

Multiple impacts of maternal alcohol-use disorder on child outcomes: a population cohort record linkage study in Western Australia

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Disclaimer

- We acknowledge the assistance of the Developmental Pathways Project and the Industry Partners whose data are used in this project (WA Department of Health, WA Department of Education, WA Department of Communities (formerly WA Department of Child Protection and Family Services, WA Department of Justice (formerly WA Department of Attorney General and Department of Corrective Services)). Any material published or made publicly available by the researchers cannot be considered as either endorsed by the WA Department of Justice or an expression of the policies or views of the WA Department of Justice. Any errors of omission or commission are the responsibility of the researchers.






Effects of exposure to maternal alcohol use

- Biological – prenatal exposure
and/or
- Social/environmental factors
- Many studies on individual outcomes, limited information on multiple simultaneous effects





Study aims and design

- **Aim:** To investigate the relationship between maternal alcohol-use disorder, and multiple biological and social child outcomes - birth outcomes, child protection, justice contact, and academic outcomes.
 - **Design:** Population cohort study using routinely linked administrative health, education, child protection and justice data from Western Australia
 - **Outcomes** : small for gestation age, preterm birth, birth defects, FASD, cerebral palsy, intellectual disability, academic outcomes, justice system contact, child protection contact.
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Study population

- Births 1983-2007 in WA
- **Exposed cohort:** women with a record of an alcohol use diagnosis and their birth(s)–
10,211 women; 23,880 children
- **Comparison cohort:** frequency-matched random sample of women without an alcohol use diagnosis and their births – **37,688 women; 61,325 children**
- Frequency matched on child and maternal year of birth, maternal Aboriginal status

Ethics approval from: PMH HREC; WA Dept Health HREC; WA Aboriginal Health Ethics Committee





Maternal alcohol-use disorder

Identified from hospital discharge data, mental health records and drug and alcohol services records.

The diagnosis could be:

- Pre-pregnancy; and/or
- During pregnancy; and/or
- Post-pregnancy

Analyses by:

- Exposure at any time; and
- Exposure during pregnancy



Outcomes

Outcomes were identified by linkage to:

- Midwives data
- WA Register of Developmental Anomalies
- IDEA - Intellectual Disability Database
- WA Department of Education
- Department of Justice
- Department of Communities

Selected outcomes

	Non-Aboriginal		Aboriginal	
	Comparison	Exposed	Comparison	Exposed
Preterm birth (<37wk)	7.2%	11.0%	12.5%	17.5%
Child protection*	2.4%	15.3%	8.9%	28.9%
School**	10.3%	15.8%	32.0%	36.8%
Justice***	2.3%	6.2%	13.6%	22.4%

* Substantiated maltreatment or out-of-home-care

** Below benchmark on any testing domain using WALNA (1999-2007) or NAPLAN data (2008+)

*** Community or custodial record

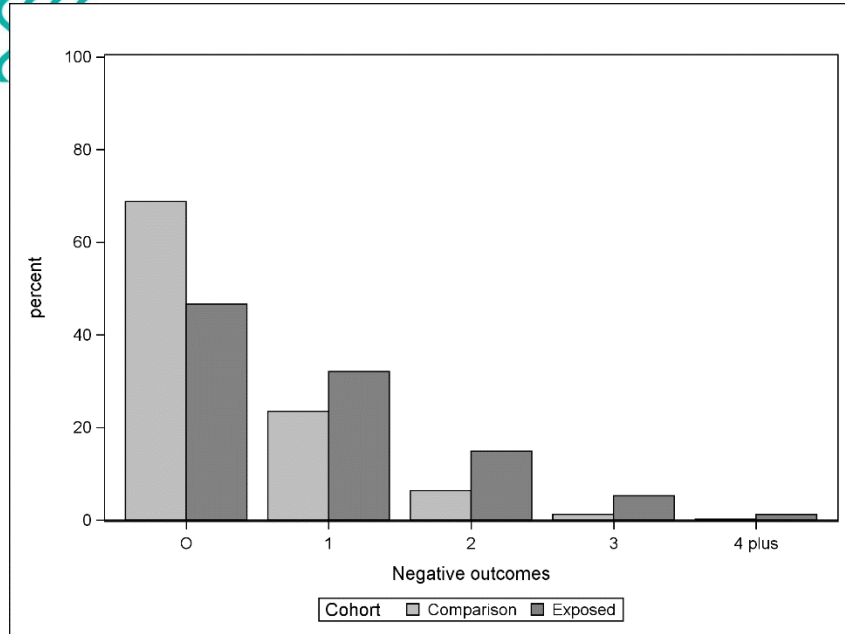


Findings

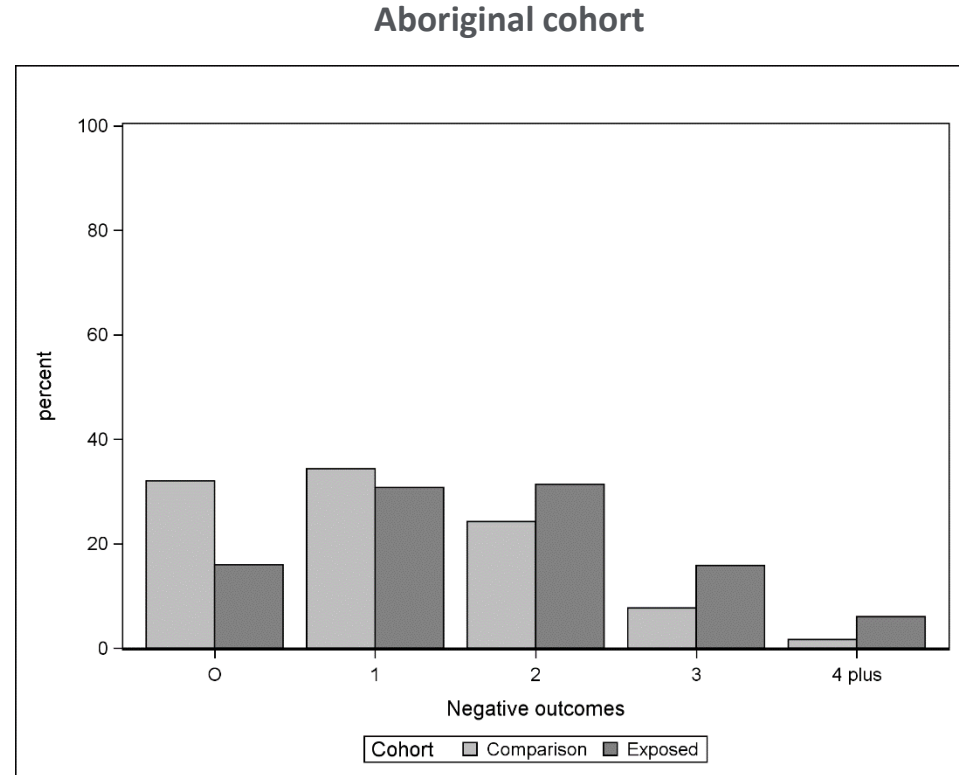
- In the *exposed cohort*, at least one negative outcome was found in:
 - 55% children of non-Aboriginal women
 - 84% children of Aboriginal women
- In the *comparison cohort*, at least one negative outcome was found in:
 - 31% children of non-Aboriginal women
 - 68% children of Aboriginal women



Number of negative outcomes



Non-Aboriginal cohort



Aboriginal cohort



Findings

Risk of **any negative outcome** for *exposed (at any time)* vs *comparison* cohort:

- OR = 2.67 (CI 2.56-2.78) non-Aboriginal
- OR = 2.67 (CI 2.50 – 2.85) Aboriginal

Adjusted for matching variables and marital status, maternal mental health record, maternal illicit drug use, SES, child sex and parity (and also for health region for Aboriginal analyses)





Findings

- Risk of **any negative outcome** for *exposed (during pregnancy) vs comparison* cohort:
 - OR = 4.65 (CI 3.87-5.59) non-Aboriginal
 - OR = 5.18 (CI 4.10-6.55) Aboriginal





Findings

- Risk of **three or more** negative outcomes for *exposed (during pregnancy) vs comparison* cohort:
 - OR = 9.62 (CI 6.78-13.64) non-Aboriginal
 - OR = 14.12 (CI 10.67-18.70) Aboriginal





Strengths and limitations

- Multiple biological and social/environmental outcomes examined
- Long period of followup
- Administrative data, record linkage
- Alcohol use diagnoses, not simply use
- Exposure misclassification



Conclusions

- Negative outcomes experienced by majority of exposed children
- Biological and social/environmental effects
- Findings highlight importance of co-ordinated inter-agency interventions to support exposed women and their children across life, in addition to universal prevention measures

