementation, we also ran an alternate model which assessed changes associated with the BDR after the number of active bans added per month had plateaued (March 2018). The second model acts as a sensitivity analysis and is presented in full in the Supporting Information. All analyses were conducted using Stata v17.0 [29].

While statistical analyses were conducted using monthly counts, in the interest of suppressing cells with counts lower than 5, Figures 2–4 show quarterly rates per 100,000.

## 3 | RESULTS

To contextualise this data, we present a brief descriptive overview for sexual assault rates in the NT overall. In 2020, the NT adult sexual assault victimisation rate was 105 per 100,000 persons (Table 2). It was relatively stable across the study period.

From January 2014 to December 2020 most police-recorded sexual assault victims were female (92%). Half (50%) were non-Aboriginal, 41% were Aboriginal and 9% were recorded as unknown. A large proportion of victims were assaulted by strangers (38%), followed by acquaintances (27%). Almost 1 in 4 adult sexual assaults (23%) included a domestic and family violence flag. Table 3 provides a breakdown of relationship to offender.

**TABLE 2** Yearly rates of adult sexual assault victims per 100,000.

Year	2014	2015	2016	2017	2018	2019	2020
Adult sexual assaults per 100,000 persons	98	106	92	105	93	100	105
% adult sexual assault with alcohol-involvement	47%	39%	38%	40%	44%	33%	40%

**TABLE 3** Victim relationship to offender in adult sexual assaults in the Northern Territory.

Relationship to offender	Sexual assault victims		Alcohol involved sexual assault victims	
	<i>n</i>	%	<i>n</i>	%
Stranger	653	38%	273	40%
Acquaintance	458	27%	180	26%
Current or former partner	218	13%	74	11%
Unknown	208	12%	86	12%
Immediate family	73	4%	30	4%
Non-immediate family	88	5%	41	6%
Work	22	1%	5	1%
Total	1720	100%	689	100%

**TABLE 4** Alcohol involvement in adult sexual assaults in the Northern Territory.

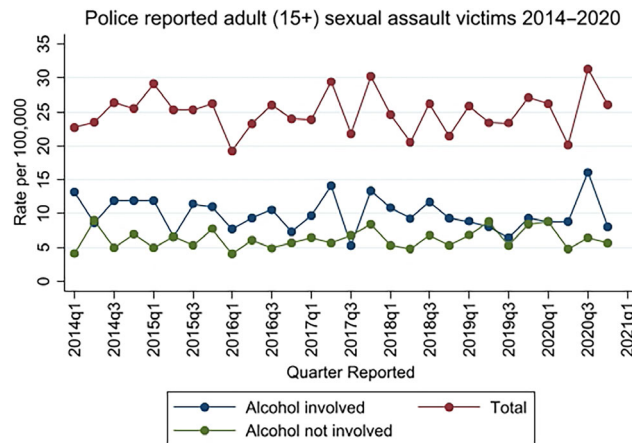
Type of alcohol involvement	% sexual assaults (Jan 2014–Dec 2020)
No alcohol involved	25%
Yes alcohol—used by offender only	13%
Yes alcohol—used by victim only	7%
Yes alcohol—used by both	20%
Not known	35%

Alcohol was involved in 40% of adult sexual assaults, including use by offenders, victims or both. Table 4 provides details on type of alcohol involvement.

Figure 2 demonstrates the quarterly rate (per 100,000) of adult sexual assaults from January 2014 to December 2020. As highlighted in Table 4, alcohol involvement is not known in 35% of adult sexual assaults which is why the alcohol-involved and alcohol non-involved quarterly rates do not equate to the total quarterly rate.

Interrupted time series analyses showed no association between the implementation of the BDR or the MUP on the number of police-recorded adult sexual assault across the NT or in Greater Darwin (Table 5). All models had non-significant results for Portmanteau's test for white noise. The alternate model with the BDR intervention in March 2018 also demonstrated no significant effects (see Supporting Information).

Figures 3 and 4 illustrate quarterly rates of adult sexual assault victims across the NT and in Greater Darwin. Although sexual assault rates demonstrate variation quarter to quarter, there is no notable trend changes over

**FIGURE 2** Quarterly rate of sexual assault victims (aged 15+) in the Northern Territory.**TABLE 5** Interrupted time series models for monthly counts of police-recorded adult sexual assaults.

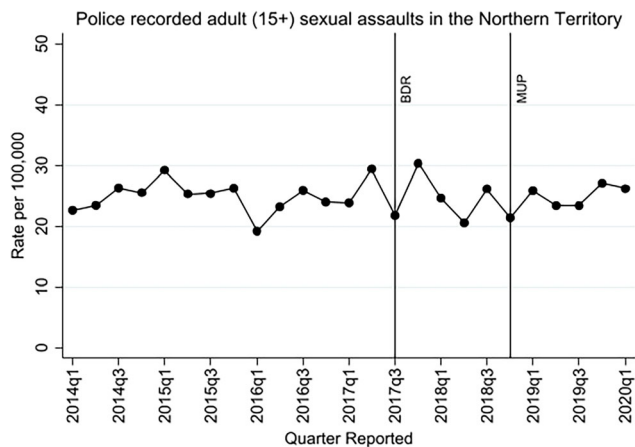
Area	$\beta$ coefficient (standard error)	95% CI	<i>p</i> -value
NT wide			
Time (slope)	0.00	−0.09, 0.10	0.954
BDR (step)	−0.35	−4.02, 3.33	0.850
Time X BDR (slope)	0.13	−0.25, 0.51	0.498
Post intervention trend	0.13	−0.24, −0.50	0.477
MUP	−2.43	−8.94, 4.08	0.458
Greater Darwin			
Time (slope)	−0.06	−0.13, 0.00	0.052
BDR (step)	1.14	−1.53, 3.82	0.396
Time X BDR (slope)	0.08	−0.26, 0.41	0.640
Post intervention trend	0.014	−0.32, 0.34	0.931
MUP	0.48	−5.67, 6.64	0.876

Abbreviations: BDR, banned drinker register; CI, confidence interval; MUP, minimum unit price; NT, Northern Territory.

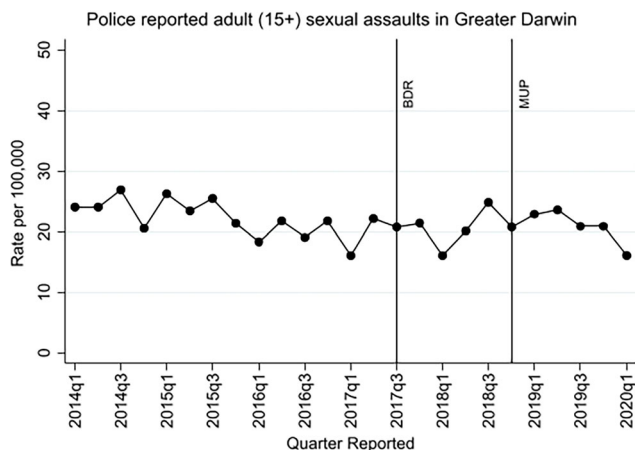
the study period, nor any changes associated with policy introductions.

## 4 | DISCUSSION

The first aim of this paper was to describe alcohol-involved sexual assault in the NT. Descriptive analysis of adult sexual assault victim data demonstrated that the



**FIGURE 3** Quarterly rate of sexual assault victims (aged 15+) in the Northern Territory.



**FIGURE 4** Quarterly rate of sexual assault victims (aged 15+) in Greater Darwin.

rate of adult sexual assault victimisation in the NT is high (105 per 100,000 in 2020). In official reports, sexual assault rates are reported for all victims (not just victims aged 15 and older) [14] and so we do not have a direct comparator for the rate of adult sexual assaults victimisation in the NT. We found less than half (40%) of all adult sexual assault in the NT involved alcohol, however given the high proportion of unknown involvement (35%), 40% should be considered a lower-bound estimate. To the best of our knowledge there are no other estimates of the proportion of alcohol-involved adult sexual assault in the NT.

This paper describes the demographics of people who report sexual assault to the police in the NT, and by default implies population groups who may not be engaging in reporting. Aboriginal and Torres Strait Islander victims account for 41% of victims. Submissions to relevant inquiries suggest Aboriginal and Torres Strait Islander peoples experience greater rates of sexual violence compared to non-Indigenous Australians [30]. We

also know that Aboriginal and Torres Strait Islander peoples experience much greater rates of domestic and family violence than non-Indigenous Australians [31]. Recently, Brown [32] described a particular reluctance to report for Aboriginal and Torres Strait Islander women, including a ‘fear of perpetuating harmful stereotypes of Indigenous men—especially fathers—as violent aggressors. This reluctance is reported by stakeholders and is also evident in the lack of reports of sexual violence [in the NT]’ [32, p. 10]. The most common relationship between perpetrators and victim in this dataset was ‘stranger’. This is incongruent with national survey data, in which only 13.3% of women reported being assaulted by a stranger [1] but not surprising in a police dataset as women are most likely to report violent victimisation to police if the perpetrator is a stranger rather than a known person [31].

#### 4.1 | Alcohol policies

This paper also aimed to assess whether the introduction of two recent alcohol policies within the NT was associated with changes in police-recorded sexual assaults. Neither BDR nor MUP were associated with changes in police-recorded adult sexual assault in across the NT or in Greater Darwin. There are a range of reasons why we may not see effects of the BDR and MUP on adult sexual assault. An average of 3300 people per month were on the BDR during the study period (approximately 2% of the NT population aged 18 and older) and the majority of people on the BDR (97%) have been referred as a result of engagement with the justice system, via either police, courts or corrections [25]. There are, however, a wide range of risk factors for sexual assault perpetration and many people who perpetrate sexual assault have never been engaged in the criminal justice system [33]. Although a large minority of sexual assaults involve alcohol, the perpetrators of these assaults may not be the type of drinker that the BDR reaches. Indeed, both these policies are focused on takeaway alcohol whereas sexual assault in the nighttime economy is pervasive [34]. Specifically, Coomber et al. [23] found no change in the wholesale supply to nightlife venues in Darwin after the introduction of the MUP as it targets takeaway alcohol, such as low cost wine [21].

#### 4.2 | Limitations

Sexual assault is known to be chronically underreported to police; 87% of Australian women did not contact the police in relation to their most recent incident of sexual

assault by a male [1]. This under-reporting may be higher for Aboriginal and Torres Straight Island victims [31, 32]. There are additional challenges associated with reporting sexual assault in rural and remote areas, including a lack of anonymity, reduced service access, and informal social controls [35]. Under-reporting is also likely to be more common for alcohol and other drug involved sexual assaults, largely because the experience is less likely to be acknowledged as sexual assault, potentially because such incidents do not fit stereotypical rape scripts, and individuals may have poor memory of the incident [36]. While the underreporting of sexual assault is a significant limitation, provided a willingness to report has remained stable, the trends in this data will broadly represent the underlying trends in the incidence of sexual assault. Nationally the rate of sexual assault has increased over the past decade, but it remains unclear if this represents real-world changes in the prevalence of sexual assault, changing public discourse about sexual violence and willingness to report, changes in police recording practices, and/or legislation and policy change [14]. There is no NT specific evidence regarding whether there has been a change in willingness to report. However, police data remains one of the few ways to ascertain trends in sexual assault over time (although findings should be considered lower-bound estimates). As highlighted through the demographics of this data, the cohort who do report to police are likely not representative of the actual victim cohort in the NT. Our analyses were limited in their ability to capture regional differences due to small population size. In addition, there are limited statistics published on adult sexual assaults (separate from victims aged 14 and under) in Australia which precludes comparison. As we highlight in the Methods section, NT wide analysis of MUP is confounded by the similar timing of the introduction of PALIs in three towns. It's also worth noting that in the time preceding the PALIs implementation there was sporadic coverage by POSIs, however, this coverage may have reduced further in Alice Springs following the BDR implementation [37]. The introduction of multiple policies within short time periods in areas of small population presents challenges for analysing the impacts of these policies. In addition, it is also possible that all these policies interact in complex ways that we cannot easily measure.

## 5 | CONCLUSION

Despite the low counts, the rate of 105 adult sexual assaults per 100,000 people in the NT is extremely high, and even lower bound estimates of alcohol-involvement indicate that it is a notable factor. The introduction of the

BDR and MUP was not associated with changes in police-recorded adult sexual assault across the NT or in Greater Darwin. Exploration of the impacts of alcohol policies on sexual violence remains important if we are to fully understand what policies can be implemented to reduce the rates of adult sexual assault, but there are challenges associated with exploring policy impacts in area with low population numbers. Further research is required to develop, trial and evaluate interventions to reduce alcohol-involved sexual assault, especially in the NT.

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## CONFLICT OF INTEREST STATEMENT

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.


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## ENDNOTES

<sup>1</sup> The Australian Bureau of Statistics defines sexual assault as: 'An act of a sexual nature carried out against a person's will through the use of physical force, intimidation or coercion, including any attempts to do this. This includes rape, attempted rape, aggravated sexual assault (assault with a weapon), indecent assault,

penetration by objects, forced sexual activity that did not end in penetration and attempts to force a person into sexual activity’.

<sup>2</sup> This statistic includes victims of all ages, not just adult (15+) victims.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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