Non-fatal strangulation and acquired brain injury in the context of sexual violence

An evidence brief

Purpose

This evidence brief is primarily focused on non-fatal strangulation (NFS) and acquired brain injury (ABI) in the context of sexual violence. It brings together Australian research and grey literature with supporting international evidence to define the issues and illuminate data gaps.

The brief sets out five key considerations relevant to preventing and responding to NFS and ABI in the context of sexual violence. The first key consideration highlights the need to improve the collection and availability of Australian prevalence data to support multidisciplinary, evidence-based responses that holistically meet the needs of victims and survivors of NFS and ABI. The second key consideration outlines factors that hamper appropriate medical referral and follow-up after NFS, including a lack of understanding of its potential to cause brain injury. The third key consideration looks at the intersection of health and legal responses to NFS. The fourth key consideration addresses the normalisation of sexual choking and how to build capability to better support specific and informed consent. The final key consideration presents information relevant to shaping service responses to meet the needs of women and children experiencing NFS and ABI in different life stages and in cohorts where it intersects with other forms of discrimination and marginalisation. Consistent with the mission of Women's Health NSW, this brief is focused on women, which also reflects the gendered nature of NFS (Bettinson, 2022; Douglas, 2023; Herbenick, Fu et al., 2023; White et al., 2021).

Audience

This evidence brief is designed to assist people developing policies and practices to respond to and prevent NFS and ABI in the context of sexual violence and sexual choking. It will be useful to women's community health and other health workers, including sexual health, prehospital care, primary healthcare and allied health practitioners. It will also be of use to wider domestic, family and sexual violence sector workers and legal actors engaged with meeting the needs of women with experiences of NFS and ABI.

The New South Wales context

In line with the remit of Women's Health NSW, this brief uses findings, guidelines and tools relevant to New South Wales wherever possible. Our work in this area is guided by the *NSW Sexual Violence Plan 2022–2027* which situates the state's sexual violence response

within a public health approach and a socio-ecological framework (NSW Government, 2022). Considerable work has already been undertaken in New South Wales to improve responses to women experiencing NFS and ABI in the context of sexual violence. Work led by NSW Health to date has included the creation of clinical protocols for managing NFS, and head and brain injuries, in the emergency department via the Agency for Clinical Innovation; a patient-centred holistic health approach for specialist in-hospital domestic and family violence (DFV) and sexual assault services via the Prevention and Response to Violence Abuse and Neglect (PARVAN) unit; and a project to embed assessment and referral pathways on both adult and paediatric strangulation into primary healthcare settings through the Primary Health Networks (PHNs).

Women's Health NSW has identified a missing link in how this systemic reform connects to women seeking support for NFS and ABI in community health settings. To bridge this gap, Women's Health NSW has established "Local pathways for victims and survivors of sexual assault–related non-fatal strangulation and acquired brain injury" (the Pathways Project) using funding from the NSW Department of Communities and Justice. By building robust referral pathways across the state and increasing workforce capacity to respond to NFS and ABI in community health, primary health and non-government organisation (NGO) settings, the Pathways Project aims to assist victims and survivors to connect to, and navigate, wider systems so their needs are met.

Find out more about this project here:
www.itleftnomarks.com.au

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Definitions

Non-fatal strangulation

Strangulation is any pressure applied to the neck compressing or blocking airflow and/or blood flow (North Metropolitan Health Service [NMHS], 2020; Sharman et al., 2021). Strangulation can occur due to misadventure, self-harm or acts of violence from others (Agency for Clinical Innovation [ACI], 2022). In an act of violence, pressure can be applied to the neck using one or both hands (manual); the forearm from behind (chokehold); other body parts (to pin someone against an object); or by wrapping an object around the neck (ligature) such as a belt, cord, rope, shoelace or chain (Victoire et al., 2022). Strangulation is non-fatal (NFS) in situations where the person survives having pressure applied to their neck, whatever the means (Sexual Assault Resource Centre [SARC], 2020). NFS is commonly experienced during sexual assault, including sexual assault perpetrated by intimate partners as part of a pattern of DFV (Hou et al., 2023; Matusz et al., 2020).

Sexual choking

Sexual choking is a popular term for strangulation enacted with consent in a sexual context. Historically, sexual choking (also called erotic asphyxiation or breath play) has been a form of edge play (play that risks serious harm or death) for people involved in sexual subcultures like bondage and discipline, dominance and submission, sadism and masochism (BDSM; Chater, 2021). However, in recent times, evidence suggests sexual choking has become an increasingly common part of everyday sex, particularly among young people (Contos, 2022; Douglas, 2023; Herbenick, Fu et al., 2023a; Sharman et al., 2024).

Brain injury

Acquired brain injury (ABI) is an umbrella term for all brain injuries that occur after birth that result in structural or functional changes to the brain (Victoire, 2023). Hypoxic/anoxic brain injury is a type of ABI that occurs when there is a reduction in (hypoxic) or complete lack of (anoxic) oxygen supply to the brain (Synapse, 2021). Causes of hypoxic/anoxic brain injury include strangulation, suffocation, near drowning, drug overdose and heart attack (Royal Australian College of General Practitioners [RACGP], 2022; Synapse, 2021). A traumatic brain injury (TBI) is a form of ABI that results from mechanical energy being applied to the head and/or body from external forces that transmit an impulsive force to the head and damage the brain (Anderson et al., 2006; Victoire, 2023). TBIs can occur when other forms of violence are inflicted in conjunction with NFS, for example, in a sexual assault where there are also punches, kicks and/or slaps to the head (White et al., 2021). Both single incidents and repeated episodes of oxygen deprivation and assaults that shake the head can cause an ABI (Farrugia et al., 2020; Lacerte et al., 2023). Furthermore, "ABIs can accrue, develop and worsen over time" (Farrugia et al., 2020, p. 27).

The terminology used to define the types and severity of brain injuries is inconsistent, and often used interchangeably within medical settings to describe both the mechanism of the injury and its physical consequences (Anderson et al., 2006). "Concussion" generally refers to a mild TBI, while hypoxic/anoxic brain injuries (which are not caused by impulsive forces) are usually called mild brain injuries (Anderson et al., 2006; Synapse, 2021). Often clinical guidelines do not differentiate between treatment for a mild brain injury and a concussion (RACGP, 2022).

Summary of implications

Non-fatal strangulation and acquired brain injury in the context of sexual violence

Key consideration 1: Australian prevalence data on non-fatal strangulation and brain injury is lacking and needed to support multidisciplinary, evidence-based responses

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1. There is a need for accurate and localised prevalence data about non-fatal strangulation particularly in the context of sexual violence.
2. Service providers should ask women about non-fatal strangulation if they are aware that other physical forms of intimate partner violence are occurring.
3. Services need organisational protocols and referral pathways that promote multidisciplinary, evidence-based responses for victims and survivors of non-fatal strangulation.
4. Screening and assessment tools covering non-fatal strangulation should employ a general question about pressure being applied to the neck and/or breathing being inhibited and be supported by guides and regular training for screeners.

Key consideration 2: A number of factors, including delayed and hidden signs and symptoms and a lack of understanding of the potential for non-fatal strangulation to cause brain injury, hamper appropriate medical referral and follow-up

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5. Foster greater awareness of potential health implications of non-fatal strangulation so service providers make appropriate medical referrals while remaining cognisant of safety.
6. Scaffold better recognition of injuries related to non-fatal strangulation with localised longitudinal studies that focus on the prevalence and relationship with other health implications following strangulation.
7. Develop and tailor organisational tools, including a referral pathway and protocol, to facilitate staff making localised and appropriate medical referrals that support women advocating for health needs following non-fatal strangulation and brain injury.
8. Build greater understanding of the health implications of non-fatal strangulation among service providers, specifically hidden and delayed signs and symptoms, to increase medical referrals, build clinical data and strengthen clinical guidelines.
9. Improve evidence about, understanding of, and access to neuropsychological assessment and social support for women with brain injuries resulting from gender-based violence including non-fatal strangulation.
10. Review protocols and resources relating to acquired brain injuries with a domestic, family and sexual violence–informed lens to

Continued

Key consideration 2

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ensure relevance for women experiencing violence and provide alternatives for managing mild brain injuries when the home environment is not conducive to recovery.

Key consideration 3: Service providers need to stay cognisant of legal and compensatory responses to non-fatal strangulation and increase specific and informed consent for sexual choking

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11. Conduct research into the efficacy of the 2018 changes to the *Crimes Act 1900* (NSW) against the stated aim of facilitating prosecution of more offences of choking, suffocation and strangulation in the context of DFV.
12. Services should develop data collection and protocols to assist staff to record instances and impacts of non-fatal strangulation in case notes in line with their role and responsibilities alongside regular training to effectively use them.
13. Build capacity for specific and informed consent in New South Wales via the provision of non-judgemental and accessible legal and health information relating to sexual choking and brain injury.

Key consideration 4: The normalisation of sexual choking as a mainstream sexual practice creates a need for accurate and up-to-date health and legal information

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14. Provide women and their sexual partners with accurate and up-to-date information about risks associated with choking and being choked by their sexual partners.
15. Resource people engaging in sexual choking with up-to-date health information that makes clear the link between choking and mild brain injuries, including the long-term effects of repeated brain injuries.
16. Foster a sexual health–capable culture by building digital capacity to assess and critically engage with all forms of information about sexual choking and factor them into informed consent.

Key consideration 5: Non-fatal strangulation and brain injuries can impact differently across different life stages and intersect with other forms of disadvantage and discrimination

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17. Alongside fulfilling mandatory child safety requirements, adult-focused services addressing non-fatal strangulation and brain injuries should keep children in view and offer referrals for early intervention wherever possible.
18. When designing responses to non-fatal strangulation and brain injury, care should be taken to consider differences in the way these issues present at different life stages and intersect with other forms of marginalisation and discrimination.

Key consideration 1:

Australian prevalence data on non-fatal strangulation and brain injury is lacking and needed to support multidisciplinary, evidence-based responses

The connection between NFS and future intimate partner fatality is well recognised in Australia and addressed in national risk principles and risk assessment tools. Recognition of and responses to health needs resulting from NFS in sexual violence contexts is less advanced. Driving systemic reform to holistically meet the needs of women experiencing NFS and ABI in the context of sexual violence requires accurate and up-to-date prevalence data in the Australian context to inform multidisciplinary, evidence-based responses. Differences in the terminology used by screeners can also impact the accuracy of NFS prevalence data.

Prevalence data for non-fatal strangulation in sexual violence is limited

In the Australian context, the most recent cross-sectional study on NFS in the context of sexual violence is almost a decade old. This study examined data collected from the forensic examination of women (aged 13 and over) referred to the Western Sexual Assault Resource Centre between January 2009 and March 2015 after alleged sexual assault (Zilkens et al., 2016). Of the 1,064 women included in the study, 79 (7.4%) alleged NFS, with prevalence highest in the cohort of women aged 30 to 39 years (15.1%) compared with all other age cohorts (all less than 8.2%; Zilkens et al., 2016, p. 1). The study found women assaulted by an intimate partner were more than eight times (8.4x) more likely to have experienced NFS than women assaulted by acquaintances/friends, and nearly five times (4.9x) more likely to experience NFS than women assaulted by strangers (Zilkens et al., 2016, p. 3). Experiencing NFS during sexual assault was also associated with the deprivation of liberty, the attack occurring in the woman's home, the use of verbal threats, and additional blunt force (Zilkens et al., 2016, p. 3). External physical signs of NFS were absent in nearly half (49.4%) of all NFS sexual assault cases, with almost a quarter (24.1%) of NFS cases showing neither signs (something a doctor or other person notices) nor symptoms (something an individual experiences; Zilkens et al., 2016, p. 3).

In the United Kingdom prevalence of NFS in sexual assault was estimated to be 9.28 per cent by a study examining case files relating to all patients attending the Saint Mary's Sexual Assault Referral Centre in Manchester between 1 January 2017 and 31 December 2019 (White et al., 2021). The findings of this study demonstrated the gendered nature of NFS, with 96.6 per cent (n=197) of NFS victims and survivors being female, and the alleged perpetrators of NFS being male in 98 per cent (n=200) of cases (White et al., 2021, p. 4). Prevalence was higher (18.9%) when the alleged perpetrator was an intimate partner or ex-partner, with 27 per cent (n=55) of the victims and survivors saying the alleged perpetrator had previously strangled them (White et al., 2021, p. 4). This study found 40 per cent of the victims and survivors of NFS had been strangled in their own homes, with 33 per cent having children living in that home (White et al., 2021, p. 5), pointing to a need to keep children in view when addressing NFS. In line with the Australian study by Zilkens and colleagues (2016), this UK study found less than half of victims and survivors of NFS (46.6%)

had visible signs (White et al., 2021, p. 6). The UK study included data on self-reported rates of loss of consciousness (15.7%, n=32) and other signs indicating victims and survivors continued to be strangled after losing consciousness, including loss of bladder control (8.8%, n=18) and loss of bowel control (2%, n=4; White et al., 2021, p. 6).

A similar study in the United States examined 856 Sexual Assault Nurse Examiner cases of people aged 13 years and over at one academic hospital in the Midwest from 2002 to 2017 (Cannon et al., 2020). In this study, 5.1 per cent of all cases involved NFS, and all NFS victims and survivors were female (Cannon et al., 2020, p. 1). Prevalence of NFS among female sexual assault victims and survivors was 11.3 per cent (Cannon et al., 2020, p. 1). This study also found prevalence of NFS was higher (18.9%) when the alleged perpetrator was an intimate partner or ex-partner (Cannon et al., 2020, p. 1). Experiencing NFS was three times more likely in sexual assault cases involving weapons (30% vs 9.1%), and three times more likely in cases involving anal penetration (22.7% versus 7.5%; Cannon et al., 2020, p. 1). This study also found NFS may be on the increase, and that victims and survivors of sexual assault–related NFS were at increased risk of lethality when the incident also involved weapons (Cannon et al., 2020).

There is more recent Australian data on the prevalence of NFS when experienced as part of intimate partner violence (IPV). For example, the Australian Institute of Criminology (AIC) found that most women (54%) who had experienced coercive control also experienced physical violence in the same three-month time period (Boxall et al., 2021a, p. 9). In addition, 27 per cent of women who had experienced coercive control reported their partner had also strangled, choked or grabbed them by the throat (Boxall et al., 2021a, p. 9). In the year after the COVID-19 pandemic began, Boxall et al. (2021b, p. 24) found one in three women (33.4%) who completed the survey self-reported at least one form of IPV in the prior 12 months. The prevalence of choking, strangling or grabbing by the neck was 3.9 per cent among all respondents (Boxall et al., 2021b, p. 24). Two in five women

Non-fatal strangulation is often connected to other forms of violence

(41%) who had experienced more than one type of physical violence in the prior 12 months reported their partner had strangled, choked or grabbed them around the neck on at least one occasion (Boxall et al., 2021b, p. 25). This study reinforces that NFS is often connected to other forms of violence, indicating if service providers are aware that other physical forms of IPV are occurring, it is worth asking the woman about NFS.

Taken collectively, this group of studies suggests NFS is experienced most often by women in the home as part of a pattern of escalating IPV. More data is needed to accurately capture what is happening in New South Wales. Data that reflects the experiences of women in cohorts where NFS intersects with other forms of discrimination and marginalisation and creates significant barriers to help-seeking is particularly lacking.

Implication 1:

There is a need for accurate and localised prevalence data about non-fatal strangulation particularly in the context of sexual violence.

Implication 2:

Service providers should ask women about non-fatal strangulation if they are aware that other physical forms of intimate partner violence are occurring.

Current data and responses focus on the connection between non-fatal strangulation and future fatality

Data from the Australian Domestic and Family Violence Death Review Network (ADFVDRN) indicates that suffocation/strangulation was

the cause of death in 12.9 per cent of IPV homicides where a male homicide offender killed a female intimate partner in Australia between 2010 and 2018 (ADFVDRN & ANROWS, 2022, p. 30). While it is generally recognised strangulation can easily be fatal, NFS is itself a "key marker for the escalation of violence in a domestic relationship, and a strong indicator of future risk for serious harm and death of the victim" (Sharman et al., 2021, p. 4). A US study found the risk of future homicide was more than seven times higher for women who experienced NFS than for those who had not been strangled (Glass et al., 2008). While this study has not been replicated in the Australian setting, the findings have been influential across many local standards and screening tools (see for example Agency of Clinical Innovation [ACI], 2022; Backhouse & Toivonen, 2018; NSW Government, 2015, 2020; RACGP, 2022). ANROWS's *National Risk Assessment Principles for domestic and family violence* (National Risk Assessment Principles) lists both intimate partner sexual violence (IPSV) and non-lethal strangulation (or choking) as high-risk factors for DFV (Backhouse & Toivonen, 2018). The National Risk Assessment Principles posit that most perpetrators "do not strangle to kill but to show that they can kill", utilising the credible threat of death to coerce compliance as part of a pattern of coercive control (Backhouse & Toivonen, 2018, p. 13). This connection is reinforced by other writers: 'Few abusive behaviours are so clearly linked to the possibility of dying' … making NFS an effective tool to exert coercive control" (Thomas et al., 2014 as cited in Bettinson, 2022).

The urgency of addressing women's safety needs when they have experienced NFS in the DFV setting is driven by the risk of intimate partner homicide (Glass et al., 2008). NFS in the context of DFV signifies an escalation in violence and intent to cause further harm, making it deserving of an adequate safety response (Douglas & Fitzgerald, 2022). However, NFS is a physical act that results in injuries of varying severity to a woman's physical, emotional, mental and psychosocial health (Bichard et al., 2022). The health implications of NFS, including related ABI, also impact quality of life, so it is important that the safety response is balanced with a health response that addresses victims' and survivors' holistic needs (Bichard et al., 2022; NSW Government, 2020).

While statewide policies and procedures that aim to prevent or lessen the impact of DFV on victims and survivors acknowledge the need for information sharing between service providers, the methodology of the response remains almost exclusively geared toward safety planning (NSW Government, 2020). However, there is growing awareness of the need for multidisciplinary responses to violence against women and increased recognition of a role for healthcare beyond treating medical emergencies and identifying safety concerns. For example, the RACGP Specific Interests Abuse and Violence in Families group (2023) has recently published a list of psychosocial resources to support general practitioners (GPs) working with women experiencing violence. There has also been an acknowledgement of the extra time it takes GPs to address the complex needs of patients experiencing DFV through the introduction of Medical Benefits Schedule Level E long consultations of 60 minutes or more in November 2023 (Department of Health and Aged Care, 2023a). Accurate and up-to-date prevalence data in the Australian context is essential to support current and future reforms to policies, practices and prevention strategies aimed at addressing sexual assault–related NFS.

Implication 3:

Services need organisational protocols and referral pathways that promote multidisciplinary, evidence-based responses for victims and survivors of non-fatal strangulation.

Differences in terminology can inhibit recognition and accurate data collection of non-fatal strangulation

Research, practice-based evidence and grey literature indicate that strangulation is a commonly misunderstood term shrouded in alternative labels and misconceptions (ACI, 2022; Herbenick, Fu et al., 2023a; SA Health, 2019). Discrepancies in terminology used by media, the general public, sector workers and academics can impact reporting rates, ultimately limiting the accuracy of screening tools and impeding the delivery of multidisciplinary responses to women experiencing NFS (Lovatt et al., 2022). Members of the public, often guided by the media, generally refer to NFS as "choking" but may also call it a "headlock", a "neck squeeze", being "pinned down", a "chokehold", being "throttled", being "hung", being put in a "sleeper hold", or being "suffocated" (ACI, 2022; De Boos, 2019). However, from a medical and scholarly perspective, the word "choking" refers to an internal blockage of the airway, often caused by food (Herbenick, Fu et al., 2023a; Victoire, 2023). There can also be cultural differences in terminology: for example, in BDSM and kink communities, strangulation and other forms of breathing restriction are referred to as "breath play" (Chater, 2021; Schori et al., 2022).

Another popular misconception is that the word "strangulation" only applies if the event is fatal (Victoire, 2023). This can affect service-level data on NFS if service providers fail to recognise phrasing like "he tried to strangle/choke me" still means NFS has occurred (Victoire, 2023). Using the correct language when screening (identifying) and assessing (determining severity and impact of) NFS is essential because, in most cases, there will not be visible injuries to reply upon (Backhouse & Toivonen, 2018; Sharman et al., 2021; Victorie et al., 2022). Without a detailed understanding of community language and associated meanings, service providers may overlook verbal cues by victims and survivors relating to being pinned or held by the neck, or struggling to breathe, as opportunities to ask more detailed questions about NFS.

Victims and survivors may not associate pressure on their neck with the word "strangulation" or minimise the seriousness of NFS (Victorie et al., 2022). Victim and survivor minimisation of NFS can stem from poor responses from services in the past, stigmatisation or shame about what other people might think, or a dominant fear of child removal (Brainkind, 2024; Donaldson et al., 2023). Minimisation can also be a result of perpetrators of NFS (including proponents of sexual choking) setting the discourse. For example, one male participant in a US study differentiated "between what he called 'holding' (lighter pressure with hands or his elbow) and 'choking'" (Herbenick et al., 2022, p. 5). Another US study examining sexual choking in undergraduates argued that the word "choking" undermines the serious nature of the act and contributes to the misidentification of strangulation during sex as a risk-free behaviour (Herbenick, Fu et al., 2023a). However, when administering risk tools, it may be better to allow the victim and survivor to set terminology by asking them a general question and leave any reframing to therapeutic settings.

Statistics show that women are already unlikely to report sexual violence and DFV perpetrated against them (Australian Bureau of Statistics [ABS], 2021–22). Similarly, not all female victims of abuse report their experiences of NFS under medical examination, with one study finding "without training health workers were unable to record instances of it" (Douglas & Fitzgerald, 2020 as cited in Bettinson, 2022, p. 80). Inconsistency in terminology related to NFS creates additional barriers to women receiving multidisciplinary support. For example, the Queensland Centre for Domestic and Family Violence Research found some women do not disclose NFS because they do not relate their experience to screening questions (Lovatt et al., 2022). This was reinforced by a recent UK study that found, for the same group of victims and survivors, 45 per cent of the women reported being strangled while 75 per cent reported they had been held in a way that meant they could not breathe (Brainkind, 2024, p. 29).

In New South Wales, the *Domestic Violence Safety Assessment Tool* (DVSAT), regularly

utilised by counsellors, caseworkers and police, prompts service providers to ask, "Has your partner ever choked, strangled or suffocated you or attempted to do any of these things?" (NSW Government, 2015). The current DVSAT does not provide an accompanying explanation of potential alternative terminology, relying on user knowledge to modify the question where appropriate (NSW Government, 2015, p. 1). The *Clinical practice guide for managing non-fatal strangulation in the emergency department* emphasises "victims may not view what happened to them as strangulation" and provides a list of 10 alternative terms (ACI, 2022, p. 8). Australian advice for general practitioners suggests that instead of using complex terminology, a good question is, "Was pressure applied to your neck?" (Victoire et al., 2022, p. 873).

Using a more benign and general question about pressure being applied to the neck or being held so you cannot breathe can help avoid confusion about terminology and potential minimisation by victims and survivors. Screening and assessment tools should be accompanied by guides with further prompts for unpacking unclear answers and supported by regular training for screeners to ensure experiences of NFS are being accurately identified. The value of building the understanding of responders is evident in the findings of Insight Exchange (2023) who, in the first eight months of delivering a learning module on NFS to 1,558 individuals, found 32.5 per cent of participants who completed the survey (n=59 of 181) included language in their key insight (Insight Exchange, 2023, p. 31). As one participant put it, they would now start "asking questions differently regarding strangulation" (Insight Exchange, 2023, p. 31).

Implication 4:

Screening and assessment tools covering non-fatal strangulation should employ a general question about pressure being applied to the neck and/or breathing being inhibited and be supported by guides and regular training for screeners.

Key consideration 2:

A number of factors, including delayed and hidden signs and symptoms and a lack of understanding of the potential for non-fatal strangulation to cause brain injury, hamper appropriate medical referral and follow-up

The nature of NFS, which includes delayed and hidden signs and symptoms, can hamper appropriate medical referral, contribute to misdiagnosis, and prevent follow-up. A lack of understanding of the health implications of NFS and its potential to cause an ABI and serious injury can impact whether service providers make appropriate medical referrals or encourage women to follow up with their GP. The potential for gender-based violence, including NFS, to cause brain injuries is under-acknowledged and deserving of a tailored response. When services do not make adequate assessment, or lack protocols and referral pathways, opportunities to provide support and advocacy for victims and survivors of NFS are missed (Donaldson et al., 2023).

Service providers may not know when to keep non-fatal strangulation in mind

The need for NFS-specific medical assessment and treatment often goes unrecognised by both non-medical and healthcare providers (Donaldson et al., 2023). Difficulty in recognising the need for appropriate medical referral and medical misdiagnoses are partly due to the complex nature of NFS presentation (Bichard et al., 2022). Differential diagnosis is a process where healthcare professionals create a list of potential conditions and illnesses based upon the signs and symptoms a patient presents with. Healthcare professionals are then tasked with finding a diagnosis by working through this list of conditions and illnesses that all share similar signs and symptoms. By improving knowledge about when to keep NFS as a differential diagnosis, we can reduce misdiagnosis and improve ability to make appropriate medical referrals.

Strangulation risks injury to multiple structures within the neck, including the major arteries and veins that transport blood to and from the brain, the airway, the thyroid gland and cartilage, the hyoid bone, the spine and spinal cord, and the carotid sinus nerve (Victoire et al., 2022). Damage to these structures can cause a list of injuries that should be considered as potential diagnoses. These injuries can vary in significance and severity, though some can lead to long-term comorbidities and/or death (De Boos, 2019; RACGP, 2022). For example, a significant injury might be a hyoid or laryngeal fracture, but these are rare and likely to only occur alongside other, more apparent injuries. Hypoxic brain injuries caused by NFS should also be included as differential diagnoses for patients in an acute confused state. A transient ischaemic attack (TIA), a brief blockage of blood flow to the brain considered to be a warning sign of impending stroke, mirrors signs and symptoms listed as red flags for NFS injuries (ACI, 2022; Leung et al., 2010). A TIA in young patients should prompt healthcare professionals to suspect NFS as a possible causation. Research is yet to support rates of injury prevalence within the Australian context, however pressure to the neck has been reported to cause brain injury, stroke, spinal injury and cardiac arrest (Bichard et al., 2022; De Boos, 2019; Matusz et al., 2020; White et al., 2021).

Set out below is a non-exhaustive list of injuries that can result from NFS. For healthcare professionals, these conditions and associated

symptoms can be misleading and mimic alternative diagnoses (De Boos, 2019). For service providers, not keeping NFS in mind when observing signs and symptoms of these conditions can mean appropriate medical referrals are missed.

Not keeping NFS in mind when observing signs and symptoms of these conditions can mean appropriate medical referrals are missed

Hypoxia

Hypoxia, a lack of oxygen to body tissue, can manifest following an incident of strangulation where blood flow to or from the brain and/or airflow into the lungs has been impeded (De Boos, 2019). Anoxia, where the blood flow is completely stopped, is easier to recognise as it produces more severe brain injury. However, hypoxia can present as "confusion, agitation or behavioural disturbance, amnesia, drowsiness and slurred speech, and can be mistaken as a presentation of drug intoxication or mental health illness" (ACI, 2022, p. 8). With police instructed to recognise individuals who display "odd behaviour", "difficulty concentrating" and/or "slurred or incoherent speech" as intoxicated, hypoxia may be overlooked and possibly contribute to victims and survivors of NFS being misidentified as perpetrators (Fuller et al., 2016, p. 22). The complexities of differentiating between signs of intoxication and hypoxia caused by NFS can be compounded when it coexists with problematic use of drugs and alcohol, including when this behaviour stems from experiencing DFV (NSW Health, 2021). This points to a need for all service providers to take all disclosures of NFS seriously, despite presenting behaviour, appearance, and the presence of alcohol and other drugs.

Brain injury

NFS can cause an anoxic/hypoxic brain injury by blocking blood flow to or from the brain and/or by blocking the airway and depriving the brain of oxygen long enough for brain cells to die (RACGP, 2022). The time it takes for NFS to kill brain cells varies from person to person and is difficult to study ethically. One study on prisoners and psychiatric patients undertaken before research ethics were a strong consideration found a consistent timeline of symptoms occurring when pressure was applied to the neck interrupting blood flow to the brain (Rossen et al., 1943). This timeline included loss of consciousness at 4 to 10 seconds, convulsion at 15 seconds, involuntary urination at 14 to 40 seconds, and loss of bowel control (only in some patients) at 30 seconds (Rossen et al., 1943, p. 518). After 20 to 30 seconds of continued pressure on the neck, participants experienced significant slowing of the heart rate that in some cases required the use of drugs to reverse (Rossen et al., 1943, p. 517). Upon return of circulation the participants, who were all men aged between 17 and 31 years, reported memory loss, confusion, and mood changes (Rossen et al., 1943). This broad timeline can be used to inform responses to NFS and assist screeners to identify more serious instances of NFS with a higher likelihood of brain injury, for example, when the victim and survivor seems to have lost time (and therefore consciousness), urinated or defecated.

Brain injuries may also occur due to other forms of violence being committed alongside NFS, including punches, kicks or other external forces being applied to the head or body with an impulsive force that shakes the brain (Anderson et al., 2006; Brain Injury Australia et al., 2018). A UK study found that 26.5 per cent of victims and survivors of sexual assault–related NFS also sustained facial injuries during the incident (White et al., 2021, p. 6). A US study that reviewed the medical records of alert patients who presented to the emergency department after NFS found two subdural hematomas not caused by the strangulation in patients who had been manually strangled (Matusz et al., 2020). These studies

highlight strangulation often occurs in conjunction with other forms of violence and reinforce the need to be cognisant of brain injuries caused by both the deprivation of oxygen and by trauma to the head.

Brain injuries can result in short-term or long-term symptoms depending on the severity of the initial injury and recovery processes (Shepherd Centre, 2023). Brain injuries can result in physical, cognitive and behavioural disability including, but not limited to, fatigue, memory and concentration problems, vision and hearing disturbance, speech impairment, personality changes, difficulty in making decisions and reacting to environmental changes, poor coordination, and chronic pain (Brain Injury Australia et al., 2018; Synapse, 2021). A failure to recognise and provide appropriate support for women suffering from a brain injury can impede recovery processes and "result in lost opportunities for economic and social participation, independence and quality of life" (Brain Injury Australia et al., 2018, p. v). Signs of brain injuries caused by NFS can be dismissed as behavioural issues and/or poor mental health, which often coincide with experiences of DFV and sexual violence (Lovatt et al., 2022).

Mental health disorders

NFS is commonly associated with mental health disorders and is described as both an instigator and exacerbator of pre-existing mental health conditions (Bichard et al., 2022). The near-death experience of NFS can induce post-traumatic stress disorder (PTSD), anxiety, depression, suicidal ideation, and nightmares leading to disrupted sleep (ACI, 2022). A UK study found 93 per cent of participants who had experienced NFS and ABI had probable or likely PTSD symptoms as well (Brainkind, 2024). Mental health conditions can overlap with and mask potential brain injuries for victims and survivors of NFS. Other links between brain injury, psychiatric disorders and antisocial behaviour have also been made, including increased rates of future victimisation and criminal activity (Brain Injury Australia et al., 2018; Faculty of Clinical Forensic Medicine Committee, 2023). Mental health conditions associated with experiences of DFV and sexual violence can also result in overlapping diagnoses of the above conditions, contributing to the mental health risk for victims and survivors of NFS (Bichard et al., 2022; NSW Health, 2020; RACGP, 2022). In terms of sexual choking, one study found a significant association between women who had been choked more than five times in their lifetime and four mental health outcomes: depression, anxiety, sadness and loneliness (Herbenick et al., 2021). Further longitudinal studies within the Australian context are required to determine the true relationship between mental health disorders and NFS; however, there is an urgency for responders to acknowledge that those suffering with a mental health condition may have also experienced NFS. Likewise, those who have experienced NFS are at an increased risk of suffering a mental health condition (ACI, 2022).

The list above demonstrates that pressure to the neck can exacerbate pre-existing health conditions, co-occur with and/or mimic other injuries and illnesses (De Boos, 2019). The *Clinical practice guide for managing non-fatal strangulation in the emergency department* recommends that NFS should be considered as a differential diagnosis "for a patient presenting with carotid dissection or any blunt neck injury, or memory gaps during a physical or sexual assault" (ACI, 2022, p. 8). Although this advice addresses issues related to shared symptoms among NFS and other health conditions, there is a need for an expanded list of differential diagnoses where injury caused by NFS should also be considered. Importantly, this list would expand beyond the emergency care and primary healthcare environment, and apply to those working in allied health, alcohol and other drug services, occupational therapy, physiotherapy, counselling, psychology, and other specialist areas.

By maintaining a high level of medical suspicion following NFS supported by the development and tailoring of organisational tools, including a referral pathway and clear protocols for using it, services can better support women advocating for their medical needs following NFS and brain injury. Referral pathways and protocols can be

further strengthened through resources that aid victim and survivor self-advocacy, regular staff training, and standardised follow-up to support victims and survivors and maintain the currency and usefulness of the referral pathway. Research shows to sustain change, referral pathways must be clear; regular and mandatory training needs to include everyone from front-desk workers to those working with victims and survivors; and leadership must be committed (Hegarty et al., 2022).

Implication 5:

Foster greater awareness of potential health implications of non-fatal strangulation so service providers make appropriate medical referrals while remaining cognisant of safety.

Implication 6:

Scaffold better recognition of injuries related to non-fatal strangulation with localised longitudinal studies that focus on the prevalence and relationship with other health implications following strangulation.

Implication 7:

Develop and tailor organisational tools, including a referral pathway and protocol, to facilitate staff making localised and appropriate medical referrals that support women advocating for health needs following non-fatal strangulation and brain injury.

Delayed and hidden signs and symptoms of non-fatal strangulation contribute to health implications being missed

The need to respond to health needs can be downplayed because there is less recognition of delayed injuries, chronic conditions and fatalities associated with strangulation when they do not occur at the time of the act or in the days immediately following the incident (Sharman et al., 2021). Evidence suggests that some victims and survivors of NFS are at an increased risk of suffering a brain injury, developing blood clots and experiencing a stroke days to weeks after strangulation (Sharman et al., 2021). Death can also occur when there are no visible injuries in the period immediately following the strangulation (Sharman et al., 2021). Australia has no current data on the prevalence of brain injuries or strokes that result from NFS. Determining accurate prevalence of NFS, including understanding how it may lead to future health fatality, is further complicated by few victims and survivors seeking medical assistance even when they do have symptoms following strangulation (Sharman et al., 2021). Victims and survivors may underestimate, or not be aware of, the clinical danger or possible long-term consequences of NFS (Donaldson et al., 2023).

> *Victims and survivors may underestimate, or not be aware of, the clinical danger or possible long-term consequences of non-fatal strangulation*

Although NFS can have serious health implications, there may not be any external injuries, and signs and symptoms related to internal injuries may take time to develop (ACI, 2022). A review of Australian and international research found that as many as 49 per cent of victims and survivors of NFS present with no visible signs of injury (De Boos, 2019, p. 305). File analysis of 20 intimate partner homicides in Queensland where strangulation was either present in the relationship before death, the cause of death, or both, found only 29 per cent of family, friends and service workers saw visible injuries resulting from NFS compared to 67 per cent who saw visible injuries from DFV (Sharman et al., 2021, p. 9). A US study that reviewed autopsies of victims whose deaths were a result of strangulation found despite strangulation being the cause of death some victims still had no external signs of strangulation (Gill et al., 2013).

An absence of signs and symptoms and the differing level of skillset in assessing for injuries among different disciplines increase the likelihood of the health needs of victims and survivors being overlooked (Strack et al., 2001). An Australian study focused on the voices of victims and survivors suggested that the lack of visible signs reduced the likelihood of victims and survivors being offered a medical response (Lovatt et al., 2022). As consequence of not receiving an initial medical assessment, these victims and survivors are not offered essential medical follow-up and the potential link between NFS and long-term health conditions can be lost. The absence of obvious physical injury can also impact access to legal (and social) support after NFS. For example, a US study that focused on DFV prosecution cases involving strangulation argued that a lack of police and prosecutor training resulted in a general reliance on visible signs of strangulation to inform higher level criminal prosecution of NFS cases (Strack et al., 2001).

Although there is a consensus between academic research and medical guidelines that signs and symptoms of NFS can have a delayed presentation, the emerging nature of this field means there is inconsistency between different Australian clinical recommendations regarding medical follow-up (ACI, 2022; Bichard et al., 2022; NMHS, 2020; Victoire et al., 2022). A Western Australian guide for clinicians on NFS in the context of IPV advises breathing difficulties can be delayed up to 36 hours post incident and referral to a GP or emergency department physician is recommended with no explicit timeframe provided (NMHS, 2020). Academic research recognises that damage caused to the arteries following a rise in intracranial pressure during NFS puts victims and survivors at continued risk of stroke until the arterial wall has healed (3–6 months), alluding to an extended follow-up timeframe (De Boos, 2019). New South Wales's clinical practice guide for managing NFS in the emergency department provides general advice that if the patient is not referred to a specialist or admitted to hospital, "most patients should be referred to their general practitioner for follow-up care" (ACI, 2022, p. 12). Victoire and colleagues (2022) provide explicit recommendation on follow-up appointments, advising, in the absence of concerns related to DFV and/or other health concerns, appointments should be made 72 hours post initial presentation and again at three months to assess for evolving neurological deficits and cognitive impairment. The understanding that brain injuries can be accumulative and degenerative suggests victims and survivors of NFS should be vigilant about attending routine annual health check-ups (Brain Injury Australia et al., 2018; De Boos, 2019).

In the absence of visible signs of NFS, life-threatening injuries can be investigated using imaging. Medical practitioners must balance the risk of exposure to radiation through imaging with the likelihood of injury (ACI, 2022). Finding the right balance can be difficult due to the data gap on NFS-related injuries and the frequency with which victims and survivors present to the emergency department (Victoire et al., 2022). Current clinical guidelines for NFS require physical red flags to be present for imaging to be warranted (ACI, 2022; Victoire et al., 2022). The RACGP White Book (2022) states that further investigation is justified if the mechanism of injury (how the injury occurred) indicates a more serious strangulation. By improving recognition of the health implications of NFS and its potential for brain injury and increasing the number of medical referrals made, there will be increased data available to strengthen clinical guidelines (Victorie, 2023).

Implication 8:

Build greater understanding of the health implications of non-fatal strangulation among service providers, specifically hidden and delayed signs and symptoms, to increase medical referrals, build clinical data and strengthen clinical guidelines.

Women's brain injuries do not get the attention they deserve

ABIs are popularly understood as injuries sustained during sporting activities like football and boxing, with response and prevention geared to these settings (Farrugia et al., 2020). The connection between brain injuries and DFV is only starting to gain traction in Australia (Farrugia et al., 2020). Understanding that brain injuries can also be caused by NFS in sexual violence and sexual choking lags further behind. Chronic traumatic encephalopathy (CTE) can be a delayed and incurable consequence of repetitive brain injuries. Research into this condition has thus far focused on men in contact sports and military settings (Pearce et al., 2023). More limited examination of female athletes suggests women may be at significantly higher risk of mild TBI with more severe symptoms (Pearce et al., 2023). Women experiencing repeated brain injuries as part of gender-based violence, including NFS or sexual choking, may also be at risk of long-term brain injuries, such as CTE, but are an overlooked cohort in this emerging field. This may in part be because men's brain injuries tend to occur outside the home so get attended to, while women's brain injuries caused by gender-based violence often occur repeatedly (one woman estimated being strangled more than a hundred times in a five-year period) behind closed doors, shrouded in stigma and shame (Lovatt et al., 2022, p. 9).

Common Australian medical assessment tools for brain injuries do not account for NFS as a mechanism of injury. For example, the Westmead Post Traumatic Amnesia Scale (Westmead PTA Scale) has not been formerly tested on patients whose injuries result from hypoxia (Jagnoor & Cameron, 2014; St George/Sutherland Hospitals and Health Services [SGSHHS], 2015). Consequently, the Westmead PTA Scale is only considered credible for brain injuries that occur due to physical force being applied to the head or body (SGSHHS, 2015). A lack of supporting medical assessment tools and the intricacies of diagnosing brain injuries create further obstacles for victims and survivors who seek medical support for their injuries.

Diagnosing brain injuries is complicated by a short list of signs and a long list of symptoms, making medical practitioners heavily reliant on an individual's ability to recognise and communicate the changes that have occurred to the way they think, behave and perform tasks. This process is problematic because often the brain injury itself prevents victims and survivors from identifying their own symptoms (Anderson et al., 2006; Synapse, 2021). Furthermore, victims and survivors of NFS may also have to contend with partners that undermine their self-perception, continued threats in unsafe environments, and social norms that minimise the impact of NFS (Anderson et al., 2006; Brain Injury Australia et al., 2018). These diagnostic complexities mean neuropsychological assessment is the most accurate way to diagnose brain injuries (Allahhama et al., 2023; Rushworth, 2012).

Neuropsychology is described as a branch of psychology that specialises in diagnosing cognitive impairment, including degenerative and neurodevelopmental conditions (Allahhama et al., 2023; Services Australia, 2023). Neuropsychology is utilised for a range of purposes, including clarifying diagnoses, characterising baseline cognitive functioning, identifying cognitive strengths and weaknesses, and guiding clinical management (Allahhama et al., 2023; Rushworth, 2012). Neuropsychologists have been championed as the ideal practitioners for diagnosing brain injuries among athletes, and clinical recommendations advocating for their use in professional sports have been recognised by Brain Injury Australia since 2012 (Rushworth, 2012). An Australian study that explored the satisfaction among private and public practitioners who referred to neuropsychologists found that 90 per cent were satisfied with the service, the majority (69.4%) using the service for management recommendations (Allahhama et al., 2023, p. 414).

A brief search revealed a disparity related to access to neuropsychological assessment between those with potential brain injuries caused by NFS and DFV, and those with injuries caused by sport, motor vehicle accidents and/or problematic use of drugs and alcohol (Canberra

Hospital and Health Service, 2019; Rushworth, 2012; State Insurance Regulatory Authority, 2023; Services Australia, 2023). A UK study (n=60) in which one in two women screened positive for a brain injury found very few of the women (n=2) were referred to neurology clinics or had a neurological assessment after reporting problems to their GP (Brainkind, 2024, p. 42). Access to neuropsychological services for women who experience NFS is hampered by low referral rates and the high cost of appointments stemming from the exclusion of neuropsychology from the Medicare Benefit Schedule (Allahhama et al., 2023; Department of Health and Aged Care, 2023b; Services Australia, 2023). In the absence of neuropsychological services, it is essential that victims and survivors of NFS get good discharge advice that supports medical follow-up by GPs. Victims and survivors of NFS need access to sufficiently lengthy medical appointments so GPs can utilise a trauma-informed approach that acknowledges the patient's unique experiences and respectfully investigates clinical findings (Anderson et al., 2006).

Caseworkers, counsellors and others who engage with victims and survivors on a regular basis can play an important role in supporting medical follow-up and victim and survivor self-advocacy with medical referral letters that outline the impacts of the suspected brain injury on the woman's day-to-day functioning. Supporting victims and survivors in this way was endorsed by women in a UK study which recommended the co-development of "tools and resources that will enable individuals to advocate for themselves and communicate their needs clearly" (Brainkind, 2024, p. 49). The study found some of the key cognitive symptoms of brain injury, including "taking longer to think", "forgetfulness" and "poor concentration", were more frequent in women who had experienced ABIs and NFS (Brainkind, 2024, p. 20). Women who participated in focus groups as part of this study all agreed that being provided with information that "allows you to advocate for yourself is key to regaining control over your life" (Brainkind, 2024, p. 32).

Impeded access to neuropsychological assessment for women with mild brain injuries may have a flow-on effect to accessing social support to improve health and wellbeing. It is worth noting that, as of June 2023, 3 per cent of active participants in the National Disability Insurance Scheme (NDIS) had an ABI as their primary disability and received an average payment of $138,600 (NDIS, 2023, n.p.). Funding distribution is gendered, with 66 per cent of the people receiving NDIS funding for managing an ABI being male (NDIS, 2023, n.p.).

Implication 9:

Improve evidence about, understanding of, and access to neuropsychological assessment and social support for women with brain injuries resulting from gender-based violence including non-fatal strangulation.

Managing mild brain injuries at home can be different when they result from violence

Even with a diagnosed brain injury, access to brain injury rehabilitation services can be limited to those with more severe injuries (usually through motor vehicle and sporting accidents) who tend to take up all available beds. People with mild brain injuries are usually sent home to self-manage their injury under the supervision of family or friends, which can include the perpetrator (ACI, 2022). This makes both discharge advice and resources developed for patients and their families designed to help individuals manage their recent mild brain injury essential to the recovery process.

However, these resources often fail to recognise DFV and NFS as a potential causation of injury (see for example ACI, 2022; Mid North Coast Brain Injury Rehabilitation Service [MNCBIRS], 2017). The RACGP White Book notes "injuries

to the head, neck (including strangulation) and face area are major causes for traumatic brain injury" (2022, p. 31). Identifying the causation of the injury allows practitioners to identify specific challenges faced by their patients and to better contextualise their advice (RACGP, 2022). For example, it is difficult to determine how victims and survivors of sexual violence, who are also dealing with the psychological consequences of their experiences, could reduce "the stressful things" in their life that make it "more difficult to cope with a mild brain injury" (MNCBIRS, 2017, p. 4). Victims and survivors returning home with an IPV perpetrator might also find it confronting to be advised to "take things easy" to allow their brain to recover or "avoid re-injuring" themselves and risking long-term brain damage when these things may be beyond their control (MNCBIRS, 2017, p.4). The unique experience of NFS requires specific, tailored, trauma-informed discharge advice and resources that help victims and survivors of NFS successfully manage mild brain injuries in potentially violent home environments, alongside places to recover from mild brain injuries away from the perpetrator when re-injury is likely.

Implication 10:

Review protocols and resources relating to acquired brain injuries with a domestic, family and sexual violence–informed lens to ensure relevance for women experiencing violence and provide alternatives for managing mild brain injuries when the home environment is not conducive to recovery.

Key consideration 3:

Service providers need to stay cognisant of legal and compensatory responses to non-fatal strangulation and increase specific and informed consent for sexual choking

Across the last decade there has been a drive to improve NSW legislation to better reflect the seriousness of NFS, particularly for victims and survivors of DFV. Early indications of more criminal charges being laid and successfully proven suggests there is a need for service providers to stay cognisant of legal responses to NFS as options victims and survivors may increasingly choose to pursue. Care should also be taken to support the woman's access to legal and compensatory outcomes through effective and accurate case notes. Due to the hidden and delayed nature of injuries resulting from NFS, and the way cognitive decline associated with repeated mild brain injuries can emerge long after the initial injury, services with ongoing contact with women can be important sources of evidence about the impact of NFS and ABI. When working with women engaged in sexual choking, services can increase capacity for specific and informed consent through the provision of non-judgemental and accessible health and legal information. Specific and informed consent is recognised as a core part of sexual consent in the *Commonwealth Consent Policy Framework* (Australian Government, 2023a).

Legal responses to strangulation have not always met the needs of victims and survivors

Strangulation has been part of the *Crimes Act 1900* (NSW) (the Act) since inception. To date there have been two attempts to simplify and modernise the offence, which is contained in s 37 of the Act. In 2014, the 114-year-old offence was decoupled from strangling, choking or suffocating with the intent to commit, or assist someone else to commit, another indictable offence (Hazzard, 2014). This was done to better reflect the experiences of victims and survivors of DFV for whom the act of strangulation itself is the crime (rather than strangulation to rob or sexually assault someone; Hazzard, 2014). With the Director of Public Prosecutions setting out that 70 per cent of domestic violence–related strangulation was being dealt with as common assault rather than the more serious assault occasioning actual or grievous bodily harm, the 2014 changes were an attempt to better reflect the seriousness of strangulation even when there is a lack of visible injuries (Gotsis, 2018). This change saw the original offence widened into two offences (Gotsis, 2018). The original offence was rolled into s 37(2), with s 37(1) designed to apply when a person intentionally chokes, suffocates or strangles another person so as to render the other person unconscious, insensible or incapable of resistance, and is reckless about doing so (Legislation Review Committee, 2014).

The 2014 changes did not produce the expected number of successful prosecutions, so after a review process, in 2018 a third offence was added to s 37 (Gotsis, 2018). The change was, once again, intended to facilitate the prosecution of more offences of choking, suffocation and strangulation, especially in the context of DFV (Speakman, 2018). Attorney-General Mark Speakman said the offence was "specifically formulated to address choking, suffocation and strangulation without consent, including where committed by perpetrators of domestic violence in order to scare, coerce or control the victim"

(Speakman, 2018, p. 2). Unlike the existing two offences in s 37, the 2018 offence s 37(1a) does not require the prosecution to prove the individual made the victim unconscious, insensible or incapable of resistance.

While the terms "chokes, suffocates or strangles" have been part of the Act since inception, they are not defined in the Act, so their ordinary meanings apply. They were retained with the intention to

> *capture a broad range of conduct including, for example, restricting breathing and/or blood flow into or out of the head, for example by placing manual pressure on or around a person's neck or throat, tying an object on or around a person's neck or pressing a person against another object that inhibits air or blood flow. (Speakman, 2018)*

New Zealand and Western Australia have removed jargon entirely, defining NFS as "impeding a person's breathing or blood circulation by either blocking the nose, mouth, or both or applying person's pressure on, or to, the throat, neck or both" (Bettinson, 2022, p. 86).

Section 298 of the *Criminal Code Act Compilation Act 1913* (WA) also makes it clear that NFS can be either partial or complete restriction (Bettinson, 2022). There may be utility in comparing various legal responses to see whether simplified terminology works better to build public understanding and reduce prevalence of NFS.

While formal research into the efficacy of the new strangulation offence in New South Wales has yet to be conducted, figures supplied by the state's Bureau of Crime Statistics and Research (BOCSAR) show a significant uptick in strangulation charges being laid and a higher rate of successful prosecutions under s 37(1a) than s37(1). For example, in the three years leading up to the addition of s 37(1a) there were fewer than 300 strangulation charges laid each year under s 37(1) (BOCSAR, 2023, n.p.). However, in 2022, there were 313 charges laid under s 37(1), with 89 per cent in a DFV context, and the charges were proven 21.7 per cent of the time (BOCSAR, 2023, n.p.). By comparison the same year saw 1,529 charges laid under s 37(1a), with 93.8 per cent in a DFV context and charges proven 31.1 per cent of the time (BOCSAR, 2023, n.p.).

Implication 11:

Conduct research into the efficacy of the 2018 changes to the *Crimes Act 1900* (NSW) against the stated aim of facilitating prosecution of more offences of choking, suffocation and strangulation in the context of DFV.

Services have a role to play in enhancing victim and survivor access to legal and compensatory outcomes after non-fatal strangulation and brain injury

Women who experience NFS and brain injury may wish to pursue legal or victims' compensatory outcomes. Services have a role to play in ensuring their practices and protocols support women having access to a full range of options following NFS and brain injury. Case notes can be an important source of potential evidence, but there can sometimes be concern by service providers about case notes being subpoenaed and used in a way that harms the victim and survivor.

In New South Wales, case notes relating to victims and survivors of NFS experienced in the context of sexual assault have had additional protections under the sexual assault communications privilege (SACP). This special legal rule that came into effect in 1997 limits the disclosure in court of counselling, health and other therapeutic information about victims and survivors of sexual assault and applies in all criminal and apprehended violence order cases in New South Wales (Legal Aid NSW, 2016). The rule takes a broad view of service providers whose records may be considered privileged by courts, including all health professionals, most welfare workers,

and many other professionals (teachers, school counsellors and NGO caseworkers; Legal Aid NSW, 2016). Legal Aid NSW has an SACP service to help navigate this space (Legal Aid NSW, 2016).

Choosing not to document NFS can be problematic as case notes can also be used to support a compensation case, including Victims Support Scheme applications in New South Wales (NSW Government, 2024). Legal Aid NSW advises case notes should be "specific and record direct observations relevant to the service you are providing" (2016, p. 6). Diagnoses should only be included by those who are qualified to make them; however, everyone can record behaviour and symptoms they have observed (Legal Aid NSW, 2016).

Implication 12:

Services should develop data collection and protocols to assist staff to record instances and impacts of non-fatal strangulation in case notes in line with their role and responsibilities alongside regular training to effectively use them.

Specific and informed consent for sexual choking requires understanding of legal and health risks

Sometimes women may report that NFS happened with consent and describe it as sexual choking. The validity of consent can be in doubt when it is informed by misinformation, or when the woman does not understand the risks (Douglas et al., 2023). Some question whether consent is even possible in the context of coercive control (Douglas, 2023; Douglas et al., 2023). For others the problem with consent for sexual choking is it is all too often assumed rather than explicitly stated (Contos, 2022; Tuohy, 2022). Recent affirmative consent amendments to s 61HI of the Crimes Act 1900 (NSW) focus on the need for free and voluntary consent at the time of the sexual activity (s 61HI(1)) and make it clear that consent to one form of sexual activity does not mean consent has been given for another form of sexual activity (s 61HI(5)). With the amended law relating to sexual consent only coming into effect on 1 June 2022, it is too soon for research to show whether these legislative changes will influence sexual participants to seek specific consent for sexual choking (Department of Communities and Justice, 2023).

While consent is a defence to strangulation, it does not protect the person doing the choking if their subject is rendered "unconscious, insensible or incapable of resistance" as a result of it (*Crimes Act 1900* (NSW), s 37(1)). According to Sydney Criminal Lawyers, "non-fatal strangulation offences may apply within the context of consensual sexual choking if a person is rendered 'unconscious, insensible or incapable of resistance'" (Bartle, 2023). This legal firm interprets s 37(1) to mean that light pressure is the only form of consensual sexual choking that carries minimal risk of criminal prosecution in New South Wales (Bartle, 2023). The person being choked may argue whether there was consent or not, especially if they have suffered injury. There is also a risk of civil claims, particularly if the person being choked suffers long-term impacts like a brain injury. Civil claims have a lower standard of proof than the criminal standard, "beyond reasonable doubt". In a civil case, the judge must be satisfied that a case has been made "on the balance of probabilities". The risks and possibility of grave injury including death lead some to question whether consent should be a defence to any form of strangulation (Bettinson, 2022; Douglas, 2023).

Service providers can support specific and informed consent for sexual choking by supporting women to understand the long-term health risks of sexual choking, including the way medical research has expanded in this area in recent times. For example, a recent US study found brain changes (cortical thickening across multiple regions and reduction in gyrification) occurred in young college-aged women aged between 18 and 30 years who were exposed to

frequent choking (Hou et al., 2023). A UK study assessing risk factors for cognitive decline among people aged between 50 and 90 found significant long-term cognitive deficits were associated with three or more lifetime mild brain injuries (Lennon et al., 2023). These researchers, who examined more than 15,000 participants, recommended that long-term cognitive impacts should be a critical consideration when counselling individuals post-TBI about continuing high-risk activities (Lennon et al., 2023).

Implication 13:

Build capacity for specific and informed consent in New South Wales via the provision of non-judgemental and accessible legal and health information relating to sexual choking and brain injury.

Key consideration 4:

The normalisation of sexual choking as a mainstream sexual practice creates a need for accurate and up-to-date health and legal information

There is anecdotal evidence in Australia, and considerable evidence abroad, that NFS in the context of consensual sex – known colloquially as sexual choking – may be increasing in prevalence. The normalisation of sexual choking could be addressed with greater provision of accurate and up-to-date health and legal information that supports women and their sexual partners to make informed choices about the activities they engage in.

Sexual choking may be on the rise in younger cohorts

While reliable prevalence data relating to sexual choking in Australian settings is limited, there is increasing anecdotal evidence that, especially among younger cohorts, "far too many incorrectly believe that choking is routine and risk-free" (Contos, 2022). According to one media report, Australian teenage girls operate under the assumption that "choking, hair pulling and verbal degradation – they had experienced all three – were standard in sex", and that pain and faked pleasure were normal parts of ordinary sexual experiences (Baker, 2023).

A pilot study of 168 undergraduates from the University of Queensland found 56 per cent of participants reported having ever been strangled/choked during sex, with no significant differences between men and women (Sharman et al., 2024). The study found that 18 per cent of respondents were strangled/choked the last time they had sex, with frequency of being strangled significantly higher among women than men (Sharman et al., 2024). International evidence about the prevalence of sexual choking, particularly in the United States, is more advanced. A 2020 study of US undergraduates from one Midwestern university found 26.5 per cent of women, 6.6 per cent of men, and 25.9 per cent of transgender and non-binary respondents had been choked during their most recent sexual event (Herbenick, Fu et al., 2023a, p. 1065). When reduced to just occasions of penile–vaginal sex, one in three women reported being choked at their most recent sexual event (Herbenick, Fu et al., 2023a, p. 1065). Men were more likely to report being choked at their most recent sexual event when it occurred with another man (19.4%) or a transgender or non-binary partner (24.4%) than with a partner who was a woman (5.4%; Herbenick, Fu et al., 2023a, p. 1067). Reciprocal choking was more prevalent among students from sexual and gender minorities, with the highest portion of reciprocal choking seen in lesbians (17.4%; Herbenick, Fu et al., 2023a, p. 1066). Bisexual and heterosexual women were overwhelmingly the ones being choked, and rarely the ones who choked their partner (Herbenick, Fu et al., 2023a, p. 1066). The study demonstrated sexual choking was both prevalent and gendered among the university students they sampled (Herbenick, Fu et al., 2023a). The findings suggest while women are more likely to be choked than their male counterparts, there is utility in also providing women with accurate and up-to-date information about risks associated with choking their sexual partners.

Implication 14:

Provide women and their sexual partners with accurate and up-to-date information about risks associated with choking and being choked by their sexual partners.

Peers and sexual partners influence participation in and beliefs about sexual choking

Pressure from peers can play into choices to engage in sexual choking. Australian media has suggested some young people "participated in sexual activities they did not find pleasurable to avoid peer disapproval and accusations such as 'kink shaming'" (Baker, 2023). This anecdotal evidence is reflected in international studies, with most men who had choked their partner(s) in one study reporting they did so either because their partner had asked them to, or "because they felt it was exciting, adventurous, kinky, or would arouse their partner" (Herbenick et al., 2022, p. 2).

The men operated under the assumption "choking is generally considered pleasurable for the person being choked" (Herbenick et al., 2022, p. 11). The men thought physical reactions from their (usually female) partners – increased vaginal lubrication, moaning and other sounds, closed eyes, head thrown back – were indications that their partners "were feeling good and made choking pleasurable for them when they were doing the choking" (Herbenick et al., 2022, p. 8). By contrast, men in the study felt gasping for air, faces going purple, tears, coughing and gagging were signs that they should stop choking, or reduce the pressure (Herbenick et al., 2022, p. 8). After being initiated into sexual choking by one sexual partner, many of the men went on to incorporate choking into their sexual repertoire, becoming either initiators or proponents of sexual choking (Herbenick et al., 2022). Explicit consent for sexual choking seemed to only occur once in longer-term relationships (Herbenick et al., 2022). If the men had had a discussion where their partner said they liked choking, "consent was not actively sought for repeat sexual encounters involving choking" (Herbenick et al., 2022, p. 11).

Many of the male participants in the study showed concern about inflicting harm, but almost no participants had sought out any specific information, education, or training on how to mitigate risk during choking instead they "based their safety practices on what they felt was common sense and experience" (Herbenick et al., 2022, p. 13). For one study participant, a negative health consequence (his partner experiencing a concussion) was the motivation for discontinuing the practice: "We felt like maybe it was not very safe to do, like, the oxygen deprivation for her recovery and stuff" (Herbenick et al., 2022, p. 13). Delayed health sequelae after choking may contribute to chokers falsely assuming the practice is safe. None of the men in this study showed awareness, knowledge or concern about the potential cumulative effects of being choked including brain injuries (Herbenick et al., 2022). Consequently, those practicing sexual choking may be unaware of the importance of refraining from activities that risk further brain injury while recovering from a mild brain injury (MNCBIRS, 2017). A brief search of NSW Health resources did not produce any formal health resources geared toward those who engage in sexual choking.

Implication 15:

Resource people engaging in sexual choking with up-to-date health information that makes clear the link between choking and mild brain injuries, including the long-term effects of repeated brain injuries.

Pornography and popular culture both shape norms about sexual choking

One US study into sexual choking saw male participants contrast gentle sex focused on kissing, touching and vaginal penetration with rough sex that they described as "more adventurous and could include hitting, biting, slapping, choking, scratching, and use of sex toys" (Herbenick et al., 2022, p. 5). Both locally and abroad, media, research and grey literature has emphasised a correlation between the availability of free internet pornography and the rise of rough sex, including sexual choking (Tuohy, 2022). In a 2018 survey of nearly 2,000 young Australians aged between 15 and 20, three in five young men (60%) and two in five young women (41%) reported using pornography as a source of information to learn about sex and sexual relationships (Our Watch, 2020, p. 3).

Opinions diverge on what can and should be done about young people's access to pornography, particularly violent and misogynistic pornography. Some push for restricting young people's access to pornography using age verification controls. However, in response to eSafety's (2023) *Roadmap for age verification* (the Roadmap), the Australian Government rejected age assurance technologies as immature and subject to privacy, security, implementation and enforcement risks (Australian Government, 2023b). The government instead put the onus on industry, including social media services and internet carriage providers, through new and strengthened industry codes under the *Online Safety Act 2021* (Cth) (Australian Government, 2023b). Others suggest responses to the rise in rough sex and sexual choking should focus not on regulation but harm minimisation. This might, for example, include "teaching young people that porn is not real, that it's okay to say no to rough practices, and that there's nothing wrong with 'vanilla' sex" (Baker, 2023).

The widespread permeation of sexual choking motifs into popular culture would be unaffected by age verification initiatives. The normalisation of sexual choking can be seen in internet memes, with popular hashtags like #chokeme and #chokemedaddy showing they cross cultures in an analysis by US researchers (Herbenick, Guerra-Reyes et al., 2023). Sexual choking has made its way onto Australian screens via exported US television shows, like the popular HBO series, *Euphoria* (2019). The first sex scene in the first episode of this series included non-consensual sexual choking with a voice-over saying, "Now, I know this looks disturbing, but I promise you, this does not end in rape" (Southwick, 2023). Other forms of media have shown a shift in how they report choking. A decade on from *Vogue* being condemned for its cover of Stephanie Seymour being choked by a fellow model (Marikar, 2012), *Harper's Bazaar* can make "chokehold" jokes about Julia Fox's Oscars after-party attire unremarked (Sanchez, 2022). Being "choked out" was presented on the News.com.au sports pages, with accompanying photography of a young woman choked until unconsciousness from behind by a man with massive, tattooed forearms, as "so much better than drugs" ("Dillon Danis chokes out *OnlyFans* model", 2023). The normalisation of sexual choking in popular culture suggests that tackling youth access to pornography may not be sufficient to address the popularity of high-risk practices like sexual choking, so other methods may be required.

The Australian Institute of Family Studies (AIFS) suggests to parents, caregivers and teachers the best way to respond to children's exposure to pornography is with open communication, discussion and fostering critical thinking (Quadara et al., 2017). Alongside its examination of age verification, the Roadmap also recommended a mechanism for better national coordination and collaboration on delivering respectful relationships education (eSafety, 2023). The Australian Government response included budgetary measures for respectful relationships education ($83.5 million over six years) and a national mechanism for enhanced coordination via the National Respectful Relationships Education Expert Working Group (Australian Government, 2023b). Providing better education about sex and pleasure to young people, including reinforcing the expectation that sex is pleasurable for all parties, combined with a literacy approach that

focuses on critical engagement with all forms of media may better support healthy sexual expression and agency.

An international study led by a group of University of Sydney researchers identified six literacy criteria that could help people identify healthy pornography (McKee et al., 2023). The criteria included the onscreen negotiation of consent; depictions of safe sex; a focus on pleasure for all participants; known use of ethical production; inclusion of a variety of sexual practices; and utilisation of a variety of body types, genders and races (McKee et al., 2023). Albury and Mannix (2023) posit that a digital literacy approach that sets out to address individual health consumer deficits of young people (who may be very digitally literate) may not be as effective as a digital capability approach. In this two-way model, health organisations, systems and structures work in collaboration with young people to foster a more sexual health–literate culture (Albury & Mannix, 2023).

Implication 16:

Foster a sexual health–capable culture by building digital capacity to assess and critically engage with all forms of information about sexual choking and factor them into informed consent.

Key consideration 5:

Non-fatal strangulation and brain injuries can impact differently across different life stages and can intersect with other forms of disadvantage and discrimination

The *National Plan to End Violence against Women and Children 2022–2032* (the National Plan) highlights that "violence against women and children can be exacerbated in certain settings and where gender inequality intersects with other forms of disadvantage and discrimination" (Commonwealth of Australia, 2022a, p. 41). Australian data relating to NFS and ABIs in different life stages and for populations impacted by other forms of disadvantage and discrimination is patchy. There is also limited international evidence for these cohorts, with one UK study suggesting there is a need to capture the lived experience of "people who are LGBTQIA+, from Black, Asian and minoritized ethnicities, people with a disability, as well as older people" (Brainkind, 2024, p. 49). By drawing together what we do know about violence against women and girls as experienced by specific cohorts and in different life stages we can begin to tailor responses to NFS and ABIs to better meet the needs of specific groups of service users. For example, the evidence shows us referral pathways should include community-controlled services so groups like Indigenous women and LGBTQ+ people have choices about where they engage (Cullen et al., 2022).

Children

Evidence from the United Kingdom shows 40 per cent of NFS cases took place in the home, and 33 per cent of those homes had children living in them (White et al., 2021). There is a body of evidence linking children being present in the home for violence and later becoming both perpetrators and victims, though violence in the home is rarely experienced in isolation (Campo, 2015). One Queensland study found that adverse childhood experiences (ACEs), particularly exposure to DFV, were prevalent in the developmental histories of young men whose antisocial behaviours brought them into formal contact with the justice system, especially male youths who engage in sexual violence (Ogilvie et al., 2022). Services should remain cognisant that young people who use adolescent violence in the home (AVITH) can also be a source of women's experiences of NFS. When AVITH is misrecognised as a "parenting issue" it minimises the experience of the parent victim and survivor, colludes with the young person using violence, and can create barriers to future help-seeking (Commission of Inquiry into Queensland Police Service responses to domestic and family violence, 2022, p. 185).

Children can also experience NFS. A Queensland study of NFS cases finalised between 2017 and 2020 found that in nearly 7 per cent of casefiles the complainant was a child under 18 years (Fitzgerald et al., 2022). The relationship between the defendant and complainant in these matters was most commonly parent–child (Fitzgerald et al., 2022). An Australian study of young people aged 16 to 20 found 2.2 per cent (n=71) of the 3,209 female participants had experienced NFS (Fitz-Gibbon & Meyer, 2023, p. 5). For one in three girls who reported experiencing childhood physical violence in the study, the violence started before they started school or during primary school (Fitz-Gibbon & Meyer, 2023, p. 7). Reporting violence of this nature can be complicated by living with the perpetrator in the home (Farrugia et al., 2020; Fitz-Gibbon & Meyer, 2023).

Clinical guidelines suggest that in comparison to adults, there is less risk of laryngeal and cervical vertebral injury in children as these structures are relatively elastic in childhood. However, children are more likely to develop consequences of laryngeal swelling and subsequent airway obstruction due to the narrow width of their airway (Children's Health Queensland Hospital and Health Service, 2023). With respect to ABIs and children, an immediate referral to a specialist paediatric service is recommended (Farrugia et al., 2020). The effects of an ABI may not be apparent on a child until behavioural issues manifest later in the child's development (Farrugia et al., 2020). Other Australian research has found the "life-threatening, inescapable, and invasive physiological and psychological nature" of experiencing strangulation or suffocation as a child places the individual at a high risk of dissociation later in life (Kate et al., 2021, p. 17).

There is a strong need for services to keep children in view when responding to NFS. Seeing children and young people as victims and survivors in their own right is supported in the National Plan (Commonwealth of Australia, 2022a). Alongside being alert to children's health and safety needs, services should support the recovery needs of young people who have experienced parental DFV to reduce intergenerational violence and victimisation (Fitz-Gibbon et al., 2022).

Implication 17:

Alongside fulfilling mandatory child safety requirements, adult-focused services addressing non-fatal strangulation and brain injuries should keep children in view and offer referrals for early intervention wherever possible.

Older women

Data from the 2021–22 Personal Safety Survey indicates 0.5 per cent of older women (aged 55 and over) have experienced sexual violence in the last two years (ABS, 2021–22). The Australian Institute of Family Studies found 1 per cent of people aged 65 and older living in community settings reported experiencing sexual abuse in the 12 months preceding the survey, with women slightly more likely than men to report experiencing sexual abuse (1.2% vs 0.7%; Qu et al., 2021, p. 55). Even self-reported prevalence can be underestimated when ageism and mistrust of women's reports of sexual violence intersect to create a climate that rejects the possibility of the sexual assault of older women (Barrett, 2023). For example, service providers can dismiss older women's reports of sexual violence as historic recall of childhood sexual assault, urinary tract infections, dementia or delirium (Barrett, 2023). Listening to older women's reports of sexual violence and using language about sexual violence that older women relate to are both important ways to facilitate disclosure (Barrett, 2023). Emerging evidence supports the use of subtler language that avoids legal terminology about sexual assault (Barrett, 2023). There may also be a need to address any lingering notions of "conjugal rights" with this cohort stemming from the lagging criminalisation of marital rape in New South Wales via the *Crimes (Sexual Assault) Amendment Act 1981 No 42*.

Older women can experience sexual violence from an expanded range of perpetrators beyond their intimate partner. The Royal Commission into Aged Care Quality and Safety (2021, p. 141) estimated the number of alleged incidents of unlawful sexual contact in aged care settings during 2018–19 to be as high as almost 50 per week. Considering these findings alongside other Australian research into elder abuse suggests responses to NFS should factor in a wide range of sexual violence perpetrators including residential aged care service providers, fellow aged care residents, friends, neighbours, family members, carers and other service providers alongside intimate partners (Qu et al., 2021; Royal Commission into Aged Care Quality and Safety, 2021).

Older women can experience sexual violence from an expanded range of perpetrators beyond their intimate partner.

Even a mild brain injury in an older woman has the potential to be significant (NSW Institute of Trauma and Injury Management, 2011). Clinical guidelines suggest that anyone aged over 65 with a mild brain injury is referred to the emergency department (NSW Institute of Trauma and Injury Management, 2011).

LGBTQ+ people

In research investigating LGBTQ+ peoples' experiences of sexual violence, including experiences of disclosing and seeking support and the impacts of sexual violence, ACON found 25 per cent of survey respondents (n=68) had been choked or strangled during sex when they did not want to be (Layard et al., 2022, p. 15). While this data has come from a sample of LGBTQ+ people in New South Wales who self-selected as having experienced sexual violence and cannot be extrapolated as prevalence for general LGBTQ+ populations, the numbers imply that NFS is a significant issue for LGBTQ+ people experiencing sexual violence. A key implication stemming from this research emphasises the importance of building partnerships between mainstream service providers and LGBTQ+ specialist services to ensure better responses, including "no wrong door", for LGBTQ+ people who disclose sexual assault (Layard et al., 2022). Shared experiences of minority stress may contribute to a reluctance by LGBTQ+ people experiencing NFS to report violence and potentially ostracise perpetrators who may also have experiences of trauma and pain (Gray et al., 2020). This may include a fear of losing community connections by calling out abusive behaviour in what can be small and tightknit communities, particularly in rural and regional areas (Gray et al., 2020).

Rural and remote women

Geographic isolation can create additional barriers to accessing appropriate healthcare after NFS and brain injury. Service providers in one study conducted in the Northern Territory identified high primary healthcare workforce turnover, high workloads in remote primary care health clinics, and the use of "fly-in, fly-out" staff as potential reasons ABI diagnoses following violence could be missed (Fitts et al., 2022). The study found high staff turnover could affect trust and disclosure of violence (Fitts et al., 2022). The study also identified that remote healthcare pathways may not be designed to respond to all severity levels of ABIs across the whole region, citing that medical retrieval services are reserved for severe injuries, meaning patients with mild to moderate brain injuries did not get the scans they needed (Fitts et al., 2022). Service providers reported those with ABIs deemed manageable in the community – women who could walk and communicate – did not receive post-injury follow-up to determine if symptoms related to their head injury were ongoing (Fitts et al., 2022). The study found confirmed diagnosis of ABIs via medico-legal reports – a requirement for a range of client support services and in legal settings – can also be hampered by a lack of available specialists in remote areas (Fitts et al., 2022).

Geographic isolation can create additional barriers to accessing appropriate healthcare after NFS and brain injury.

Aboriginal and Torres Strait Islander women

The data gap for Australian studies capturing Aboriginal and Torres Strait Islander women's experiences of NFS and brain injury is significant. Langton and colleagues (2020) focus on strangulation as a safety issue, tying it to escalating violence. They argue that the severity of violence experienced by Aboriginal and Torres Strait Islander women means NFS in

a family violence context should be a separate and additional offence in every Australian jurisdiction (Langton et al., 2020). A Queensland study that examined finalised NFS prosecution cases between 2017 and 2020 found that Aboriginal and Torres Strait Islander peoples were overrepresented in the data (Fitzgerald et al., 2022). Aboriginal and Torres Strait Islander peoples accounted for one in five defendants (21%) and one in four complainants (26%), despite comprising roughly 4.6 per cent of the general population in Queensland (Fitzgerald et al., 2022, p. 8). This overrepresentation occurred at all levels of the legal process, from bail refusal for NFS charges to prosecution, conviction and among those receiving a custodial sentence for NFS, which suggests racial bias may play a role (Fitzgerald et al., 2022, p. 3).

An Australian study conducted across public and private hospitals in Queensland, Western Australia, South Australia and the Northern Territory found Indigenous women experienced head injury due to assault at 69 times the rate of non-Indigenous women (Jamison et al., 2008). Fitts and colleagues (2022) later posited this number would include brain injuries resulting from NFS. They point out the figure is likely to be an underestimation due to the ongoing effects of racial profiling, child removal, colonisation and dispossession, which continue to create systemic barriers to addressing violence experienced by Indigenous women (Fitts et al., 2022). The high levels of violence experienced by Indigenous women are not addressed with appropriate screening and diagnosis of complex trauma (C-PTSD), fetal alcohol spectrum disorders and ABI (Bevis et al., 2020). Diagnosis is critical as it can be tied to both health and legal outcomes, including eligibility for social support (Fitts et al., 2022).

The *Aboriginal and Torres Strait Islander Action Plan 2023–2025* highlights the need to explore opportunities to ensure that workers in services that intersect with domestic, family and sexual violence "have access to training on the prevalence and impact of brain injuries", including how to support Indigenous women to seek medical examination when a brain injury is suspected (Commonwealth of Australia, 2022b, p. 61). Services can also play a role in ensuring that Indigenous women get good responses when they present for healthcare for potential brain injuries, including by ensuring that racial stereotyping does not see them dismissed as intoxicated.

Women with disability

The ABS (2021) found that women living with disability were more likely to have experienced a range of violent behaviours over a 12-month period than women who live without disability. This is consistent with AIC findings which showed 8.6% of women living with disability experienced choking or strangulation by their partners in the first three months of the pandemic (Boxall et al., 2021, p. 7). While not directly comparable (the time periods were overlapping), later research showed fewer adult women (3.9%) in Australia experienced choking or strangulation by their partners in the first 12 months of the pandemic (Boxall et al., 2021b, p. 28). More broadly, research relating to women with disability's experiences of violence emphasises the need to listen to and believe the voices of women with disability (Maher et al., 2018). This research emphasised that supporting women with disability to report violence and access justice after it will be most effective when it builds on pre-existing service support and support for women's economic security and housing stability so they can transition away from the violence (Maher et al., 2018).

Women from culturally diverse, migrant and refugee backgrounds

"Women from culturally diverse, migrant and refugee backgrounds" is a broad and non-homogenous category taken from the National Plan (Commonwealth of Australia, 2022a, p. 41). Barriers to help-seeking after NFS and ABI in sexual violence contexts can be magnified and different for disparate groups within this category. For example, visa holders can find it hard to report violence used against them due to threats leading to a fear of deportation (Vaughan et al., 2020). Being a temporary visa holder can impact a woman's ability to access healthcare without fees

(Segrave, 2017 as cited in Vaughan et al., 2020). Seeking medical assistance after NFS becomes less likely when free visits to public hospital emergency rooms in New South Wales are limited to Medicare card holders (NSW Health, 2022).

Different cultural groups may be reluctant to report NFS and IPV due to cultural beliefs about shame relating to being victims of DFV (Vaughan et al., 2020). Some groups of culturally diverse women in Australia may also be reluctant, in the face of systemic racism, to report men in their communities who are using violence, potentially exposing them to greater harm. The women may also be concerned about contributing to racist stereotypes that harm their community (Haydar, 2022), forgoing reporting harm to themselves to "protect their connection to and position within their diasporic community in Australia" (Vaughan et al., 2020, p. 48). Where interpreting services are required, these can also be a barrier to reporting, particularly when the interpreter is from the woman's community, as it can create concern about shame and privacy (Farrugia et al., 2020). Difficulty communicating in a second (or third) language can be magnified with an ABI making diagnosis harder (Farrugia et al., 2020). Reporting NFS can be impacted when service provision for diverse groups of women, or culturally diverse male perpetrators, is not available, sufficiently private, gender-sensitive, and culturally appropriate (Vaughan et al., 2020).

Implication 18:

When designing responses to non-fatal strangulation and brain injury, care should be taken to consider differences in the way these issues present at different life stages and intersect with other forms of marginalisation and discrimination.

References

Agency for Clinical Innovation. (2022). *Clinical practice guide: Managing non-fatal strangulation in the emergency department*. NSW Health. https://aci.health.nsw.gov.au/__data/assets/pdf_file/0005/750344/ACI-Non-fatal-strangulation-clinical-practice-guide.pdf

Albury, K., & Mannix, S. (2023, November 21). Reframing digital sexual health: from individual literacies to workforce capabilities [Webinar]. UNSW. https://www.youtube.com/watch?v=aSBptfwbpxE

Allahhama, R., Wonga, D., & Pike, K. E. (2023). What do private practice referrers value about neuropsychology assessment? *Australian Psychologist*, *58*(6), 411–431. https://www.tandfonline.com/doi/f/10.1080/00050067.2023.2239436?needAccess=true

Anderson, T., Heitger, M., & Macleod, A. D. (2006). Concussion and mild head injury. *Practical Neurology, 6*, 342–357. https://doi.org/10.1136/jnnp.2006.106583

Australian Bureau of Statistics. (2021). *Disability and violence – In focus: Crime and justice statistics*. ABS. https://www.abs.gov.au/statistics/people/crime-and-justice/focus-crime-and-justice-statistics/disability-and-violence-april-2021

Australian Bureau of Statistics. (2021–22). *Personal Safety, Australia*. ABS. https://www.abs.gov.au/statistics/people/crime-and-justice/personal-safety-australia/2021-22

Australian Domestic and Family Violence Death Review Network, & Australia's National Research Organisation for Women's Safety. (2022). *Australian Domestic and Family Violence Death Review Network data report: Intimate partner violence homicides 2010–2018* (2nd ed.; Research report 03/2022). ANROWS. https://www.anrows.org.au/publication/australian-domestic-and-family-violence-death-review-network-data-report-intimate-partner-violence-homicides-2010-2018/

Australian Government. (2023a). *The Commonwealth Consent Policy Framework: Promoting healthy sexual relationships and consent among young people*. Department of Social Services. https://www.dss.gov.au/sites/default/files/documents/01_2024/consent-policy-framework.pdf

Australian Government. (2023b). *Government response to the Roadmap for age verification*. Department of Infrastructure, Transport, Regional Development, Communications and the Arts. https://www.infrastructure.gov.au/department/media/publications/australian-government-response-roadmap-age-verification

Backhouse, C., & Toivonen, C. (2018). *National Risk Assessment Principles for domestic and family violence* (Insights 07/2018). ANROWS. https://www.anrows.org.au/publication/national-risk-assessment-principles-for-domestic-and-family-violence/

Baker, J. (2023, May 15). I was 13. I thought that's what was expected of me. *Sydney Morning Herald*. https://www.smh.com.au/national/i-was-13-i-thought-that-s-what-was-expected-of-me-20230426-p5d3fh.html

Barrett, C. (2023). *An uncomfortable truth: the sexual assault of older women*. Compass. https://www.compass.info/featured-topics/sexual-abuse-of-older-women/uncomfortable-truth-sexual-assault-older-women-dr-catherine-barrett/

Bartle, J. (2023, April 21). *Can consensual choking for sexual pleasure amount to a criminal offence in NSW?* Sydney Criminal Lawyers. https://www.sydneycriminallawyers.com.au/blog/can-consensual-choking-for-sexual-pleasure-amount-to-a-criminal-offence-in-nsw/

Bettinson, V. (2022). A comparative analysis of non-fatal strangulation offences: Will the proposed s. 75A *Serious Crime Act 2015* work for victims of domestic violence and abuse? *Journal of Criminal Law*, *86*(2), 75–93. https://doi.org/10.1177/00220183221086426

Bevis, M., Atkinson, J., McCarthy, L., & Sweet, M. (2020). *Kungas' trauma experiences and effects on behaviour in Central Australia* (Research report, 03/2020). ANROWS. https://www.anrows.org.au/publication/kungas-trauma-experiences-and-effects-on-behaviour-in-central-australia/

Bichard, H., Byrne, C., Saville, C. W. N., & Coetzer, R. (2022). The neuropsychological outcomes of non-fatal strangulation in domestic and sexual violence: A systematic review. *Neuropsychological Rehabilitation*, *32*(6), 1164–1192, https://doi.org/10.1080/09602011.2020.1868537

Boxall, H., & Morgan, A. (2021a). *Experiences of coercive control among Australian women* (Statistical Bulletin no. 30). Australian Institute of Criminology. https://doi.org/10.52922/sb78108

Boxall, H., & Morgan, A. (2021b). *Intimate partner violence during the COVID-19 pandemic: A survey of women in Australia* (Research report, 03/2021). ANROWS. https://www.anrows.org.au/publication/intimate-partner-violence-during-the-covid-19-pandemic-a-survey-of-women-in-australia/

Boxall, H., Morgan, A., & Brown, R. (2021). *Experiences of domestic violence among women with restrictive long-term health conditions: Report for the Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability* (Statistical Report no. 32). Australian Institute of Criminology. https://doi.org/10.52922/sr78092

Brain Injury Australia, Monash University, Domestic Violence Victoria, No to Violence, & Centre for Excellence in Child and Family Welfare. (2018). *The prevalence of acquired brain injury among victims and perpetrators of family violence*. Brain Injury Australia. https://www.braininjuryaustralia.org.au/wp-content/uploads/BRAININJURYAUSTRALIA familyviolencebraininjury FINAL.pdf

Brainkind. (2024). *Too many to count: Brain injury in the context of domestic abuse*. https://brainkind.org/news/too-many-to-count-report/

Bureau of Crime Statistics and Research. (2023). NSW Criminal Court Statistics Jan 2014 to Jun 2023 [Unpublished internal dataset]. Reference: st23-23007.

Campo, M. (2015). *Children's exposure to domestic and family violence: Key issues and responses*. Australian Institute of Family Studies. https://aifs.gov.au/resources/policy-and-practice-papers/childrens-exposure-domestic-and-family-violence

Canberra Hospital and Health Service. (2019). *Operational procedure neuropsychology referral and administrative process – MHJHADS*. ACT Government Health. https://www.health.act.gov.au/sites/default/files/2018-09/Neuropsychology%20Referral%20and%20Administrative%20Process.docx

Cannon, L., Bailey, J., Ernst, S., St. Ivany, A., Bevilacqua, K., Scheiman, L., & Munro-Kramer, M. (2020). Examining trends in non-fatal strangulation among sexual assault survivors seeking Sexual Assault Nurse Examiner care from 2002 to 2017. *International Journal of Gynecology & Obstetrics*, *149*(1), 106–107. https://doi.org/10.1002/ijgo.13058

Chater, A. M. (2021). Does intentional asphyxiation by strangulation have addictive properties? *Addiction*, *116*, 718–724. https://doi.org/10.1111/add.15247.

Children's Health Queensland Hospital and Health Service. (2023). *Work instruction: Management of paediatric patients with near hanging or strangulation*. Queensland Government. https://www.childrens.health.qld.gov.au/__data/assets/pdf_file/0020/180218/wi-0026.pdf

Commission of Inquiry into Queensland Police Service responses to domestic and family violence. (2022). *A call for change*. https://www.qpsdfvinquiry.qld.gov.au/about/assets/commission-of-inquiry-dpsdfv-report.pdf

Commonwealth of Australia. (2022a). *The National Plan to End Violence against Women and Children 2022–2032*. Department of Social Services. https://www.dss.gov.au/the-national-plan-to-end-violence-against-women-and-children/the-national-plan-to-end-violence-against-women-and-children-2022-2032

Commonwealth of Australia. (2022b). *Aboriginal and Torres Strait Islander Action Plan to End Violence against Women and Children*. Department of Social Services. https://www.dss.gov.au/the-national-plan-to-end-violence-against-women-and-children/aboriginal-and-torres-strait-islander-action-plan-2023-2025

Contos, C. (2022, December 8). Sexual choking is now so common that many young people don't think it even requires consent. That's a problem. *The Guardian*. https://www.theguardian.com/commentisfree/2022/dec/08/sexual-choking-is-now-so-common-that-many-young-people-dont-think-it-even-requires-consent-thats-a-problem

Cullen, P., Walker, N., Koleth, M., & Coates, D. (2022). *Voices from the frontline: Qualitative perspectives of the workforce on transforming responses to domestic, family and sexual violence* (Research report, 21/2022). ANROWS. https://www.anrows.org.au/publication/voices-from-the-frontline-qualitative-perspectives-of-the-workforce-on-transforming-responses-to-domestic-family-and-sexual-violence/

De Boos, J. (2019). Review article: Non-fatal strangulation: Hidden injuries, hidden risks. *Emergency Medicine Australasia*, *31*(3), 302–308. https://doi.org/10.1111/1742-6723.13243.

Department of Communities and Justice. (2023). *Sexual consent*. Retrieved December 18, 2023 from https://dcj.nsw.gov.au/children-and-families/family-domestic-and-sexual-violence/sexual-violence/sexual-consent.html

Department of Health and Aged Care. (2023a). *Introduction of MBS Level E long consultations of 60 minutes or more*. Australian Government. https://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/8D8078B92CB053C5CA258A3F0004BF6E/$File/PDF%20Vers%20-%20Introduction%20of%20MBS%20Level%20E%20long%20consultations%20of%2060%20minutes%20or%20more%20-%20factsheet.pdf

Department of Health and Aged Care. (2023b). *Medicare Benefits Schedule – Item 80115*. Australian Government. https://www9.health.gov.au/mbs/fullDisplay.cfm?type=item&q=80115

Dillon Danis chokes out *OnlyFans* model ahead of Logan Paul fight. (2023, October 12). *News.com.au*. https://www.news.com.au/sport/boxing/dillon-danis-chokes-out-onlyfans-model-ahead-of-logan-paul-fight/news-story/8b2505bad8c9b746ddff462a926acd19

Douglas, H. (2023, October 18). A new bill would bring Victoria's strangulation laws in line with other states – but consent complicates matters. *The Conversation*. https://theconversation.com/a-new-bill-would-bring-victorias-strangulation-laws-in-line-with-other-states-but-consent-complicates-matters-215874

Douglas, H., & Fitzgerald, R. (2022). Women's stories of non-fatal strangulation: Informing the criminal justice response. *Criminology & Criminal Justice*, *22*(2), 270–286. https://doi.org/10.1177/1748895820949607

Douglas, H., Sharman, L., & Fitzgerald, R. (2023, September 12). *Domestic violence and the use of non-fatal strangulation in association with sexual abuse* [Conference presentation]. European Domestic Violence Conference, Reykjavik, Iceland.

Donaldson, A. E., Hurren, E., Harvey, C., Baldwin, A., & Solomon, B. (2023). Front-line health professionals' recognition and responses to nonfatal strangulation events: An integrative review. *Journal of Advanced Nursing*, *79*, 1290–1302. https://doi.org/10.1111/jan.15601

eSafety. (2023). *Roadmap for age verification and complementary measures to prevent and mitigate harms to children from online pornography*. eSafety.gov.au. https://www.esafety.gov.au/about-us/consultation-cooperation/age-verification

Faculty of Clinical Forensic Medicine Committee. The Royal College of Pathologists of Australasia. (2021). *Clinical forensic assessment and management of non-fatal strangulation*. Retrieved November 25, 2023, from https://www.rcpa.edu.au/getattachment/59a67b0e-ca6b-4686-a81f-14a1a15e70fe/Clinical-Forensic-Assessment-and-Management-of-Non.aspx

Farrugia, C., Funston, L., Verco, J., Campbell, J., Rabuka, M., Castro, R., & Andrews, L. (2020). *Time is of the essence: Domestic and family violence and the potential for acquired brain injuries in victim/survivors*. NSW Health Education Centre Against Violence. https://www.ecav.health.nsw.gov.au/ArticleDocuments/3755/ECAV__SWSLHD_DFV_Roundtable.20_August_2019._Evaluation_Outcomes.pdf.aspx

Fitts, M. S., Cullen, J., Kingston, G., Wills, E., & Soldatic, K. (2022). "I don't think it's on anyone's radar": The workforce and system barriers to healthcare for Indigenous women following a traumatic brain injury acquired through violence in remote Australia. *International Journal of Environmental Research and Public Health*, *19*(22), 14744. http://dx.doi.org/10.3390/ijerph192214744

Fitzgerald, R., Douglas, H., Pearce, E., & Lloyd, M. (2022.) *The prosecution of non-fatal strangulation cases: An examination of finalised prosecution cases in Queensland, 2017–2020*. The University of Melbourne and The University of Queensland. https://law.unimelb.edu.au/__data/assets/pdf_file/0005/4096535/Fitzgerald-et-al-ODPP-report.pdf

Fitz-Gibbon, K., & Meyer, S. (2023) *Listen to her. Act now: The experiences and impact of child abuse on Australian girls*. Monash University and Griffith University. https://doi.org/10.26180/24282775.v1

Fitz-Gibbon, K., Meyer, S., Boxall, H., Maher, J., & Roberts, S. (2022). *Adolescent family violence in Australia: A national study of service and support needs for young people who use family violence* (Research report, 18/2022). ANROWS. https://www.anrows.org.au/publication/adolescent-family-violence-in-australia-a-national-study-of-service-and-support-needs-for-young-people-who-use-family-violence/

Fuller, G., Goldsmid, S., & Brown, R. (2016). *Managing intoxicated offenders: Best practice in responding to individuals affected by drugs and alcohol* (NDLERF monograph no. 65). Australian Institute of Criminology. https://www.aic.gov.au/publications/ndlerfmonograph/ndlerfmonograph65

Gill, J. R., Cavalli, D. P., Ely, S. F., & Stahl-Herz, J. (2013). Homicidal neck compression of females: Autopsy and sexual assault findings. *Academic Forensic Pathology*, *4*, 454–457. https://doi.org/10.23907/2013.055

Glass, N., Laughon, K., Campbell, J., Block, C. R., Hanson, G., Sharps, P. W., & Taliaferro, E. (2008). Non-fatal strangulation is an important risk factor for homicide of women. *Journal of Emergency Medicine*, *35*(3), 329–335. https://doi.org/10.1016/j.jemermed.2007.02.065

Gotsis, T. (2018). *NSW's strangulation offence: Time for further reform* (Issues backgrounder no. 3). NSW Parliamentary Research Service. https://www.parliament.nsw.gov.au/researchpapers/Pages/NSWs-strangulation-offence-Time-for-further-reform.aspx

Gray, R., Walker, T., Hamer, J., Broady, T., Kean, J., Ling, J., & Bear, B. (2020). *Developing LGBTQ programs for perpetrators and victims/survivors of domestic and family violence* (Research report, 10/2020). ANROWS. https://www.anrows.org.au/publication/developing-lgbtq-programs-for-perpetrators-and-victims-survivors-of-domestic-and-family-violence/

Haydar, A. (2022). *Writing from and through trauma*. Sydney Review of Books. https://sydneyreviewofbooks.com/essay/writing-from-and-through-trauma/

Hazzard, B. (2014, May 7). Crimes Amendment (Strangulation) Bill 2014. *Hansard*, 28314. Parliament of NSW. https://www.parliament.nsw.gov.au/bill/files/375/2R%20Strangulation.pdf

Hegarty, K., McKenzie, M., McLindon, E., Addison, M., Valpied, J., Hameed, M., Kyei-Onanjiri, M., Baloch, S., Diemer, K., & Tarzia, L. (2022). *"I just felt like I was running around in a circle": Listening to the voices of victims and perpetrators to transform responses to intimate partner violence* (Research report, 22/2022). ANROWS. https://www.anrows.org.au/publication/i-just-felt-like-i-was-running-around-in-a-circle-listening-to-the-voices-of-victims-and-perpetrators-to-transform-responses-to-intimate-partner-violence/

Herbenick, D., Fu, T., Kawata, K., Eastman-Mueller, H., Guerra-Reyes, L., Rosenberg, M., & Valdivia, D. (2021). Non-fatal strangulation/choking during sex and its associations with mental health: Findings from an undergraduate probability survey. *Journal of Sex & Marital Therapy*, *48*(3), 238–250. https://doi.org/10.1080/0092623X.2021.1985025

Herbenick, D., Fu, T., Patterson, C., Rosenstock Gonzalez, Y.R., Luetke, M., Svetina Valdivia, D., Eastman-Mueller, H., Guerra-Reyes, L., & Rosenberg, M. (2023). Prevalence and characteristics of choking/strangulation during sex: Findings from a probability survey of undergraduate students. *Journal of American College Health*, *71*(4), 1059–1073. https://doi.org/10.1080/07448481.2021.1920599

Herbenick, D., Guerra-Reyes, L., Patterson, C., Rosenstock Gonzales, Y. R., Wagner, C., & Zounlome, N. O. O. (2022). "If their face starts turning purple, you are probably doing something wrong": Young men's experiences with choking during sex. *Journal of Sex & Marital Therapy*, *48*(5), 502–519. https://doi.org/10.1080/0092623X.2021.2009607

Herbenick, D., Guerra-Reyes, L., Patterson, C., Wilson, J., Rosenstock Gonzalez, Y. R., Voorheis, E., Whitcomb, M., Kump, R., Theis, E., Rothman, E. F., Nelson, K. M., & Maas, M. K. (2023). #ChokeMeDaddy: A content analysis of memes related to choking/strangulation during sex. *Archives of Sexual Behavior*, *52*(3), 1299–1315. https://doi.org/10.1007/s10508-022-02502-5

Hou, J., Huibregtse, M. E., Alexander, I. L., Klemsz, L. M., Fu, T.-C., Rosenberg, M., Fortenberry, J. D., Herbenick, D., & Kawata, K. (2023). Structural brain morphology in young adult women who have been choked/strangled during sex: A whole-brain surface morphometry study. *Brain and Behavior*, *13*, e3160. https://doi.org/10.1002/brb3.3160

Insight Exchange. (2023). *Insight Exchange engagement report*. https://www.insightexchange.net/wp-content/uploads/2019/05/Insight-Exchange-Engagement-Report.pdf

Jagnoor, J., & Cameron, I. D. (2014). Traumatic brain injury – Support for injured people and their carers. *Australian Family Physician*, *43*(11), 758–763. https://www.racgp.org.au/getattachment/04cad269-6701-4fe3-9217-1962cdfcb2c1/Traumatic-brain-injury-support-for-injured-people.aspx

Jamieson, L. M., Harrison, J. E., & Berry, J. G. (2008). Hospitalisation for head injury due to assault among Indigenous and non-Indigenous Australians, July 1999–June 2005. *Medical journal of Australia*, *188*(10), 576–579. https://doi.org/10.5694/j.1326-5377.2008.tb01793.x

Kate, M., Jamieson. G., & Middleton, W. (2021). Childhood sexual, emotional, and physical abuse as predictors of dissociation in adulthood. *Journal of Child Sexual Abuse*, *30*(8), 953–976. https://doi.org/10.1080/10538712.2021.1955789

Lacerte, M., Hays, S. A., & Mesfin, F. B. (2023). *Hypoxic brain*. National Library of Medicine: StatPearls. Retrieved December 12, 2023, from https://www.ncbi.nlm.nih.gov/books/NBK537310/

Langton, M., Smith, K., Eastman, T., O'Neill, L., Cheesman, E., & Rose, M. (2020). *Improving family violence legal and support services for Aboriginal and Torres Strait Islander women* (Research report, 25/2020). ANROWS. https://www.anrows.org.au/publication/improving-family-violence-legal-and-support-services-for-aboriginal-and-torres-strait-islander-women/

Layard, E. Parker, J., Cook, T., Murray, J., Asquith, N., Fileborn, B., Mason, R., Barnes, A., Dwyer, A., & Mortimer, S. (2022). *LGBTQ+ people's experiences and perceptions of sexual violence: Research summary report*. ACON. https://sayitoutloud.org.au/learn-more/learn-more/research-and-resources/lgbtq-peoples-experiences-perceptions-sexual-violence-report/

Legal Aid NSW. (2016). *Subpoena survival guide: What to do when a court wants confidential information in NSW*. Legal Aid NSW. https://publications.legalaid.nsw.gov.au/PublicationsResourcesService/PublicationImprints/Files/753.pdf

Legislation Review Committee. (2014, May 13). *Legislation Review Digest*, 55/55. Parliament of NSW. https://www.parliament.nsw.gov.au/ladocs/digests/438/Digest%20No.%2054.pdf

Lennon, M., Brooker, H., Creese, B., Thayanandan, T., Rigney, G., Aarsland, D., Hampshire, A., Ballard, C., Corbett, A., & Raymont, V. (2023). Lifetime traumatic brain injury and cognitive domain deficits in later life: The PROTECT-TBU cohort study. *Journal of Neurotrauma*, 1423–1435. http://doi.org/10.1089/neu.2022.0360

Lovatt, H., Lowik, V., & Cheyne, N. (2022) *The voices of women impacted by non-fatal strangulation: Summary report –Key themes*. Queensland Centre for Domestic and Family Violence Research, CQUniversity. https://noviolence.org.au/wp-content/uploads/2022/08/The-voices-of-women-impacted-by-non-fatal-strangulation-FINAL.pdf

Leung, E., Hamilton-Bruce, M., & Koblar, S. (2010) Transient ischemic attacks: Assessment and management. *Australian Family Physician*, *39*(11). https://www.racgp.org.au/getattachment/5e79399f-5a97-4a3e-9837-37b4d4ade553/Transient-ischaemic-attacks.aspx

Maher, J. M., Spivakovsky, C., McCulloch, J., McGowan, J., Beavis, K., Lea, M., Cadwallader, J., & Sands, T. (2018). *Women, disability and violence: Barriers to accessing justice: Final report* (ANROWS Horizons, 02/2018). ANROWS. https://www.anrows.org.au/publication/women-disability-and-violence-barriers-to-accessing-justice-final-report/

Marikar, S. (2012, September 14). *Vogue* under fire for Stephanie Seymour's choking cover. *ABC News*. https://abcnews.go.com/blogs/entertainment/2012/09/vogue-under-fire-for-stephanie-seymours-choking-cover

Matusz, E. C., Schaffer, J. T., Bachmeier, B. A., Kirschner, J. M., Musey, P. I., Roumpf, S. K., Strachan, C. C., & Hunter, B. R. (2020). Evaluation of nonfatal strangulation in alert adults. *Annals of Emergency Medicine*, *75*(3), 329–338. https://doi.org/10.1016/j.annemergmed.2019.07.018

McKee, A., Dawson, A., & Kang, M. (2023). The criteria to identify pornography that can support healthy sexual development for young adults: Results of an international Delphi panel. *International Journal of Sexual Health*, *35*(1), 1–12. https://doi.org/10.1080/19317611.2022.2161030

Mid North Coast Brain Injury Rehabilitation Service. (2017). *Mild brain injury or concussion*. Mid North Coast Local Health District.

National Disability Insurance Scheme. (2023). *Acquired brain injury summary June 2023*. https://data.ndis.gov.au/reports-and-analyses/participant-dashboards/acquired-brain-injury

NSW Government. (2015). *Domestic Violence Safety Assessment Tool (DVSAT)*. Department of Communities and Justice. https://www.facs.nsw.gov.au/download?file=592948

NSW Government. (2020). *Safety Action Meeting Manual*. https://www.facs.nsw.gov.au/download?file=592951

NSW Government. (2022). *NSW Sexual Violence Plan 2022–2027.* Department of Communities and Justice. https://dcj.nsw.gov.au/documents/service-providers/domestic-and-family-violence-services/NSW-Sexual-Violence-Plan-2022%e2%80%932027.pdf

NSW Government. (2024). *Victims Support Scheme quick guide*. Department of Communities and Justice. https://victimsservices.justice.nsw.gov.au/documents/how-can-we-help-you/victims-support-scheme/vss-overview/VSS-quick-guide.pdf

NSW Health. (2020). *Responding to sexual assault (adult and child) policy and procedures* [Policy directive]. NSW Government. https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2020_006.pdf

NSW Health. (2021). *NSW Health Strategy for Preventing and Responding to Domestic and Family Violence 2021–2026*. https://www.health.nsw.gov.au/parvan/DV/Pages/dfv-strategy-2021-2026.aspx

NSW Health. (2022). *Emergency departments*. Retrieved December 1, 2023, from https://www.health.nsw.gov.au/Hospitals/Going_To_hospital/Pages/emergency-departments.aspx

NSW Institute of Trauma and Injury Management. (2011). *Adult trauma clinical practice guidelines: Initial management of closed head injury in adult*s (2nd ed.). NSW Health. https://aci.health.nsw.gov.au/networks/eci/clinical/clinical-tools/head-injuries

North Metropolitan Health Service. (2020). *Non-fatal strangulation (NFS) in the context of intimate partner violence: A guide for clinicians*. Government of Western Australia. https://www.kemh.health.wa.gov.au/For-Health-Professionals/Family-and-domestic-violence/Resources

Ogilvie, J., Thomsen, L., Barton, J., Harris, D. A., Rynne, J., & O'Leary, P. (2022). *Adverse childhood experiences among youth who offend: Examining exposure to domestic and family violence for male youth who perpetrate sexual harm and violence* (Research report, 13/2022). ANROWS. https://www.anrows.org.au/project/adverse-childhood-experiences-and-the-intergenerational-transmission-of-domestic-and-family-violence-in-young-people-who-engage-in-harmful-sexual-behaviour-and-violence-against-women/

Our Watch. (2020). *Pornography, young people, and preventing violence against women: Background paper*. https://www.ourwatch.org.au/resource/pornography-young-people-and-preventing-violence-against-women-background-paper-2020/

Pearce, A., Olive, R., & Townsend, S. (2023, July 4). Researchers identify first case of CTE in a female athlete**.** *The Conversation*. https://theconversation.com/australian-researchers-confirm-worlds-first-case-of-dementia-linked-to-repetitive-brain-trauma-in-a-female-athlete-208929

Qu, L., Kaspiew, R., Carson, R., Roopani, D., De Maio, J., Harvey, J., & Horsfall, B. (2021). *National elder abuse prevalence study: Final report*. Australian Institute of Family Studies. https://aifs.gov.au/research/research-reports/national-elder-abuse-prevalence-study-final-report

Quadara, A., El-Murr, A., & Latham, J. (2017). *Online pornography effects on children and young people: Research snapshot*. Australian Institute of Family Studies. https://aifs.gov.au/research/research-snapshots/effects-pornography-children-and-young-people

Rossen, R., Kabat, H., Bethesda, D., & Anderson, J. P. (1943). Acute arrest of cerebral circulation in man. *Archives of Neurology and Psychiatry, 50*, 510–528. https://litfl.com/wp-content/uploads/2019/09/Rossen-1943-Acute-Arrest-of-Cerebral-Circulation-in-Man.pdf

Royal Australian College of General Practitioners. (2022). *Abuse and violence – Working with our patients in general practice* (RACGP White Book; 5th ed.). https://www.racgp.org.au/FSDEDEV/media/documents/Clinical%20Resources/Guidelines/Whitebook/Abuse-and-violence-working-with-our-patients-in-general-practice.pdf

Royal Australian College of General Practitioners. (2023). *Psychosocial resources to use with your patients*. https://www.racgp.org.au/FSDEDEV/media/documents/Faculties/SI/Psychosocial-resources-AVF-SIG.pdf

Royal Commission into Aged Care Quality and Safety. (2021). *Final report: Care, dignity and respect*. Commonwealth of Australia. https://www.royalcommission.gov.au/aged-care/final-report

Rushworth, N. (2012). *Policy paper: Concussion in sport*. Brain Injury Australia. https://www.braininjuryaustralia.org.au/resources/brain-injury-australia-publications/policy-papers/concussion-sport/

SA Health, Government of South Australia. (2019). *Strangulation: Assessment following non-fatal strangulation in the context of an alleged assault*. Women's and Children's Health Network. https://cdn.wchn.sa.gov.au/downloads/WCHN/womens-health/Strangulation_Assessment.pdf

Sanchez, C. (2022, 29 March). Julia Fox wore a clawed hand around her neck to the Oscars after-party. *Harper's Bazaar*. https://www.harpersbazaar.com/celebrity/latest/a39562356/julia-fox-outfit-after-party-oscars-2022/

Schori, A., Jackowski, C., & Schön, C.A. (2022). How safe is BDSM? A literature review on fatal outcome in BDSM play. *International Journal of Legal Medicine*. *136*(1), 287–295. https://doi.org/10.1007/s00414-021-02674-0

Services Australia. (2023). *Mental health care and Medicare*. Australian Government. Retrieved December 18, 2023, from https://www.servicesaustralia.gov.au/mental-health-care-and-medicare?context=60092

Sexual Assault Resource Centre. (2020). *Non-fatal strangulation* [Patient fact sheet]. North Metropolitan Health Service, Government of Western Australia. https://www.kemh.health.wa.gov.au/~/media/HSPs/NMHS/Hospitals/WNHS/Documents/Patients-resources/SARC---Non-fatal-strangulation.pdf

Sharman, L. S., Douglas, H., & Fitzgerald, R. (2021). *Review of domestic violence deaths involving fatal or non-fatal strangulation in Queensland*. The University of Melbourne and The University of Queensland. https://espace.library.uq.edu.au/view/UQ:5da8771

Sharman, L. S., Fitzgerald, R., & Douglas, H. (2024). Strangulation during sex among undergraduate students in Australia: Toward understanding participation, harms, and education. *Sexuality Research and Social Policy*. https://doi.org/10.1007/s13178-024-00941-4

Shepherd Centre. (2023). *Anoxic brain injury and hypoxic brain injury*. Retrieved November 20, 2023, from https://www.shepherd.org/programs/brain-injury/about/anoxic-hypoxic-brain-injury

Southwick, H. (2023, 15 May). Sultry and unsettling at the same time: The most memorable "Euphoria" sex scenes so far. *Parade*. https://parade.com/1378720/hannah-southwick/sultry-and-unsettling-at-the-same-time-the-steamiest-euphoria-sex-scenes-so-far/

Speakman, M. (2018, October 17). *Second Reading Speech Legislative Assembly*. Parliament of NSW. Retrieved 11 December 2023 from https://www.parliament.nsw.gov.au/bills/Pages/bill-details.aspx?pk=3563

St George/Sutherland Hospitals and Health Services. (2015). *Post traumatic amnesia (PTA) testing – Protocol for.* South Eastern Sydney Local Health District. https://www.seslhd.health.nsw.gov.au/sites/default/files/groups/StGTrauma/Policies/SGSHHS_CLIN155_Post_Trauma_Amnesia_testing.pdf

State Insurance Regulatory Authority. (2023). *Neuropsychological assessment of children and adults with traumatic brain injury*. NSW Government. https://www.sira.nsw.gov.au/resources-library/motor-accident-resources/publications/for-professionals/guides-for/neuropsychological-assessment-of-children-and-adults-with-traumatic-brain-injury-guidelines

Strack, G., McClane, G., & Hawley, D. (2001). A review of 300 attempted strangulation cases part i: Criminal legal issues. *Journal of Emergency Medicine*, 21(3), 303–309. https://doi.org/10.1016/S0736-4679(01)00399-7.

Synapse. (2021). *Acquired brain injury: The facts* (6th ed.). Brain Injury Association of Queensland. https://synapse.org.au/wp-content/uploads/2021/01/Synapse-ABI-The-Facts-Sixth-Edition-2021.pdf

Tuohy, W. (2022, December 3). Strangulation during sex has been "mainstreamed" but risks brain damage, experts warn. *The Sydney Morning Herald*. https://www.smh.com.au/national/strangulation-during-sex-has-been-mainstreamed-but-risks-brain-damage-experts-warn-20221129-p5c216.html

Vaughan, C., Block, K., Sullivan, C., Hourani, J., Khaw, S., Jarallah, Y., Zannettino, L., Gregoric, C., Murray, L., Suha, M., Chen, J., Murdolo, A., & Sandhu, M. (2020). *Multicultural and Settlement services Supporting women experiencing violence: The MuSeS project* (Research report, 11/2020). ANROWS. https://www.anrows.org.au/publication/multicultural-and-settlement-services-supporting-women-experiencing-violence-the-muses-project/

Victoire, A. (2023, December 8). *ABI from a medical perspective* [Presentation]. Domestic and family violence injuries: Focus on acquired brain injury roundtable. Hunter DFV Consortium.

Victoire, A., De Boos, J., & Lynch, J. (2022). "I thought I was about to die": Management of non-fatal strangulation in general practice. *Australian Journal of General Practice*, *51*(11), 871–876. https://www1.racgp.org.au/ajgp/2022/november/management-of-non-fatal-strangulation

White, C., Martin, G., Schofield, A. M., & Majeed-Ariss, R. (2021). "I thought he was going to kill me": Analysis of 204 case files of adults reporting non-fatal strangulation as part of a sexual assault over a 3 year period. *Journal of Forensic and Legal Medicine*, *79*, 102128–102128. https://doi.org/10.1016/j.jflm.2021.102128

Zilkens, R., Phillips, M., Kelly, M., Aqif Mukhtar, S., Semmens, J., & Smith, D. (2016). Non-fatal strangulation in sexual assault: A study of clinical and assault characteristics highlighting the role of intimate partner violence. *Journal of Forensic and Legal Medicine*, *43*(10), 1–7. https://doi.org/10.1016/j.jflm.2016.06.005

Legislation

Crimes Act 1900 (NSW). http://classic.austlii.edu.au/au/legis/nsw/consol_act/ca190082/

Criminal Code Act Compilation Act 1913 (WA). https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_218_homepage.html

Crimes (Sexual Assault) Amendment Act 1981 No 42 (NSW). https://www8.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/num_act/caaa1981n42351/

Online Safety Act 2021 (Cth). http://classic.austlii.edu.au/au/legis/cth/consol_act/osa2021154/


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