EMA Emergency Medicine Australasia

Emergency Medicine Australasia (2025) doi: 10.1111/1742-6723.14557

ORIGINAL RESEARCH

Children exposed to family and domestic violence perpetrated against their mother are at an increased risk of emergency department attendance in childhood

Carol ORR [1], Scott SIMS [1], Colleen M FISHER,[1] Melissa O'DONNELL,[2] Rebecca A GLAUERT[3] and David B PREEN[1]

[1]The School of Population and Global Health, The University of Western Australia, Perth, Western Australia, Australia, [2]The Australian Centre for Child Protection, The University of South Australia, Adelaide, South Australia, Australia, and [3]Raine Study, The University of Western Australia, Perth, Western Australia, Australia

Abstract

Objective: To determine the association between family and domestic violence (FDV) exposure and ED attendance in Australian children.

Methods: The present study comprised a population-based retrospective cohort study using deidentified linked administrative data of children born 1987–2010, in Western Australia ($n = 58\,352$). Multivariate Cox proportional hazards modelling was used to estimate the association of FDV exposure with ED attendance. Estimates are presented as adjusted and unadjusted hazard ratios (HR) with Wald 95% confidence intervals (CI).

Results: Children exposed to FDV had a 35% (HR = 1.35, 95% CI: 1.32–1.38) increased risk of ED attendance than non-exposed children. Following model adjustment for sociodemographic and clinical characteristics a statistically significant increased risk of 21% (HR = 1.21, 95% CI: 1.18–1.23) was observed in FDV-exposed children compared to their non-exposed counterparts. When stratified by Aboriginal status, an increased risk for ED attendance was observed in both Aboriginal and non-Aboriginal children exposed to FDV, when compared to non-exposed counterparts (aHR = 1.13, 95% CI: 1.11–1.16; aHR = 1.42, 95% CI: 1.37–1.47, respectively).

Conclusions: Exposure to FDV is associated with an increased risk of ED attendance in childhood. The findings add to the limited literature providing further support that FDV exposure impacts children's health service utilisation and further supports that children's exposure to FDV as an area of public health concern. Attendance at the ED presents an opportunity for intervention.

Key words: *childhood trauma, children, ED attendance, exposure to violence, family and domestic violence.*

Key findings

- Exposure to FDV is associated with an increased risk of ED attendance in childhood.
- Children's exposure to FDV as an area of public health concern.
- Attendance at the ED presents an opportunity for intervention.

Introduction

Family and domestic violence (FDV) refers to acts of and/or threat of violence or abuse, including physical, non-physical and/or sexual, between current or former intimate partners, as well as family members[1]; the acts can be both criminal and non-criminal. Utilisation of the term FDV should not detract from the fact that it is a gendered act that is disproportionately perpetrated by men against women.[2,3] Children's exposure to FDV is a public health concern, associated with a range of adverse health and social outcomes.[4,5] Children's exposure to FDV is a wider construct than the child witnessing the abuse, it ranges from the child being an eyewitness to the child being ostensibly unaware of the abuse.[6]

It is difficult to accurately identify the extent of children's exposure to FDV in the population. FDV incidents often occur at home, hidden and denied by both victim and perpetrator.[7,8] Because of difficulty identifying FDV and exposure, the

Correspondence: Dr Carol Orr, The School of Population and Global Health, The University of Western Australia, M431, Perth, WA 6009, Australia. Email: carol.orr@uwa.edu.au

Carol Orr, BA, BSc(Hons), MSc, PgCert Ed, PhD, Research Fellow; Scott Sims, MBiostats, Biostatistician; Colleen M Fisher, BA, PhD, Head of School; Melissa O'Donnell, BPsych(Hons), MPsych, Dip Ed, PhD, Deputy Director; Rebecca A Glauert, BPsych(Hons), PhD, Scientific Director; David B Preen, BSc(Hons), PhD, Chair of Public Health.

Accepted 19 December 2024

prevalence estimates vary widely. For example, reported estimates range from 11% in Australia[9] to 25% of children in the United States (US).[10] Within Australia FDV occurs at higher rates in Aboriginal and Torres Strait Islander (hereafter respectfully referred to as Aboriginal) communities than in non-Aboriginal communities,[11] resulting in higher rates of exposure for Aboriginal children.

Previous research has reported that children exposed to FDV have more health problems than non-exposed children.[5,12] A longitudinal study of Australian children found that FDV-exposed children were more likely to be hospitalised for a range of health issues including, infectious diseases and dermatology disorders, than non-exposed children.[5] Further research has highlighted increased likelihood of allergies and asthma in exposed children compared to non-exposed.[13]

Health service utilisation in children exposed to FDV has been discussed within the existing literature,[14,15] however the utilisation of health services by FDV-exposed children is complex. Parents may not use health services for fear of FDV being detected leading to subsequent child protection service involvement. There is little research on the use of ED services in children exposed to FDV. The majority of published literature examining ED use by children exposed to FDV emanates from the US,[14–16] although findings from these studies are mixed. Casaneueva and colleagues[14] used data from the US National Survey of Children and Adolescent Wellbeing Study to investigate ED attendance in a 12-month period. They found a 52% higher risk of ED contact in children exposed to one to five episodes of FDV, however, no significant risk was noted in those exposed to more than five episodes. Rivara and colleagues'[15] longitudinal study reported a 55% increased odds of ED attendance for children while the FDV was occurring. However, they noted that ED attendance before and after FDV exposure was not significantly increased. A 3-year cohort study by Bair-Merritt and colleagues,[16] further reported that severe FDV exposure was associated with a 100% increased risk of ED attendance in children while no significant association was noted with 'less severe' FDV exposure.

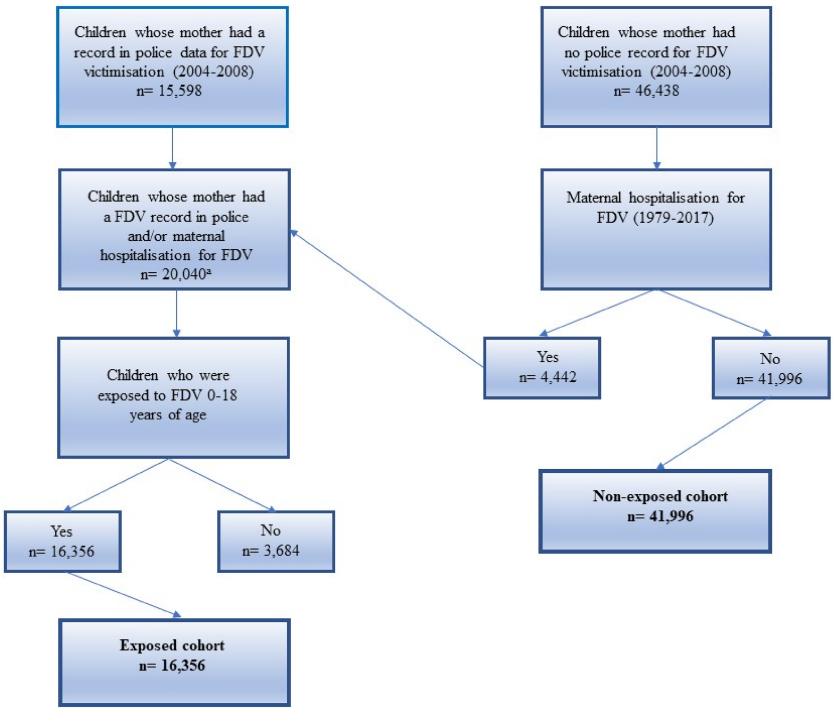

Figure 1. *Cohort flowchart. [a]Includes the 4442 children identified in the original cohort of children whose mother had no police record for FDV victimisation (2004–2008) but had a maternal hospitalisation for FDV.*

As there are inconsistencies in the existing literature, and Australian healthcare differs from the US as the population on which findings are mostly reported in the scientific literature, we sought to determine the association between FDV exposure and ED attendance in Australian children.

Methods

The present study comprised a retrospective cohort study using linked Police and Health administrative data to investigate ED attendance in children exposed to FDV.

Cohort identification

Mother/child relationship was identified using the Family Connections System of the Western Australia (WA) Data Linkage System.[17] FDV exposure was captured in two steps (Fig. 1). First, children born to mothers who were victims of FDV were identified using data from the WA Police Force Incident Management System (IMS). Western Australia Police Force data have a mandatory 'domestic flag' variable which has been recorded since the implementation of the Frontline IMS system in 2004. This variable draws on the type of behaviour alleged and the relationship between the parties. FDV captured in police data included mothers who had been the victim of FDV where the male was charged, and the perpetrator was flagged as having a domestic relationship with the victim. These children were individually matched 1:3 by the WA Data Linkage Branch, with a WA child from the general population whose mother had no FDV recorded in IMS 2004–2008, by sex, month of birth, socioeconomic status (SES) and Aboriginal status. Second, because of the hidden nature of FDV we interrogated the non-exposed cohort's maternal

TABLE 1. *Sociodemographic and clinical characteristics of children who were exposed to not exposed to family and domestic violence (FDV) in childhood*

Characteristic	Childhood DFV *N* (%)	No recorded childhood DFV *N* (%)
Aboriginal*		
Yes	10 205 (62.4)	20 919 (49.8)
No	6151 (37.6)	21 077 (50.2)
Sex		
Female	7984 (48.8)	20 537 (48.9)
Male	8372 (50.2)	21 459 (51.1)
Born prior to 37 weeks gestation*		
Yes	2324 (14.2)	4353 (10.4)
No	14 032 (85.8)	37 643 (89.6)
Mother age at birth*		
<20 years	4205 (25.7)	6122 (14.6)
20–29 years	9460 (57.8)	22 774 (54.2)
30–39 years	2591 (15.8)	12 478 (29.7)
40+ years	100 (0.6)	622 (1.5)
Fathers age at birth*		
<20 years	1313 (8.0)	2260 (5.4)
20–29 years	6755 (41.3)	16 754 (39.9)
30–39 years	3144 (19.2)	14 703 (35.0)
40+ years	590 (3.6)	2829 (6.7)
Age missing	4554 (27.8)	5450 (13.0)
Maternal marital status at birth*		
Married/*de facto*/widowed	10 732 (65.6)	33 300 (79.3)
Never married	5129 (31.4)	7920 (18.9)
Divorced/separated	369 (2.3)	564 (1.3)
Unknown/not stated	126 (0.8)	212 (0.5)
Socioeconomic status*		
1-Most disadvantaged	8966 (54.8)	20 569 (49.0)
2	3457 (21.1)	9549 (22.7)
3	2236 (13.7)	6251 (14.9)
4	1159 (7.1)	3857 (9.2)
5-Least disadvantaged	538 (3.3)	1760 (4.2)
Residential remoteness*		
Major cities	7079 (43.3)	20 261 (48.3)
Inner regional	1485 (9.1)	4520 (10.8)
Outer regional	2318 (14.2)	6725 (16.0)
Remote	2047 (12.5)	5190 (12.4)
Very remote	3427 (21.0)	5300 (12.6)

(*Continues*)

TABLE 1. *Continued*

Characteristic	Childhood DFV *N* (%)	No recorded childhood DFV *N* (%)
Mean age (years) of child at exposure to DFV	6.5 (SD 4.8)	
ED attendance		
Yes[a]	15 211 (93)	36 706 (87.4)
No	1145 (7)	5290 (12.6)

*Denotes that *P*-value is <0.0001 for all characteristics between exposed and non-exposed children. SD, standard deviation. [a]Includes the 4442 children identified in the original cohort of children whose mother had no police record for FDV victimisation (2004–2008) but had a maternal hospitalisation for FDV.

Hospital Morbidity Data Collection (HMDC) (1979–2016) records for FDV-related hospitalisations using International Classification of Disease codes identified in previous research.[4] The HMDC is a statutory data collection that captures all admission to all hospitals (public and private) in WA. This approach identified an additional 4442 children who had a mother with a FDV-related hospital admission but no corresponding police record and these children were then assigned a status of FDV exposed for the purpose of analysis. We then further refined the exposed cohort to those who were aged 0–18 years at the time of exposure. This approach identified 16 356 exposed children and a non-exposed comparison group of 41 996 children.

FDV exposure

To capture exposure to FDV we adopted the taxonomy of Holden[6] which describes 10 categories of exposure ranging from the child being actively involved in the FDV to the child being ostensibly unaware of it. Therefore, in our study, if a child's mother was identified as a victim of FDV in Police or Health records the child was considered exposed to FDV.

Outcome – ED attendance

The primary outcome was ED attendance, identified in the Emergency Department Data Collection (EDDC) data (1987–2016 inclusive). For exposed children ED attendance was only captured if it occurred post exposure to maternal FDV.

Covariates

Aboriginal children were identified by the WA Data Linkage Branch derived Aboriginal status flag.[18] Child disability was derived from the WA Register of Developmental Anomalies (WARDA) (2010–2016) and the Intellectual Disability Exploring Answers database (IDEA) (2010–2016). WARDA is a statutory register in WA that contains information on children diagnosed with a developmental anomaly before 6 years of age. The IDEA data set is a record of all WA children with an observable developmental delay prior to the age of 18 or an IQ below 70. The children contained in the IDEA data set are identified through the WA Government Department of Education, or if they are referred through the Disability Services Commission.

The child's sex, gestational age, mother's age, father's age and mother's marital status were extracted from the WA Midwives Notification System (MNS) dataset (1987–2010). Neighbourhood-level SES was determined by the Socio-Economic Indexes for Areas (SEIFA)[19] using MNS data. The SEIFA score is based on information about income, education, employment, occupation and housing; providing a measure of relative SES for the area where a person resides. Five levels of disadvantage were assigned to census collection districts (~250 households), ranging from 1 (high disadvantage) to 5 (low disadvantage). Residential remoteness was determined by the Accessibility/Remoteness Index of Australia (ARIA) which is based on distance of geographic locations from the nearest population centre, with criteria ranging from major cities to very remote.[20]

Data analysis

Descriptive statistics were performed for all cohort characteristics and outcome measures. Pearson's chi-square test was initially used to assess crude differences between exposed and non-exposed children for characteristic variables. Multivariate Cox proportional hazards modelling was used to estimate the association of FDV exposure with ED attendance. A counting process approach was utilised as there are multiple observations for patients having multiple events. Time intervals were defined for each presentation, with the event variable coded as 1 if there was an ED presentation and coded 0 to denote a censored observation. Censored observations included participants with no ED attendance before the end of follow up (end 2016) or when they turned 18 years of age, or those who died during follow-up. Coefficient estimates are provided with robust standard errors as adjusted and unadjusted hazard ratios (HR) with Wald 95%

TABLE 2. *Risk of ED contact*

Characteristic	Crude HR (95% CI)	Adjusted* HR (95% CI)
Sex		
Female	0.98 (0.96–1.00)	0.98 (0.97–1.00)
Male	Reference group	Reference group
Aboriginal status		
Yes	2.27 (2.23–2.31)	1.81 (1.77–1.85)
No	Reference group	Reference group
Socioeconomic status		
1-Most disadvantaged	1.85 (1.75–1.96)	1.24 (1.17–1.30)
2	1.56 (1.50–1.66)	1.31 (1.24–1.39)
3	1.49 (1.39–1.58)	1.26 (1.19–1.33)
4	1.24 (1.16–1.33)	1.13 (1.06–1.20)
5-Least disadvantaged	Reference group	Reference group
Residential remoteness		
1-Highly accessible	Reference group	Reference group
2	1.24 (1.20–1.28)	1.25 (1.21–1.28)
3	1.65 (1.60–1.69)	1.46 (1.42–1.50)
4	2.06 (2.00–2.12)	1.63 (1.58–1.67)
5-Very remote	2.22 (2.16–2.28)	1.59 (1.54–1.64)
Mother's marital status		
Married/defacto/widowed	Reference group	Reference group
Never married	1.23 (1.20–1.26)	1.01 (0.99–1.04)
Divorced/separated	1.30 (1.20–1.40)	1.27 (1.18–1.36)
Unknown	1.84 (1.66–2.04)	1.43 (1.30–1.58)
Gestation		
<37 weeks	1.30 (1.26–1.34)	1.16 (1.12–1.19)
37 weeks+	Reference group	Reference group
Mothers age group		
<20	1.52 (1.50–1.57)	1.03 (0.99–1.07)
20–29	1.20 (1.18–1.24)	1.00 (0.97–1.02)
30–39	Reference group	Reference group
40+	1.21 (1.10–1.33)	1.22 (1.11–1.33)
Father's age group		
<20	1.64 (1.58–1.70)	1.16 (1.11–1.21)
20–29	1.26 (1.23–1.29)	1.05 (1.02–1.08)
30–39	Reference group	Reference group
40+	1.08 (1.03–1.14)	1.04 (1.00–1.09)
Missing	1.66 (1.62–1.71)	1.04 (1.01–1.08)
Child disability		
Yes	1.20 (1.16–1.25)	1.18 (1.14–1.22)
No	Reference group	Reference group

(*Continues*)

TABLE 2. *Continued*

Characteristic	Crude HR (95% CI)	Adjusted* HR (95% CI)
FDV exposure		
Yes	1.35 (1.32–1.38)	1.21 (1.18–1.23)
No	Reference group	Reference group

*Adjusted for all characteristic variables in table.

confidence intervals (CI). Kaplan–Meier survivor function estimates together with log-rank tests confirmed the proportional hazards assumption held for all categorical covariates. As Aboriginal children have higher rates of FDV exposure and poorer health than non-Aboriginal children[11,21] we stratified results by Aboriginal status. All analyses were undertaken using SAS® statistical software V9.4.

Ethics approval for the present study was obtained from the WA Department of Health Human Research Ethics Committee (#2016/60), the WA Aboriginal Health Ethics Committee (#756), and the University of Western Australia Human Research Ethics Committee (#RA/4/1/8867).

Results

Table 1 displays the characteristics of the cohort stratified by exposure to FDV. Compared to children not exposed to FDV, exposed children had a greater proportion of being Aboriginal (62.4% *vs* 49.8%, respectively, $P < 0.001$), residing in a very remote location (21.0% *vs* 12.6%, $P < 0.001$), being born to a teen mother (25.7 *vs* 14.6%, $P < 0.001$) and being premature (14.2% *vs* 10.4%, $P < 0.001$).

Table 2 shows the unadjusted and adjusted risk of ED contact by sociodemographic and clinical characteristic. Children exposed to FDV had a 35% (HR = 1.35, 95% CI: 1.32–1.38) increased risk of ED attendance than non-exposed children. Following model adjustment for sociodemographic and clinical characteristics a statistically significant increased risk of 21% (HR = 1.21, 95% CI: 1.18–1.23) was observed in FDV-exposed children compared to their non-exposed counterparts.

When stratified by Aboriginal status, an increased risk for ED attendance was observed in both Aboriginal and non-Aboriginal children exposed to FDV, when compared to non-exposed counterparts (aHR = 1.13, 95% CI: 1.11–1.16; aHR = 1.42, 95% CI: 1.37–1.47, respectively) (Table 3).

Discussion

Our results demonstrate an association between FDV exposure and an increased risk of ED attendance, providing a greater understanding of health service use of Australian children exposed to FDV.

Following adjustment for sociodemographic and clinical factors we found a 21% increased risk of ED attendance in children exposed to FDV compared to non-exposed children. Rivara and colleagues[15] previously reported a 55% increased likelihood of ED attendance in US children exposed to FDV compared to non-exposed children. The different strength of association with our findings may be partially explained by the way FDV was identified in each study. Rivara and colleagues[15] identified FDV *via* telephone interviews of mothers involved in a health service, with physical and non-physical abuse ascertained. In contrast, we identified FDV through routinely collected police and hospital records which was predominantly physical. Only 9% of women seek support from police for FDV,[9] and of those that do seek support not all will result in a male being charged. Additionally, most women subjected to FDV will not be hospitalised for the abuse. Therefore, it is likely that our 'non-exposed' cohort contained children who were exposed, biasing our results towards the null. However, despite the differing approaches, both studies reported an association between FDV exposure and an increase in ED attendance.

The reason for the increased risk of ED attendance observed in FDV exposed children may be multifactorial. Previous research has suggested that children may use ED and not a primary care physician to reduce the detection of exposure to FDV.[22] Many mothers do not disclose FDV as they are fearful of child protection service involvement and removal of children from their care.[23] Mothers, especially in some ethnic groups, historically have been blamed for not maintaining safety for their children, but this is changing with a growing focus on perpetrator accountability including the development of policies and practice in child protection on how to respond to FDV.[24] Additionally, children exposed to FDV are known to have poorer health than non-exposed children[5,12] and more likely to be hospitalised in general.[5] It could be that the poorer health experienced by exposed children increases their risk of ED attendance. Further research is required to investigate the child's pathway to the ED, to determine if previous primary care interactions indicate poorer health overall or whether there is a lack of primary care interactions which may indicate poorer healthcare management.

TABLE 3. *Risk of ED contact by Aboriginal status*

Characteristic	Aboriginal children Adjusted* HR (95% CI)	Non-Aboriginal children Adjusted* HR (95% CI)
Sex		
Female	1.01 (0.99–1.03)	0.93 (0.90–0.95)
Male	Reference group	Reference group
Socioeconomic status		
1-Most disadvantaged	1.07 (0.99–1.16)	1.48 (1.38–1.59)
2	1.20 (1.10–1.30)	1.36 (1.27–1.46)
3	1.17 (1.07–1.27)	1.31 (1.21–1.40)
4	1.07 (0.97–1.17)	1.17 (1.08–1.26)
5-Least disadvantaged	Reference group	Reference group
Residential remoteness		
1-Highly accessible	Reference group	Reference group
2	1.19 (1.13–1.24)	1.28 (1.23–1.33)
3	1.43 (1.39–1.48)	1.49 (1.43–1.56)
4	1.60 (1.55–1.65)	1.62 (1.53–1.72)
5-Very remote	1.60 (1.55–1.66)	1.41 (1.26–1.59)
Mother's marital status		
Married/defacto/widowed	Reference group	Reference group
Never married	0.99 (0.96–1.01)	1.11 (1.06–1.17)
Divorced/separated	1.24 (1.14–1.35)	1.22 (1.08–1.39)
Unknown	1.42 (1.28–1.58)	1.34 (1.03–1.74)
Gestation		
<37 weeks	1.15 (1.11–1.19)	1.16 (1.10–1.22)
37 weeks+	Reference group	Reference group
Mothers age group		
<20	0.98 (0.93–1.02)	1.16 (1.08–1.23)
20–29	0.95 (0.92–0.99)	1.04 (1.00–1.08)
30–39	Reference group	Reference group
40+	1.23 (1.07–1.41)	1.19 (1.08–1.32)
Father's age group		
<20	1.13 (1.07–1.18)	1.19 (1.08–1.30)
20–29	1.02 (0.98–1.06)	1.05 (1.01–1.09)
30–39	Reference group	Reference group
40+	1.02 (0.95–1.09)	1.07 (1.00–1.13)
Missing	1.01 (0.97–1.05)	1.15 (1.07–1.24)
Child disability		
Yes	1.13 (1.08–1.18)	1.31 (1.24–1.38)
No	Reference group	Reference group
FDV exposure		
Yes	1.13 (1.11–1.16)	1.42 (1.37–1.47)
No	Reference group	Reference group

*Adjusted for all characteristic variables in table.

Aboriginal children

Aboriginal children were overrepresented in our cohort. Our exposed cohort comprised of 62% Aboriginal children compared to 7% observed in the WA child population.[25] This over representation may be explained by the higher rates of FDV in Aboriginal communities.[11] The reasons underpinning this include the multiple disadvantages and systemic racism faced by Aboriginal peoples because of the colonisation of their lands[26–28] and should not be taken as an indicator of racial determinant.

Following adjustment, a 13% increased risk of ED attendance was seen in FDV-exposed Aboriginal children compared to their non-exposed peers. This is lower than the 42% increased risk observed in non-Aboriginal children exposed to FDV, compared to their non-exposed peers. The differences observed may, in part, be explained by the differences in ED use between Aboriginal and non-Aboriginal people. Aboriginal patients are overrepresented in Australian EDs[29] with Aboriginal children, living in rural settings, attending ED twice as often as non-Aboriginal children.[30] Furthermore, it has been suggested that Aboriginal people attending ED have more complex health needs and are more unwell than non-Aboriginal Australians.[31]

Our study had a number of strengths; the use of linked administrative data provided an avenue to identify a hard-to-reach population and a large sample size. However, our findings should be interpreted in light of a number of limitations. We were only able to capture FDV in hospital and police data, where a mother was hospitalised, or a mother was a victim of FDV resulting in a male being charged for the offence. Therefore, our data are an underestimation of the true level of FDV in the population. Additionally, our data are limited in the spectrum of FDV behaviours, being heavily weighted to physical assaults. Population of diagnosis in EDDC is not mandatory, 69% of EDDC records used in the present study had the diagnosis missing; we were therefore unable to investigate reason for

service use. In our cohort 93% of exposed children and 87% of non-exposed children had attended ED. While prevalence rates of childhood ED attendance are not available for Australia, the proportion of attendance seems high. This may be, in part, explained by the over representation of children from low socioeconomic backgrounds in our cohort,[32] previous research has highlighted that children and young people from low socioeconomic status are more likely to present to the ED with non-urgent issues.[33]

Clinician's knowledge of FDV

Clinicians need to have knowledge of FDV and the potential impact it may have on children's health. At present DFV training is not part of the mandatory suite of training across Western Australian health services. Clinicians need to be able to appropriately and safely respond to children exposed to DFV[34]; these skills need to be taught to clinicians during their training and offered as ongoing professional development to enable clinicians to stay abreast of contemporary developments.

Conclusion

Exposure to FDV is associated with an increased risk of ED attendance in childhood. The findings add to the limited literature providing further support that FDV exposure impacts children's health service utilisation and further supports that children's exposure to FDV as an area of public health concern. Attendance at the ED presents an opportunity for intervention. It is imperative that ED staff are appropriately trained on how to safely enquire about FDV and are aware of the support services available. The findings provide an advance in the literature with respect to Aboriginal children exposed to FDV with differences in the risk of ED attendance apparent between Aboriginal and non-Aboriginal children. Future research should explore the pathway to the ED for children exposed to FDV. Understanding the pathway is crucial for the development and implementation of appropriate interventions to support children exposed to FDV.

Acknowledgements

The authors wish to thank the Linkage and Client Services Teams at the Western Australian Data Linkage Branch, as well as the Custodians from the following Data Collections: Emergency Department Data Collection, Hospital Morbidity Data Collection, Western Australia Police Force Incident Management System, WA Registry of Births, Deaths and Marriages, Midwives Notification System, Intellectually Disabled Exploring Answers (IDEAS) and WA Register of Developmental Anomalies. This research was supported by a Stan Perron Charitable Foundation Grant and an Australian Research Council Linkage Project Grant (LP190100968).

Competing interests

None declared.

Data availability statement

The datasets generated and/or analysed during the current study are not publicly available because of the terms of the ethics approval granted by the Department of Health Western Australia Human Research Ethics Committee and data disclosure policies of the Data Providers. The datasets may be available from the Western Australia Data Linkage Branch at dataservices@health.wa.gov.au and subject to the approval from the Department of Health Western Australia Human Research Ethics Committee and relevant data custodians.

References

1. Council of Australian Governments. *National Plan to Reduce Violence Against Women and Their Children*. Canberra: COAG, 2011 Available from URL: https://www.dss.gov.au/women/programs-services/reducing-violence/the-national-plan-to-reduce-violence-against-women-and-their-children-2010-2022
2. European Institute for Gender Inequality. Gender-based violence. 2020. Available from URL: https://eige.europa.eu/gender-based-violence
3. World Health Organisation. *Violence Against Women: Intimate Partner and Sexual Violence Against Women, Fact Sheet N°239*. Geneva: World Health Organisation, 2014.
4. Orr C, Fisher C, Sims S, Preen D, Glauert R, O'Donnell M. Hospitalisations for maternal assault are associated with increased risk of child protection involvement. *Child Abuse Negl.* 2019; **95**: 104014.
5. Orr C, Fisher CM, Preen DB, Glauert RA, O'Donnell M. Exposure to family and domestic violence is associated with increased childhood hospitalisations. *PLoS One* 2020; **15**: e0237251.
6. Holden GW. Children exposed to domestic violence and child abuse: terminology and taxonomy. *Clin. Child Fam. Psychol. Rev.* 2003; **6**: 151–60.
7. Australian Institute of Health and Welfare. Family, domestic and sexual violence in Australia, 2018. 2018. Available from URL: https://www.aihw.gov.au/reports/domestic-violence/family-domestic-sexual-violence-in-australia-2018/contents/table-of-contents
8. Phillips J, Vandenbroek P. Domestic and family violence in Australia: an overview of the issues. In: *Parliamentary Library Research Paper*. Canberra: Parliament of Australia, 2014.
9. Australian Bureau of Statistics. *Personal Safety, Australia, 2016*. Canberra: Australian Bureau of Statistics, 2017 Available from URL: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4906.0~2016~Main%20Features~Demographics%20of%20those%20who%20experienced%20violence%20in%20the%20last%2012%20months~8
10. Finkelhor D, Turner H, Ormrod R, Hamby S. Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics* 2009; **124**: 1411–23. https://doi.org/10.1542/peds.2009-0467
11. ABS. National Aboriginal and Torres Strait Islander Social Survey 2014–15. *ABS* cat. no. 4714.0.

2016. Available from URL: https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4714.02014-15?OpenDocument
12. Orr C, Fisher C, O'Donnell M, Glauert R, Preen DB. Epilepsy in children exposed to family and domestic violence in the first 5 years of life. *J. Paediatr. Child Health* 2022; **58**: 2183–9. https://doi.org/10.1111/jpc.16179
13. Kuhlman KR, Howell KH, Graham-Bermann SA. Physical health in preschool children exposed to intimate partner violence. *J. Fam. Violence* 2012; **27**: 499–510.
14. Casanueva C, Foshee VA, Barth RP. Intimate partner violence as a risk factor for children's use of the emergency room and injuries. *Child. Youth Serv. Rev.* 2005; **27**: 1223–42.
15. Rivara FP, Anderson ML, Fishman P *et al*. Healthcare utilization and costs for women with a history of intimate partner violence. *Am. J. Prev. Med.* 2007; **32**: 89–96.
16. Bair-Merritt MH, Feudtner C, Localio AR, Feinstein JA, Rubin D, Holmes WC. Health care use of children whose female caregivers have intimate partner violence histories. *Arch. Pediatr. Adolesc. Med.* 2008; **162**: 134–9. https://doi.org/10.1001/archpediatrics.2007.32
17. Government of Western Australia Department of Health. Family connections. 2022. Available from URL: https://www.datalinkage-wa.org.au/dlb-services/family-connections/
18. Christensen D, Davis G, Draper G *et al*. Evidence for the use of an algorithm in resolving inconsistent and missing indigenous status in administrative data collections. *Aust. J. Soc. Issues* 2014; **49**: 423–43.
19. Australian Bureau of Statistics. Census of population and housing: Socio-economic indexes for areas (SEIFA), Australia, 2016. ABS cat. No. 2033.0.55.001. 2018. Available from URL: http://www.abs.gov.au
20. Australian Bureau of Statistics. 2006 Remoteness area from 2006 collection districts correspondence. 2011. Available from URL: https://www.abs.gov.au/ausstats/abs@.nsf/Products/1216.0.15.003~2006~Main+Features~2006+RA+from+2006+CD+Correspondence?OpenDocument
21. Commonwealth of Australia. *Department of the Prime Minister and Cabinet. National Agreement on Closing the Gap*. Canberra: Commonwealth of Australia, 2021.
22. Onyskiw JE. Health and use of health services of children exposed to violence in their families. *Can. J. Public Health* 2002; **93**: 416–20.
23. Wilson M, Jones J, Butler T *et al*. Violence in the lives of incarcerated aboriginal mothers in Western Australia. *SAGE Open* 2017; **7**: 215824401668681.
24. Government of Western Australia. Perpetrator Accountability in Child Protection Practice: A resource for child protection workers about engaging and responding to men who perpetrate family and domestic violence. 2013. Available from URL: https://www.dcp.wa.gov.au/CrisisAndEmergency/FDV/Documents/Perpetrator%20Accountability%20in%20Child%20Protection%20Practice.pdf
25. Australian Bureau of Statistics. Estimates of Aboriginal and Torres Strait Islander Australians. 2018. Available from URL: https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3238.0.55.001June%202016?OpenDocument
26. Australian Institute of Family Studies. Child protection and Aboriginal and Torres Strait Islander children. 2020. Available from URL: https://aifs.gov.au/cfca/sites/default/files/publication-documents/2001_child_protection_and_atsi_children.pdf
27. Aboriginal and Torres Strait Islander Social Justice Commissioner. Social justice and native title report 2015. 2015. Available from URL: https://www.humanrights.gov.au/our-work/aboriginal-and-torres-strait-islander-social-justice/publications/social-justice-and-1
28. Zubrick S, Silburn S, Lawrence D *et al*. The western Australian Aboriginal child health survey: Forced separation from natural family, forced relocation from traditional country or homeland, and social and emotional wellbeing of aboriginal children and young people. 2005. Available from URL: https://research-repository.uwa.edu.au/en/publications/the-western-australian-aboriginal-child-health-survey-the-social-
29. Lim JC, Harrison G, Raos M, Moore K. Characteristics of aboriginal and Torres Strait islander peoples attending Australian emergency departments. *Emerg. Med. Australas.* 2021; **33**: 672–8.
30. Costa N, Sullivan M, Walker R, Robinson KM. Emergency department presentations of Victorian Aboriginal and Torres Strait Islander People. *Health Inf. Manag. J.* 2008; **37**: 15–25. https://doi.org/10.1177/183335830803700303
31. Thomas DP, Anderson IP, Kelaher MA. Accessibility and quality of care received in emergency departments by Aboriginal and Torres Strait Islander people. *Aust. Health Rev.* 2008; **32**: 648–54.
32. Australian Bureau of Statistics. Census of Population and Housing: Reflecting Australia – Stories from the Census. 2016. Available from URL: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0~2016~Main%20Features~Socio-Economic%20Advantage%20and%20Disadvantage~123
33. Unwin M, Crisp E, Stankovich J, McCann D, Kinsman L. Socioeconomic disadvantage as a driver of non-urgent emergency department presentations: a retrospective data analysis. *PLoS One* 2020; **15**: e0231429.
34. McTavish JR, MacGregor JCD, Wathen CN, MacMillan HL. Children's exposure to intimate partner violence: an overview. *Int. Rev. Psychiatry* 2016; **28**: 504–18.