

A Gendered Lens on Acquired Brain Injury

By Phoebe Nagorcka-Smith

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We acknowledge the Traditional Custodians of the lands and waters on which we live and work. We pay our respect to Elders past and present. Sovereignty has never been ceded.

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Content note

This paper discusses violence, including details about how specific acts of gendered violence can lead to injury and disability. This paper also discusses structural violence, child removal, medical sexism, and other forms of oppression. If you are affected by the issues discussed within the paper, and would like further information or support, please consider accessing [Synapse Australia](#), [1800 RESPECT](#), [Breathless](#), or [Lifeline](#).

Language note

The author has used identity first language (i.e. 'disabled women' rather than 'women with a disability') as a personal preference, and in recognition of the social model of disability. Different types of gender-based violence have been articulated within the paper to acknowledge that research often refers to specific forms of violence, such as intimate partner or sexual violence, rather than gender-based violence more broadly.

Acronym list

ABI:	Acquired brain injury
CTE:	Chronic traumatic encephalopathy
DFSV:	Domestic, family and sexual violence
GP:	General practitioner
NDIS:	National Disability Insurance Scheme
NHMRC:	National Health and Medical Research Council
PTSD:	Post-traumatic stress disorder
TBI:	Traumatic brain injury

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About Australian Women's Health Alliance

[Australian Women's Health Alliance](#) is the national voice on women's health. Our aim is to achieve gender equity in health for all women.

We do this:

- by highlighting how gender shapes experiences of health and health care, recognising that women's health is determined by social, cultural, environmental and political factors
- by drawing attention to the issues, often far reaching, that impact women's health
- as a national health peak body, by working closely with our members, partners and government to effect change.

The Alliance is a national leader in developing, advancing, and responding to public policy and practice as it impacts women's health. We provide independent, evidence-based advice to promote a gendered approach to women's health care.

Preface

Australian Women's Health Alliance is committed to gender and health equity, drawing attention to the systemic and gendered issues that impact women's health. As a proud member-based organisation with diverse individual and organisational members throughout Australia, we recognise the importance of amplifying women's voices and lived experiences in research, policy and practice.

This member led position paper covers issues impacting women with acquired brain injury (ABI), underpinned by the social model of health and social model of disability. Despite increased awareness of the health impacts of gender-based violence, addressing its connection to ABI remains a critical gap and opportunity.

We must strengthen evidence and action that address gendered bias to build gender-responsive health systems. This is vital to achieving gender and health equity.

Bonney Corbin

Chair

Australian Women's Health Alliance

December 2024

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Introduction

This position paper seeks to:

- describe the links between gender, gender-based violence and acquired brain injury (ABI) prevalence, diagnosis and response
- platform issues that have been raised by women with ABI and provide clear, practical recommendations for policy makers and practitioners
- explore the role of domestic, family and sexual violence (DFSV) in ABI prevalence and response (and vice versa)
- articulate the role of prevention, intervention and response systems and practitioners in preventing, responding to, and supporting women with ABI
- outline the role of national strategies and policies in preventing and responding to ABI in women
- use a social determinants lens, on a concept that is largely defined within a medical model.



A gendered lens on brain injury: A snapshot



ABI and DFSV

- ABIs are common but under-diagnosed and under-reported in women, especially those affected by family and domestic violence.
- Rising rates of sexual violence and sexual strangulation are placing women at higher risk of ABI.



Victorian data insights

- While national data is unavailable, Victorian research shows that 2 in 5 women and 1 in 4 children admitted to hospitals due to family violence related injuries have ABI.¹
- In Victoria 80% of women victims of family violence attending hospitals have head or facial injuries, but most are not screened for ABI.²



Challenges in diagnosis and care

- Women's ABI symptoms are often dismissed or wrongly attributed to psychological issues or alcohol and other drug use.
- There is a lack of research to account for gendered differences in ABI diagnosis, symptoms, prognosis, treatment and recovery.



Challenges in diagnosis and care

- Gendered bias in medical care, structural racism towards First Nations women, and under-resourced health systems leave women without adequate care.
- Untreated ABI is a barrier to women's rights and recovery from family violence, child custody, regaining employment. It also makes it harder to access social security and health systems.



Media and policy gaps

- Most media and research on ABI has focused on men, specifically veterans and sportspeople.
- Despite growing attention on concussion and ABI in contact sports,³ there is little policy discussion of DFSV as a leading cause of ABI and concussion.

Recommendations



Government policy

1. That the Australian Government resource and implement recommendations from the Victorian Royal Commission into Family Violence nationwide, to improve and standardise practice across all jurisdictions. This should include:
 - a. undertaking research in each state and territory to determine the prevalence of brain injury in people who have used and experienced family violence
 - b. developing brain injury resources for people who have experienced violence, used violence, and who work in the family violence sector, to assist in identification and management
 - c. adding screening questions to risk assessment tools, to assist services to identify ABI
 - d. piloting brain injury services in each state and territory to support diagnosis and rehabilitation.
2. That all governments fully resource the action in the Aboriginal and Torres Strait Islander Action Plan 2023-25 to explore opportunities to implement programs in services that intersect with domestic, family and sexual violence (DFSV) to ensure workers have access to training on the prevalence and impact of brain injuries and how to support clients to seek medical examination if brain injury is suspected.
3. That all governments recognise the importance of preventing and responding to ABI in policy and implementation relating to DFSV, such as the National Plan to End Violence against Women and Children 2022-2032, action and prevention plans, early intervention, response and recovery sector resourcing.
4. That the Australian Government launch a parliamentary inquiry into ABI in women, which includes investigation of the national prevalence, impact, experience, and response, with particular emphasis of the role of DFSV.
5. That all governments ensure national and state/territory-based housing policy prioritises safe, accessible, affordable and timely public and emergency housing, including for people at risk of homelessness, with disability, and leaving family violence. Ensure crisis housing is gender-inclusive and enables families with teenaged children to remain together in refuges.
6. That all governments better integrate disability support and legal/carceral systems, to ensure that women with ABI have access to all necessary supports (including the NDIS) while engaged with the legal/carceral systems and that they are supported to avoid criminalisation.

7. That all governments fund and support service co-location (including health justice partnerships) to support women who are not allowed to access health and justice services by their abuser to access diagnosis and recovery.
8. That the Australian Government resource a national community of practice to bring together policy makers, practitioners, and researchers with a special interest in ABI from DFSV, to strengthen and grow Australia's prevention and response capability.
9. That all governments resource DFSV response services to be accessible by default and offer access modifications without requiring the disclosure or attainment of a diagnosis, to reduce barriers for women with ABI, particularly those from over-policed communities.



Practice

10. That service settings provide education to all DFSV professionals on the prevalence and impact of ABI, identifying ABI, and appropriate referral pathways.
11. That health, social, education and disability settings provide training for professionals and pre professionals, including GPs, primary health care providers, and professionals who work in community/chronic disease spaces, to educate on the prevalence and impact of ABI, and to better recognise, diagnose, treat, and respond to women with ABI, particularly from DFSV.
12. That service settings and agencies trial ABI screening tool/s for use in:
 - a. emergency department and primary care (GP) settings, where patients present with head, neck, or strangulation injuries
 - b. legal and carceral systems, with women given agency over their health information to enable them to use it for self-advocacy.
 Including tools that:
 - c. are culturally safe, developed in collaboration with First Nations people and communities
 - d. include all signs of probable ABI/concussion, beyond a loss of consciousness.
13. That hospitals establish a standardised protocol and pathway for responding to probable ABI, and head, neck and strangulation injuries in emergency departments, to ensure best practice and consistency.
14. That emergency response services, including hospitals, embed specialist and peer navigator roles to support women with probable ABI from DFSV that are available beyond standard business hours. This includes identified positions for First Nations, culturally and linguistically diverse, and disabled women.

15. That all jurisdictions establish public brain injury rehabilitation clinics that provide holistic, multi-disciplinary support across the spectrum of brain injury severity (concussion, mild, moderate and severe), including inpatient and/or online options, and secondary consult models, to support women in regional, rural and remote areas.
16. That service settings reduce the administrative burden of health, disability and social support systems in consultation with community-led disability organisations and provide easy-access options and/or case management for women with ABI.
17. That carceral systems cease the practice of solitary confinement of children and young people, with an aim of increasing access to human rights and education.
18. That education providers design inclusive educational settings for children and young people with ABI including those with high support needs.
19. That Disability Employment Services, Centrelink, and housing and homelessness services ensure staff are aware of ABI and gender-responsive approaches, with a focus on access to and appropriateness of services for people with ABI and reducing stigma.
20. That all police, corrections and legal/court services train staff to better identify and respond to ABI, prevent the criminalisation of disability, and establish diversion options.
21. That governments and service settings develop community education and campaigns to increase awareness of the risk of ABI posed by sexual strangulation, and reducing the practice, particularly among younger people.
22. That governments, service settings and communities co-design community education resources that explain the causes, prevalence and impact of ABI; as well as supports available, with an aim of preventing ABI and improving diagnosis and treatment rates.
23. That service settings develop early intervention programs targeted at men with ABI to prevent DFSV and reduce stigma.
24. That DFSV response services improve accessibility and offer access modifications without requiring the disclosure or attainment of a diagnosis, to reduce barriers for women with ABI, particularly those from over-policed communities.



Research

25. That the [Traumatic Brain Injury Mission Expert Advisory Panel](#) prioritises research that conducts an intersectional gendered analysis of ABI, including the role of DFSV.
26. That the Australian Government National Health and Medical Research Council (NHMRC) ensures the [Medical Research Future Fund](#) traumatic brain injury (TBI) grants prioritise research that focuses on DFSV, include a gendered lens, and consider concussion/'mild' TBI.
27. That the Australian Government and research bodies fund Aboriginal and or Torres Strait Islander researchers and organisations to lead and partner in DFSV and ABI research.
28. That researchers address evidence and practice gaps around the health impacts of DFSV including ABI, associated non-communicable disease, and psychological trauma.
29. That researchers ensure research that shapes the design of safety systems (including in motor vehicles) is inclusive of, and responsive to, all genders.
30. That researchers conduct trials of treatment and recovery options that treat both ABI and psychological trauma, particularly in the context of DFSV.
31. That the Australian government and research bodies invest in research that explores sex and gender differences in the prevalence, impact, experience and prognosis of ABI, including the influence of social and gendered determinants of health.
32. That Australian Government medical associations and bodies develop national guidelines that cover the common causes, prevalence, diagnosis, impact, treatment, prognosis and secondary health impacts of ABI in women.
33. That researchers study the impact of ABI on endocrine systems, and of menstruation on ABI experience and prognosis.
34. That researchers develop objective biomarkers of ABI and pilot diagnostic tools in health care settings, with an analysis of the impact of these tools on gendered diagnostic bias.
35. That funders ensure research funding timeframes are long enough to enable co-designed and community-based projects, and the relationship development required to conduct research safely with marginalised communities.
36. That the Australian Bureau of Statistics and other research bodies include questions about presence of (and risk factors for) brain injury in population surveys relating to homelessness, and housing and economic security.

Policy context

[The National Preventive Health Strategy 2021-2030](#)

Violence broadly is recognised as a social determinant of health, and as a potential outcome of alcohol and other drug use, in the National Preventive Health Strategy. However, domestic, family and sexual violence (DHSV) does not feature as a priority. Brain injury is not discussed.

[National Women's Health Strategy 2020-2030](#)

The health impacts of HSV are a key priority in the National Women's Health Strategy. While actions related to HSV in the Strategy are set in the response system and aimed at better identification and support, systems that adequately resource healing are likely to prevent or reduce health impacts, such as prolonged psychological trauma or chronic pain. The Strategy provides useful guidance for ensuring that the health system recognises violence as a relevant issue. However, ABI is not mentioned in the document, despite dementia being listed as a priority issue and that research has identified head injury as a risk factor for dementia and other neuro-degenerative conditions.^{4 5}

[National Plan to End Violence Against Women and Children 2022-2032](#) and [First Action Plan 2023-2027](#)

The National Plan to End Violence Against Women and Children and the First Action Plan were developed to provide a national framework for action against gendered violence. The National Plan uses the Change the Story Framework of gendered drivers of violence to articulate the determinants of violence and way forward. The National Plan does not go into detail about the impacts of gendered violence, including ABI, though it does contain a link to the National Preventive Health Strategy, with a note that violence is articulated as a determinant of health in that document.

The National Plan discusses the need for cross-sectoral collaboration to address HSV. While several response systems are within the jurisdiction of state governments, some, such as social security, Medicare, the NDIS, and Aboriginal Community Controlled Organisations are funded or governed federally.

[National Aboriginal and Torres Strait Islander Action Plan 2023-2025](#)

This plan addresses the disproportionately high rates of DFSV experienced by First Nations women. First Nations women are significantly more likely to experience ABI than non-First Nations women. The plan contains a medium-term (2-3 years) action to 'explore opportunities to implement programs in services that intersect with DFSV to ensure workers have access to training on the prevalence and impact of brain injuries and how to support clients to seek medical examination if brain injury is suspected', to be implemented by Commonwealth, state and territory governments.

[Australia's Disability Strategy 2021-2031](#)

The first policy priority of this strategy is that 'People with disability are safe and feel safe from violence, abuse, neglect and exploitation.' As a key driver of ABI in women, the prevention of DFSV is critical. ABI is not highlighted in the strategy as a consequence of violence, or as a factor that can make women more vulnerable to coercion, abuse, or criminalisation.

[Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability](#)

In 2023, the Royal Commission released its final report containing 222 recommendations on how to improve laws, policies, structures and practices to prevent violence, abuse, neglect, and exploitation of people with disability. Despite strong links between gender, disability, and DFSV, only 2 recommendations explicitly addressed the connection. The report did highlight the large proportion of people with ABI within the carceral system. Recommendation 6.25 to 'Expand the scope of health workforce capability development to include all forms of cognitive disability at all stages of education and training' does specifically support better response to ABI.

State and Territory policy infrastructure

National systems and strategies work alongside state and territory plans that address community health and wellbeing and DFSV – often specifically family and domestic violence. State and territory-based plans tend to contain specific reform actions relating to service provision, quality and consistency, capacity building, best practice guidance, prevention investment, and community-based response. They also inform local government action. State and territory governments are also largely responsible for several major systems that intersect with DFSV and ABI, including Treaty (for example, Victorian Government's treaty process with the [First People's Assembly of Victoria](#)),^{6,7} human rights legislation, mental health care, hospitals, education, community-based health services, health promotion primary prevention, and non-NDIS disability services.

[Victorian Royal Commission into Family Violence](#)

The Royal Commission into Family Violence was completed in 2015 and handed down 227 recommendations.⁸ Brain injury is discussed in the final report as both a result of family violence and prevalent characteristic among the carceral population. Chapter 20 of the final report discussed ABI as a critical and neglected health impact of family violence.

Recommendation 171 to 'Fund research into acquired brain injury in relation to family violence' resulted in the nation-leading 2018 report by Brain Injury Australia 'The prevalence of acquired brain injury among victims and perpetrators of family violence'.⁹

Understanding the gendered nature of acquired brain injury

Drivers and prevalence

In Australia, approximately 1 in 45 Australians (438,300 people) have an ABI that has resulted in disability, including 20,000 children. Approximately two thirds of people diagnosed with ABI are men (68%).¹⁰ Due to screening and diagnosis issues however,¹¹ it is likely that significantly more women have ABI than these figures portray.

ABI has various causes including head trauma (such as being hit, or in a car accident), a lack of oxygen (such as from cardiac arrest, a difficult birth, or strangulation), biological processes (diseases such as dementia, epilepsy, or multiple sclerosis), and alcohol or other drug use (over long periods of time, or excessively in a short period).¹² The most common cause of ABI for people younger than 65 years in Australia is a traffic accident (55%).¹³ Women are particularly vulnerable to significant injury from car accidents, because safety testing uses crash test dummies modelled on male bodies and car safety features are therefore designed for people with a typically 'male' frame, musculoskeletal make-up, and posture.^{14 15}

There is a strong link between domestic, family and sexual violence (DFSV) and ABI, particularly among women and children, as the result of blows to the head and neck, shaking, strangulation, and non-fatal suicide attempts.^{16 17} International research suggests that 1 in 3 women experience family violence, and between one quarter¹⁸ and three quarters¹⁹ of these have an ABI as a result. Many experience multiple ABI-inducing assaults, with the risk of injury increasing with the number of repeat incidents.²⁰ Head injuries are the most common reason for hospitalisation following family violence.²¹ Despite this, most women and children who experience family violence do not report the violence or attend hospital, and those who do present to hospitals with head and neck injuries are rarely screened for ABI, so prevalence based on diagnosis rates is likely to be significantly under-estimated.²²

There is a concerning lack of nation-wide studies on brain injury prevalence in Australia. However, Victorian data available due to research commissioned in the wake of the Royal Commission into Family Violence shows that 2 in 5 women and 1 in 4 children attending Victorian hospitals due to injuries from family violence have sustained a brain injury.²³ However while 1,800 Victorians attend hospital each year due to family violence,²⁴ the Personal Safety Survey by the Australian Bureau of Statistics reports that around 220,000 Victorians experience family violence each year,²⁵ suggesting that the statistics on brain injury detected in hospital are likely to be smaller than actual prevalence. First Nations women are 35 times more likely to be hospitalised due to

family violence²⁶ and up to 69 times more likely to experience a head injury from assault than non-First Nations women.²⁷

Brain injury from strangulation can occur in the context of DFSV, but also in the context of consensual strangulation during sex (also called choking).²⁸ Strangulation in the context of sex is increasing, possibly influenced by its representation in pornography.²⁹ It often occurs without explicit discussion about the act prior and very few people who have engaged in it access health information to understand the risks.³⁰ Because strangulation – whether consensual or not – impacts oxygen supply, it creates risk of hypoxic brain injury and spinal injury.³¹ Strangulation is a significant risk factor for intimate partner homicide.³²

Impacts

The medical model classification of an ABI as mild, moderate, or severe is usually based on the Glasgow Coma Scale, which monitors a person's eye, motor, and verbal responses, to determine how conscious they are and categorises ABIs as mild (GCS 14-15), moderate (GCS 9-13) or severe (GCS 3-8).³³ A concussion is a type of mild brain injury that is typically caused by a blow to the head or sudden change in motion (such as whiplash) that does not necessarily result in a loss of consciousness, or damage that can be seen on imaging, but does cause a cascade of chemical and functional changes.³⁴ Even 'mild' ABIs and concussion can result in medium and long-term impacts to health and functioning.

Physical health

The impacts of ABIs vary widely with the severity of injury. Severe injuries may result in significant impairment to someone's consciousness, autonomic functions (such as breathing and heartbeat), motor functions, and communication.³⁵ Mild to moderate ABIs may cause loss of consciousness, headaches, fatigue, memory impairment, irritability, depression, frustration, dizziness, poor concentration, difficulty communicating, noise sensitivity, restlessness, impulsivity, seizures, poor executive functioning and slow cognition.^{36 37} More than 1 in 3 people with ABI need help with cognitive or emotional tasks.³⁸

Emerging research links ABIs to long-term health complications such as dysautonomia, degenerative neurological conditions (such as multiple sclerosis), and chronic pain.^{39 40 41} ABI can also increase the risk of long-term neurological decline, such as dementia,^{42 43} chronic traumatic encephalopathy (CTE),⁴⁶ and changes in brain structure.⁴⁷ The similarity in symptoms between dementia and CTE, and underdiagnosis of CTE in women, brings the high rates of dementia in women⁴⁸ into question. It also raises the possibility that CTE may contribute to the rate of dementia diagnosis in First Nations

women – who have a higher lifetime prevalence of head injury from assault - being 3-5 times higher than in non-First Nations women.⁴⁹

Mental health and wellbeing

Research consistently demonstrates high rates of depression and anxiety in adults and adolescents with ABI.^{50 51 52} A number of studies show a link between ABI and post-traumatic stress disorder (PTSD), which can result both from the incident causing the brain injury (such as a car accident or assault), and subsequent treatment.^{53 54} Despite the prevalence of mental health conditions and psychosocial disability alongside ABI, Brain Injury Australia reports that practitioners have trouble distinguishing between symptoms, which contributes to women not being screened for or diagnosed with ABI, and all symptoms being attributed to psychological trauma.^{55 56} Researchers and practitioners report that the higher risk of being subject to DFSV, and gaslighting by medical professionals, can also lead to psychological distress in women with ABI.⁵⁷

Family, community and social wellbeing

ABI does not only impact women's individual health and wellbeing: it also has significant impacts on their social connection, and the way that they are treated by society and their community. This includes social isolation, less access to social supports, experiences of discrimination and reduced ability to navigate community and workplace environments.

UK-based brain injury organisation Headway reports that 70% of people with ABI have experienced a deterioration in their social life since sustaining an ABI.⁵⁸ Some people with ABI experience changes in their personality, as well as emotional and impulse control, which can put a strain on relationships.⁵⁹ Symptoms such as fatigue and sensory sensitivity can make social settings difficult to navigate.⁶⁰ It is also not uncommon for people with ABI to be mistaken as intoxicated (by alcohol or other drugs) in licensed venues,⁶¹ which can create barriers for socialising and increased risk of criminalisation.

The diagnosis and symptoms of ABI, as well as stigma associated with the condition, may result in family separation. This risk is compounded where ABI is the result of DFSV,⁶² particularly where systems abuse is at play: a violent partner may threaten or pursue custody of shared children to continue to perpetuate abuse, with stigma around ABI increasing the risk of a women being deemed 'unfit' to parent. A fear of child removal may also prevent women from accessing diagnosis and health care following brain injury;^{63 64} particularly among First Nations communities.

ABI and associated disability can create challenges for women experiencing DFSV, including in negotiating unsafe situations and escaping violent relationships. Depending on the nature and severity of ABI, women may experience symptoms that make

recognising and responding to coercive control difficult, including impaired cognition, problem solving, communication, and decision making.

When a partner who is also a caregiver is using violence, they may exploit a woman's ABI to justify restricting her autonomy and financial independence, reinforcing patterns of control and coercion. This dynamic not only deepens the power imbalance but also makes it harder for her to escape the cycle of abuse. The increased risk of social isolation and administrative and mental burden associated with escaping a violent relationship, particularly if violence is perpetrated by a carer and/or a woman requires accessible refuge, also presents a significant barrier. While there is promising work underway with Aboriginal and/or Torres Strait Islander women, there is a need to further investigate the impacts of ABI, including from DFSV on women who experience multiple and intersecting forms of disadvantage and structural discrimination.⁶⁵

Economic consequences

Many women with ABI, particularly as a result of DFSV, experience long-term financial and quality of life impacts.⁶⁶ Only 2 in 5 people with ABI return to work within 2 years of their injury.⁶⁷ The overall employment participation rates of people with ABI or stroke are 32%.⁶⁸ People with ABI are among those with disability who tend to require a higher level of support to re-enter the workforce.⁶⁹ Despite a legislative right in Australia for people with disability to undertake work in a safe environment, discrimination persists. 1 in 4 Australians with disability report having experienced discrimination from an employer and 2 in 11 from a work colleague.⁷⁰ A lack of access to workplaces with reasonable modifications and without stigma reduces the likelihood that women with ABI can re-enter the workforce. This creates significant risks of financial insecurity and isolation for people with ABI.

Financial insecurity is in turn a risk factor for family violence; economic empowerment, including a stable and adequate income and access to emergency funds, can protect women from the onset and exacerbation of violence and provide opportunity to escape.⁷¹

Housing

People with ABI are at greater risk of homelessness and of conditions that are associated with housing instability such as unemployment, mental health conditions and psychosocial disability. National data collection on housing and homelessness do not track rates of ABI among people without stable housing. Estimates suggest that people with ABI may represent up to 1 in 4 people experiencing homelessness.⁷²

Young people with ABI appear to face particular risk of homelessness. Young people may have difficulty with emotional regulation, aggressive behaviours increased likelihood of school absence and experience a limited capacity to work or study following ABI. This puts strain on carers, including family members. Families who support these young people typically report reaching a 'breaking point' with their behaviour within 5 years of them leaving school. This can result in police intervention, and young people being asked to leave their homes without the skills needed to survive independently.⁷³ There are also well-documented links between homelessness and interaction with legal and carceral systems,⁷⁴ in which people with ABI are significantly over-represented.

Housing insecurity and the adequacy of social, accessible and affordable housing is an issue Australia-wide, but particularly pronounced in contexts such as emergency housing, post-disaster recovery, and safe housing for women escaping violence. Challenges include availability, but also safety, affordability, accessibility and access to adequate services such as heating and cooling. In our climate change impacted world, the link between adequate housing and ABI is more pronounced, particularly for women who have experienced DFSV. Extreme heat and cold, which are becoming more prevalent, necessitate decent, affordable heating and cooling. Women with ABI may struggle with thermoregulation because of their injury and have related conditions that respond to heat such as chronic pain and dysautonomia. Where women have experienced violence, they may not be able to use cheaper methods of maintaining a livable temperature in their homes such as opening doors and windows, due to concerns related to safety and security. Given the low employment rate among people with ABI and associated financial insecurity, affordable housing and utilities are a particular concern.

Education

91% of children with ABI are considered to have high support needs, which is more than for any other disability type.⁷⁵ 44% of adults aged 18-65 years with ABI are considered to have a severe or profound disability.⁷⁶

Solitary confinement of children within the carceral system can be a particular challenge for children's educational development and is not currently prohibited in any jurisdiction. Reliable data on the rates of ABI among children in the carceral system is not available due to underdiagnosis and data collection issues that occur across both child/youth and adult systems (see next section). Based on the increased likelihood that people with ABI have contact with the criminal and legal system seen in adult populations, it is likely that children with ABI make up a fair proportion of children in juvenile detention.⁷⁷ The practice of solitary confinement and impact on education is therefore an issue of concern for children and young people with ABI.

Legal and carceral system

The symptoms of brain injury, including aggression and confusion, can lead to women being mis-identified by police as the primary person using family violence or mistaken as alcohol or other drug affected.⁷⁸ This can significantly influence the support that women receive following an incident of violence and contribute to their criminalisation. ABI symptoms such as aggression and impulsivity can also result in criminalisation for behaviour that is best described as being related to their disability rather than malicious intent.⁷⁹

While we know that a high proportion of incarcerated women have ABI, exact figures are unknown due to poor screening, diagnosis, and record management, as well as a gendered imbalance in research within carceral populations.⁸⁰ Research suggests between 33% and 78% of women in prison have experienced significant head injury. The high proportion of incarcerated women who have experienced DFSV, alongside the established link between this violence and ABI, may help explain the elevated rates of head injuries within this population.^{81 82}

The 2001 New South Wales Inmate Health Survey reported that 39% of women and 45% of men in custody had experienced a head injury that resulted in a loss of consciousness and of those people, 41% of women and 23% of men continued to endure side effects, such as depression, anxiety, memory loss, poor concentration, and personality changes.⁸³ A 2011 study by Corrections Victoria found 33% of women and 42% of men in Victorian prisons had an ABI, compared to 2% of the general population.^{84 85} Women with ABI in prison can experience additional challenges due to a withdrawal of supports they may have received 'on the outside' (such as NDIS), vulnerability to mental health conditions, psychosocial disability, bullying, and cognitive impairment that can impede self-regulation, decision making, and communication.⁸⁶ There are reports of women with ABI in prison experiencing social isolation, frustration, escalating cycles of punishment and inappropriate solitary confinement, including when 'deemed' unfit for trial.⁸⁷

Gender asymmetry in diagnosis

Although 80% of women who attend hospital due to family violence have head or facial injuries, brain injuries are often not screened for, or are missed in assessments.⁸⁸ The many women who never attend hospital following violence are even less likely to receive diagnosis, as screening tools are not routinely deployed in DFSV services.^{89 90} Even when these tools are used, many women who have experienced violence would not attend a medical or hospital setting for numerous reasons, including lack of confidentiality, risk of lateral violence (harmful behaviours within marginalised communities experiencing oppression)⁹¹, and fear of reporting to child protection or policing services.

Where there are screening questions relating to ABI, such as in Victoria's Multi-Agency Risk Assessment and Management tool,⁹² they are brief and unlikely to pick up all cases. There is also inconsistent risk assessment between jurisdictions and agencies. Where screening does indicate a brain injury may be present, services struggle to refer women to diagnostic, treatment and support services that can assist them in a timely and affordable way.^{93 94}

When women do attend health settings, they face a range of barriers to diagnosis. There is currently no 'gold standard' for screening tools and the tools that are available are not consistently deployed within emergency departments.⁹⁵ Practitioners may not be trained to recognise ABI. This is problematic because currently ABI diagnosis is based largely on subjective criteria, particularly for mild brain injuries and concussion.⁹⁶ As a result, women's symptoms may be dismissed due to the gendered bias ingrained in the medical system^{97 98 99 100 101} and ABI is often mistaken for psychological trauma (which may co-occur)^{102 103} or drug use,¹⁰⁴ particularly in First Nations women.¹⁰⁵ While the symptoms of psychological trauma and ABI do overlap, and are likely to co-occur when the ABI results from a traumatic event like DFSV, research suggests that brain injury should be considered a greater influence on cognitive and central nervous system symptoms, as well as its persistence months after the assault.¹⁰⁶ This includes impact on memory, concentration, dizzy spells, vision and hearing.¹⁰⁷ In other words, it is not helpful or accurate to attribute symptoms to psychological trauma.

While ideally an ABI could be diagnosed through imaging, neurology, or neuropsychology services, there are excessive wait lists and high costs associated with these services. It may take months or years to be assessed, with costs in the thousands of dollars, particularly in the private system.¹⁰⁸ High costs are out of reach for many women. Gendered economic inequity, including lower wages, insecure work, and greater reliance on an inadequate social security system, compound the challenges of accessing a diagnosis. Women who have experienced family violence and disabled women face financial stress and the women who most need diagnosis are often the least able to access it. As a result, for many women with ABI, the only care they receive is in the

emergency department immediately following an injury (if at all). As there is no nationally standard care pathways for people with suspected ABI, or head and neck injuries from DFSV, women's experiences in emergency departments are varied and actioning referrals after discharge from emergency departments can be challenging. Often when women are experiencing violence there are other priorities which are perceived as more immediate, such as housing, and liaising with child protection, which reduce the focus on follow up medical treatment.

Women who can access follow up health care may also face barriers to diagnosis if their symptoms are dismissed because they are coping or masking their condition. Given the low rates of diagnosis, the reality is that many women with ABI continue to live without formal support by necessity. Some may also choose to hide their symptoms for a long time, to avoid stigma, discrimination and contact with child protection and legal systems. Once women's symptoms and experience are documented within one system (such as a health setting), they often lose agency over that 'data' and the records may place them at risk.

Women also face considerable pressure to conform to social expectations and gendered roles (such as the carer of others), which may push them to ignore symptoms. However, the fact that they 'cope' does not mean that it is without cost, many people with ABI are able to function, but it takes more energy and can lead to poor health outcomes.

Structural barriers to treatment and recovery

Without diagnosis, accessing treatment and recovering from, or adapting to, ABI can be difficult.

Barriers to treatment and recovery for women include:

- medical gaslighting
- denial of medical care due to health professionals' assumptions about the quality of life someone does/could have¹⁰⁹
- a lack of specialist rehabilitation clinics (only a handful nation-wide) and practitioners with specialist expertise¹¹⁰
- gatekeeping to rehabilitation services (through refusal to diagnose or refer)
- the cost of rehabilitation (prevalence of user-pays and private clinics)
- poor treatment options available
- a need to travel long distances, particularly for rural women
- a scarcity of ABI research that includes and/or focuses on women
- the administrative burden associated with medical, insurance, and social security systems
- fear of reporting/systems abuse.

Administrative burden or the work that people must do to access social support can include barriers associated with learning (how hard it is to understand how to access and use a program), psychological well-being (emotional drain), and compliance (how difficult it is to meet the program rules and requirements).

The administrative burden can be especially high when women are required to access multiple services for support.¹¹¹ For example, health care, financial counselling, family violence support and counselling, housing, and social security payments may all sit within different organisations due to siloed funding from governments. Recounting their experiences can compound a person's trauma, while navigating many appointment locations and times can be difficult to track among the changes brought about by ABI.

While DFSV services aim to streamline support for victim-survivors by providing case management, resourcing constraint and high demand mean that many of these services can only support women for a limited time if at all. These services also may not be equipped to support people with disability. Victim-survivors with brain injuries are likely to need access to other social supports, such as Centrelink payments or, if they have been able to secure a diagnosis, the NDIS and Victims Assist Programs.

A review into the administrative burdens of the NDIS showed that participants must navigate complex systems including confusing paperwork, inconsistent information, and planning meetings that required hours of pre-work such as conversation, assessment,

and appointments with specialists.¹¹² NDIS participants needed to have a high level of understanding of their disability and possible supports (even when their disability was recently acquired and they did not know what might be helpful), to be able to communicate these things clearly and to be comfortable advocating for themselves.¹¹³

The system requires applicants to have good executive functioning, language skills, memory, self-confidence, emotional control and access to financial resources. These are often the things that an ABI, particularly in the context of trauma from family violence, can erode. Such differences in experience of disability, and of life itself (for example, also providing care for others) appears to be excluding many women from NDIS access.¹¹⁴

Brain Injury Australia reports that people with a brain injury can have trouble remembering appointments, navigating travel arrangements, paying for transport, making decisions, exercising emotional control, and being able to concentrate on personal needs and priorities.¹¹⁵ A support person to keep track of information may be helpful, but family violence and NDIS system barriers can make accessing a support person difficult, particularly when the primary person using violence is also a carer. While barriers to support systems such as the NDIS are experienced by all, First Nations and culturally and linguistically diverse communities appear to have worse experiences. Structural issues including racism, inaccessibility, and a lack of cultural awareness or community partnership, make it harder for some women to access support.

The administrative burdens of the NDIS are also reflected in the experiences of people accessing Centrelink.¹¹⁶ Complex online forms, a requirement for specialist medical reports, meetings in hard-to-reach locations or at inconvenient times, complex eligibility and compliance criteria and staff without an understanding of disability and brain injury, are all features of our social welfare system. Centrelink programs can inadvertently punish people for symptoms of their brain injuries, such as through cutting payments due to missed appointments, a poor understanding of program requirements, not having paperwork completed on time, or failing to clearly communicate all the information needed. Anecdotal reports from social security specialists within the Legal Aid network suggest that significant proportions of their caseloads involve people with undiagnosed ABI.

Gendered gaps in research

Despite the suspected prevalence in women who have experienced family violence, and the rates of family violence, a significant proportion of ABI research has been conducted in men, most often men who have sustained ABIs in their workplace (boxers, rugby and Australian Football League players, ex-military personnel) and has not included women in the study sample.^{117 118} This has led to an incomplete and potentially inaccurate picture of the prevalence and impact of ABI.¹¹⁹ More research on the interplay between DFSV, ABI, mental health conditions and psychosocial disability would be beneficial, as would the identification of objective markers of ABI that could reduce diagnostic overshadowing and bias.

Emerging research shows that post-concussion symptom scores among women are higher than in men, from the start of menarche (first period), through their fertile years, to menopause.¹²⁰ This suggests that there is likely to be a biological basis for sex differences in symptoms and severity. However, more research is needed to explore what is driving these differences, and to determine how much is related to sex (biology) and how much is related to gender (socialisation, for example how comfortable someone is disclosing symptoms).¹²¹

A lack of research into sex- and gender- differences in inflammatory responses to ABI also creates challenges for managing the long-term impacts of ABI, which can include the development of chronic conditions that have higher prevalence rates among women, such as chronic pain and neurodegenerative disease.¹²² There are also indications that ABI might have an impact on hormone production and the menstrual cycle,^{123 124 125} and that the stage of the menstrual cycle women are in when they are injured significantly impacts their symptoms and outcomes.¹²⁶ These associations need to be tested with further studies, including clinical trials, to achieve the best recovery outcomes for women.

Following the Victorian Royal Commission into Family Violence, the Department of Health and Human Services commissioned a review into ABI prevalence among victim-survivors,¹²⁷ which is, to date, the only study of its kind in Australia. We still need accurate prevalence data nationwide, and to address the large, gendered research gap in terms of treatment, recovery, and long-term complications such as CTE. This research gap translates into a poor understanding of ABI among health care, legal and social service workers about the way that brain injury looks in women, resulting in under-diagnosis, stigma and discrimination.

Conclusion

Domestic, family and sexual violence (DHSV) is a significant cause of ABI in women. Despite the suspected prevalence of ABI in women as a result of HSV, there is a lack of resourcing and policy development to support a thorough understanding of the prevalence, optimal prevention, diagnosis and treatment of ABI.

Women's experiences of ABI are marked by inconsistency, lack of understanding, medical gaslighting, and hostile social support systems. Inaccessibility of systems, including HSV and diagnostic services and housing, and employment support, increase the risk of repeat ABI associated with women being unable to leave abusive relationships, and entrench disadvantage after they have sustained an ABI. Social support and disability insurance systems such as the NDIS and Centrelink discriminate against people with ABI through inaccessible design, which makes it harder for women to engage with the very systems that are meant to support them.

Intersecting forms of disadvantage and discrimination that affect women's health are magnified in their experiences of ABI and drive a range of negative health and social outcomes. First Nations women are more likely to experience ABI from HSV but are less likely to be able to access support, and more likely to be criminalised due to their disability. Criminalisation of people with brain injury more broadly, and a lack of police capacity to identify ABI in both primary users of violence and affected family members, is a significant issue.

Preventing and responding to ABI in women is a critical issue that requires social, community, governmental, research, and practice responses. The health, HSV, police, legal, carceral, education, and disability systems all require greater understanding of ABI, and improved capacity to prevent, identify, refer and respond to probable ABI. HSV systems must be equipped with the resources to respond to the needs of women with disability, including ABI, and disability systems must have the capacity to support women experiencing or escaping from violence. Critically, social support and disability systems must be designed with accessibility as a priority, so that women with ABI are able to navigate them and gain the support they need and are entitled to.

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