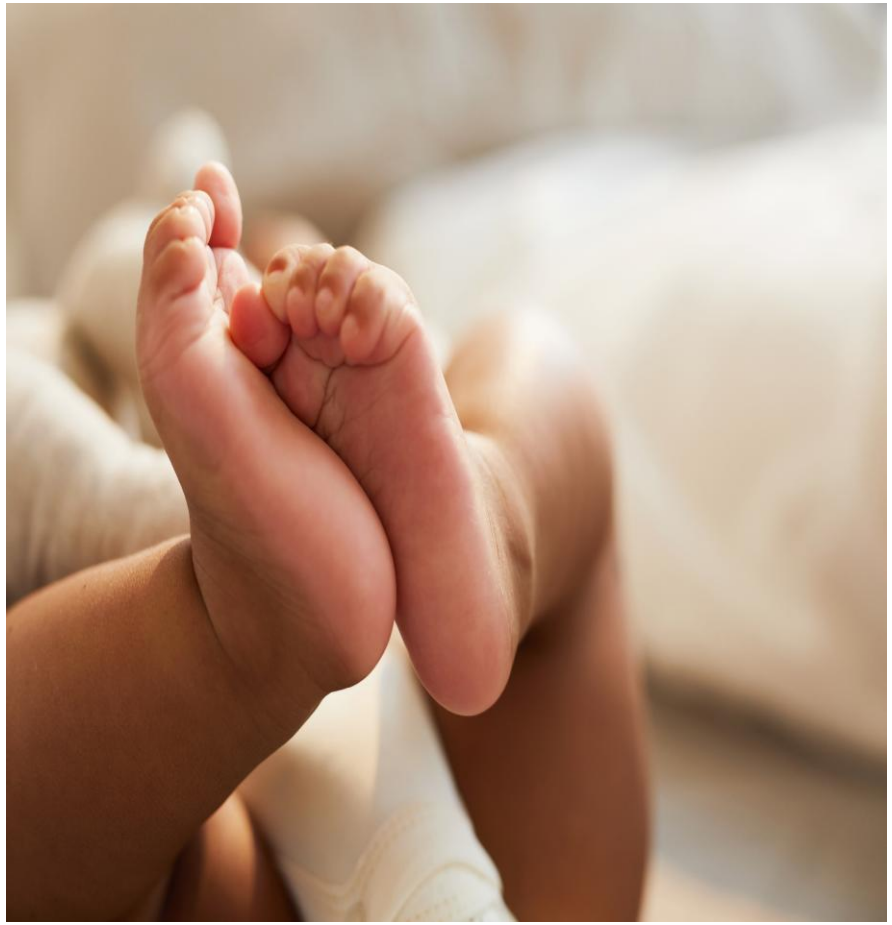

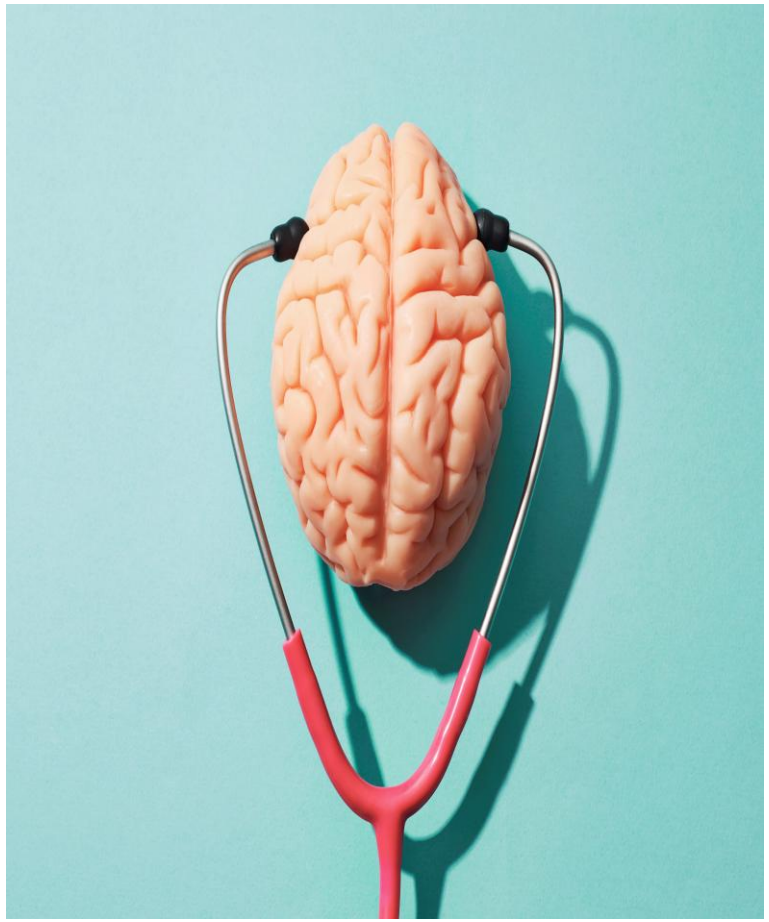

Intersection of mental illness, victimisation, and preterm birth: Use of an Australian birth cohort data

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Contributors

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Preterm Birth (PTB): An overview

- **Definition**: Birth occurring before 37 completed weeks of gestation (WHO, 2023)

- **Impact**: A leading cause of death among children and a major contributor to lifelong illness, disability and developmental delays (WHO, 2023).

- **Global concerns**: Despite advances in health care, no measurable change in PTB rates over the past decade (Ohuma et al., 2023).

- **National data**: In Australia, around 1 in 10 births are preterm (Australian Preterm Birth Prevention Alliance, 2023).

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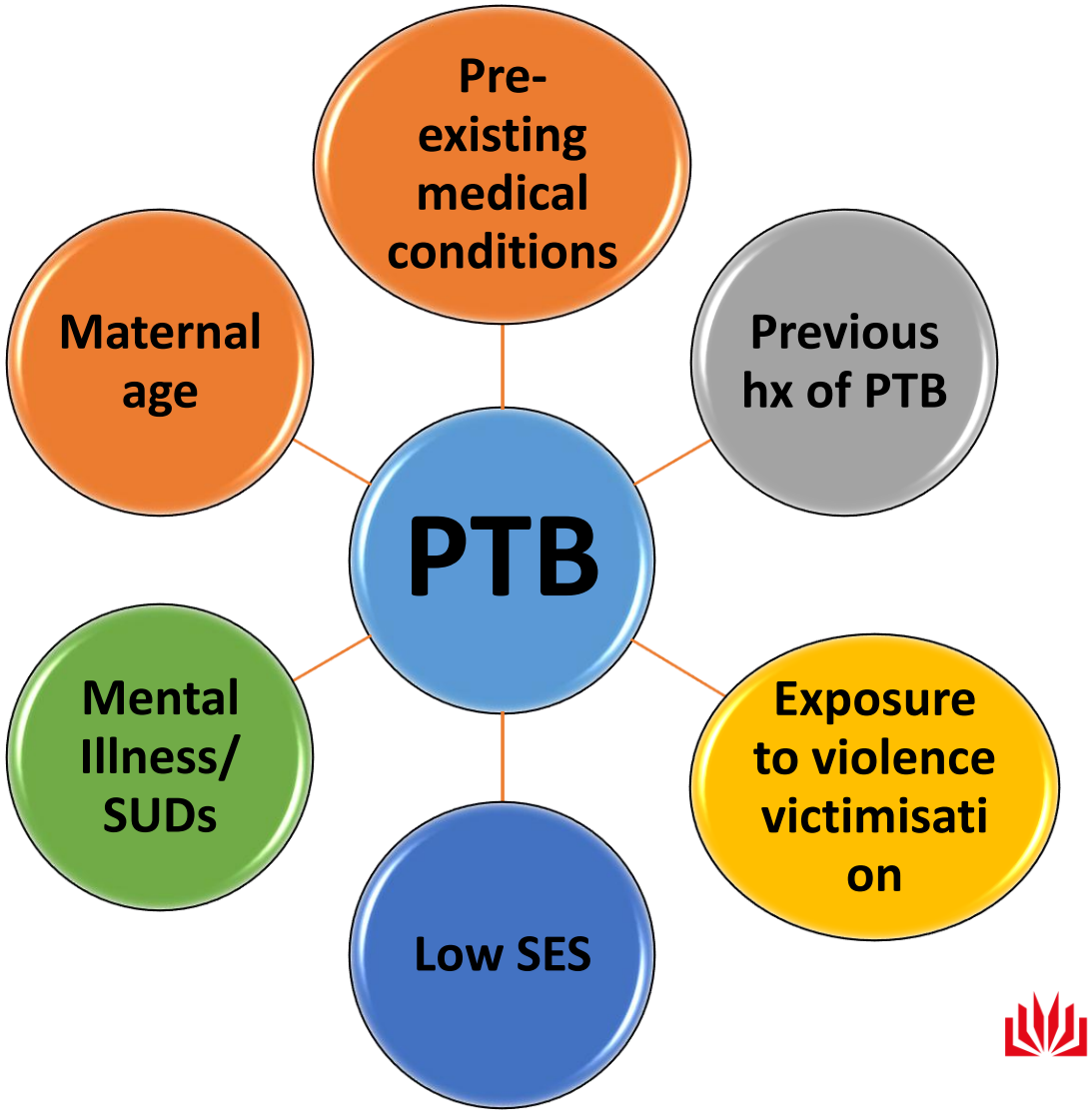
Risk factors



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What are existing knowledge gaps?

- Interconnected pathways between mental illness, violence, and reproductive outcomes remain underexplored.
- Most studies either focus on a few stressful experiences, particularly child sexual abuse or violence during pregnancy (Witt et al., 2014) or use a cumulative score only.
- Few studies examine the overlapping effects of various stressful life experiences on PTB.

Ref: Cammack et al., 2019; Guo, 2023

What are existing methodological gaps?

- Predominance of studies conducted in the US, limiting generalisability to other populations and contexts.
- Most studies rely on self-reported measures, which are often subject to recall bias and social desirability.
- Use of cross-sectional designs or no comparison groups.
- No control for confounding factors.

Ref: Cammack et al., 2019; Sapkota et al., 2025; Selk et al., 2016

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Research Questions

- What is the prevalence of different stressful life experiences (violence, mental illness, SUDs) and PTB among women?
- To what extent do different types of stressful life experiences (SLE) overlap?
- How do individual types and combinations of stressful life experiences influence the risk of PTB?

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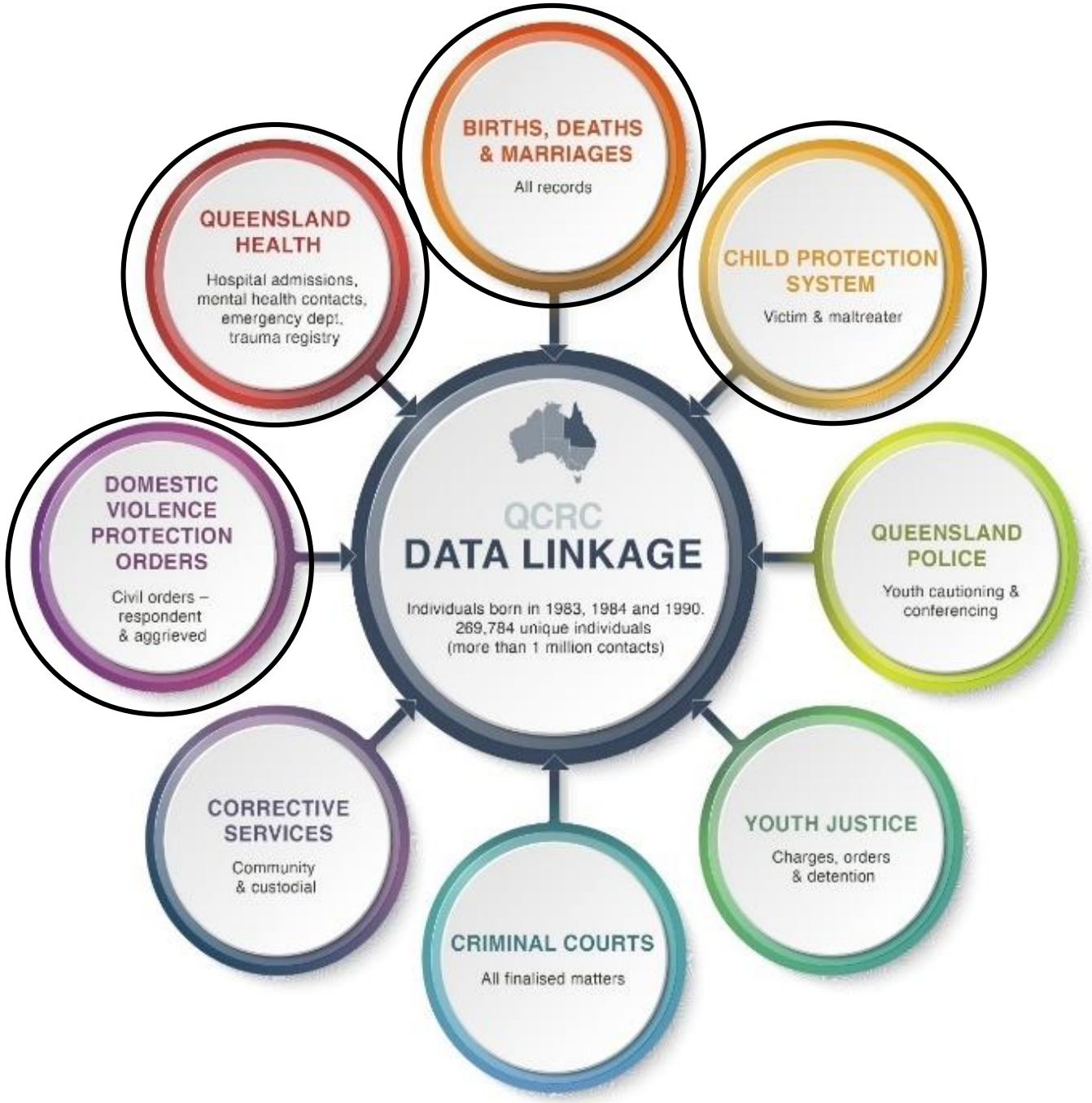
Data sources

- 1990 birth cohort (QLD born)
  - 22,039 females (registered as mothers via birth records = 4,150)



Measures

Independent variables

- Childhood violence
- Adolescent/Adulthood violence
- Mental illness
- Substance use disorders
- Total score of events
- Overlap of these events

Covariates

- Aboriginal and/or Torres Strait Islander Identity
- Socio-economic status
- Teenage birth

Outcome variables

- Preterm birth

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Results

Among 4,150 mothers (18.8% of the cohort), 11.1% (n = 460) had at least one PTB.

Approximately, 30% (n = 1,262) had experienced at least one stressful life experiences.

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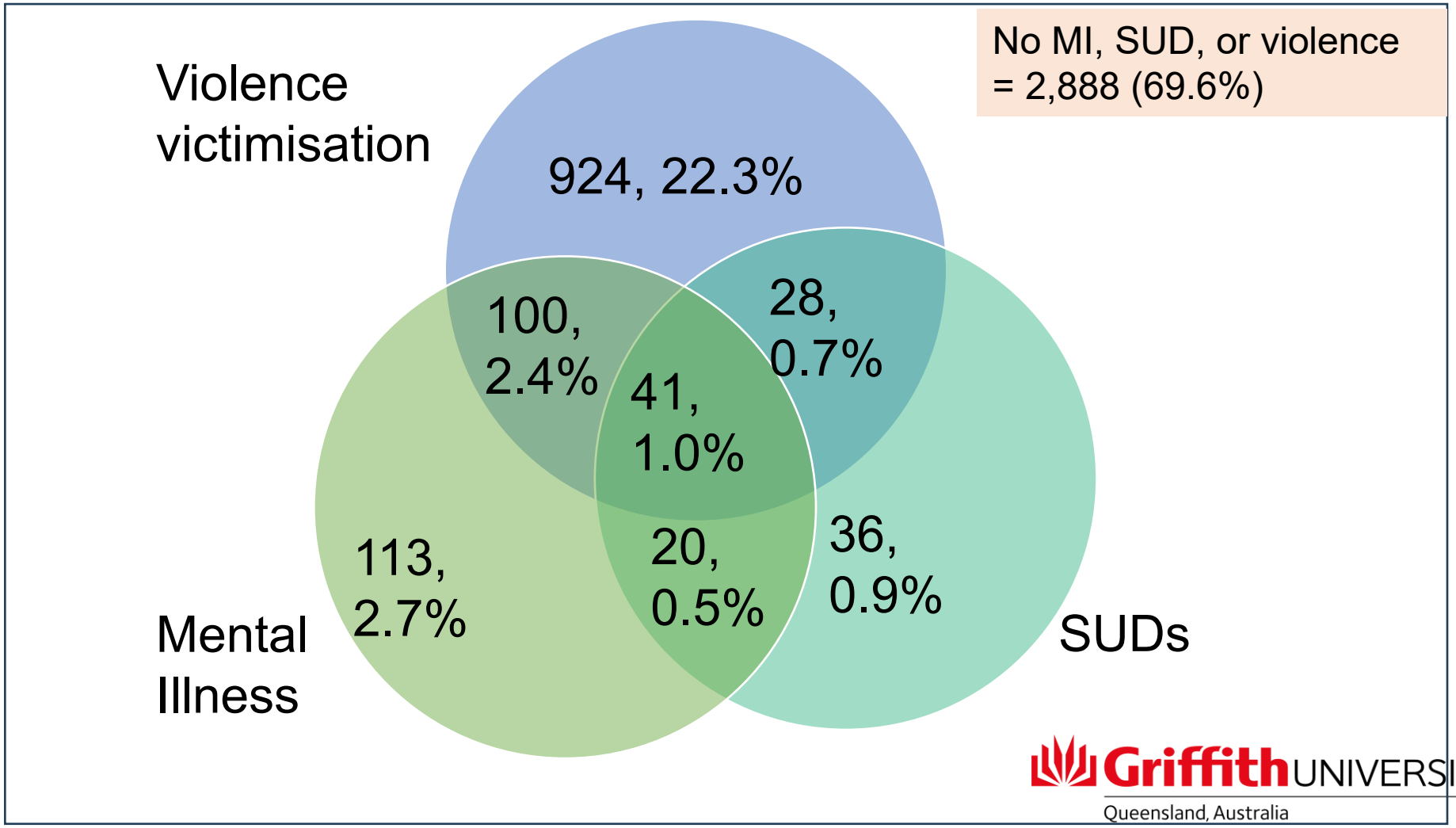
Overlap of Violence, MI, and SUD



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Sociodemographic characteristics and PTB

		Total	Preterm birth		Group differences		OR (95% CI)
Variables		n = 4,150; 100%	Yes (n = 460; 11.1%)	No (n = 3,690; 88.9%)	χ^2	Φ_c	
A&TSI identity	Yes	806 (19.4)	137 (17.0)	669 (83.0)	35.49	0.09***	1.92 (1.54, 2.38)
	No	3,344 (80.6)	323 (9.7)	3,021 (90.3)			
Low SES (n = 4,115)	Yes	1,453 (35.3)	173 (11.9)	1,280 (88.1)	3.61	0.03	0.82 (0.67, 1.01)
	No	2,662 (64.7)	266 (10.0)	2,396 (90.0)			
Teenage birth	Yes	1,758 (42.4)	255 (14.5)	1,503 (85.5)	36.21	0.09***	1.81 (1.49, 2.20)
	No	2,392 (57.6)	205 (8.6)	2,187 (91.4)			

A&TSI: Aboriginal & Torres Strait Islander; SES: Socioeconomic Status

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Associations between SLEs and PTB

Variables	Total (n = 4,150; 100%)	Preterm birth		Group differences		UOR (95% CI)
		Yes (n = 460; 11.1%)	No (n = 3,690; 88.9%)	χ^2/ U-statistic	Φ_c	
Childhood violence	846 (20.4)	122 (26.5)	724 (19.6)	12.002	0.05***	1.48 (1.18, 1.85)
Adolescent/ adulthood violence	247 (6.0)	49 (10.7)	198 (5.4)	20.419	0.07***	2.10 (1.51, 2.92)
Any victimisation before index birth	1,093 (26.3)	171 (37.2)	922 (25.0)	31.31	0.09***	1.78 (1.45, 2.18)
Diagnosis of any MI	274 (6.6)	28 (6.1)	246 (6.7)	0.223	0.01	0.91 (0.61, 1.36)
Diagnosis of SUDs	125 (3.0)	22 (4.8)	103 (2.8)	5.552	0.04*	1.75 (1.09, 2.80)
Diagnosis of MI or SUDs	505 (12.2)	57 (12.4)	448 (12.1)	0.024	0.002	1.02 (0.76, 1.37)

MI: Mental Illness; SUDs: Substance Use Disorders; UOR: Unadjusted Odds Ratio

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Stressful life experiences and PTB

Variables	B	S.E.	Wald χ^2	AOR (95% CI)	B	S.E.	Wald χ^2	AOR (95% CI)
Childhood violence	0.48***	0.12	17.05	1.61 (1.29, 2.03)	0.32**	0.12	6.95	1.38 (1.09, 1.75)
Adolescent/ Adulthood violence	0.88***	0.17	26.37	2.41 (1.72, 3.38)	0.82***	0.18	21.06	2.26 (1.60, 3.20)
MI	-0.25	0.22	1.30	0.78 (0.51, 1.20)	-0.21	0.22	0.87	0.81 (0.52, 1.26)
SUDs	0.71**	0.26	7.70	2.04 (1.23, 3.38)	0.73**	0.26	7.79	2.07 (1.24, 3.46)
A&TSI					0.45***	0.12	14.38	1.56 (1.24, 1.97)
Teenage birth					0.57***	0.11	29.04	1.76 (1.43, 2.17)
Low SES					0.08	0.11	0.63	1.09 (0.88, 1.34)

Model 1 χ^2 = (4, N = 4,150) = 40.48, $p < 0.001$; Nagelkerke $R^2 = 0.02$

Model 2 χ^2 = (7, N = 4,115) = 93.46, $p < 0.001$; Nagelkerke $R^2 = 0.05$

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Cumulative SLE score and PTB

Variables	B	S.E.	Wald χ^2	AOR (95% CI)	B	S.E.	Wald χ^2	AOR (95% CI)
Total types of events experienced	0.41***	0.07	31.98	1.50 (1.30, 1.73)	0.34***	0.08	20.07	1.40 (1.21, 1.62)
A&TSI					0.46***	0.12	15.22	1.58 (1.26, 1.99)
Teenage birth					0.55***	0.10	27.90	1.74 (1.42, 2.13)
Low SES					0.10	0.11	0.92	1.11 (0.90, 1.36)
Model 1 χ^2 = (1, N = 4,150) = 29.52, $p < 0.001$; Nagelkerke R^2 = 0.01					Model 2 χ^2 = (4, N = 4,115) = 83.96, $p < 0.001$; Nagelkerke R^2 = 0.04			

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Co-occurrence of events and PTB

Variables	B	S.E.	Wald χ^2	AOR (95% CI)	B	S.E.	Wald χ^2	AOR (95% CI)
Both MI/SUD and violence	0.51*	0.25	4.17	1.67 (1.02, 2.73)	0.42	0.26	2.73	1.52 (0.92, 2.51)
Only violence	0.62***	0.11	30.60	1.85 (1.49, 2.30)	0.47***	0.12	16.46	1.61 (1.28, 2.02)
Only MISUD	0.20	0.17	1.32	1.22 (0.87, 1.72)	0.23	0.18	1.60	1.25 (0.88, 1.78)
A&TSI					0.46***	0.12	14.95	1.58 (1.25, 1.99)
Teenage birth					0.55***	0.11	27.38	1.73 (1.41, 2.12)
Low SES					0.09	0.11	0.66	1.09 (0.89, 1.34)
Model 1 χ^2 = (3, N = 4,150) = 30.83, $p < 0.001$; Nagelkerke R^2 = 0.02					Model 2 χ^2 = (6, N = 4,115) = 82.25, $p < 0.001$; Nagelkerke R^2 = 0.04			

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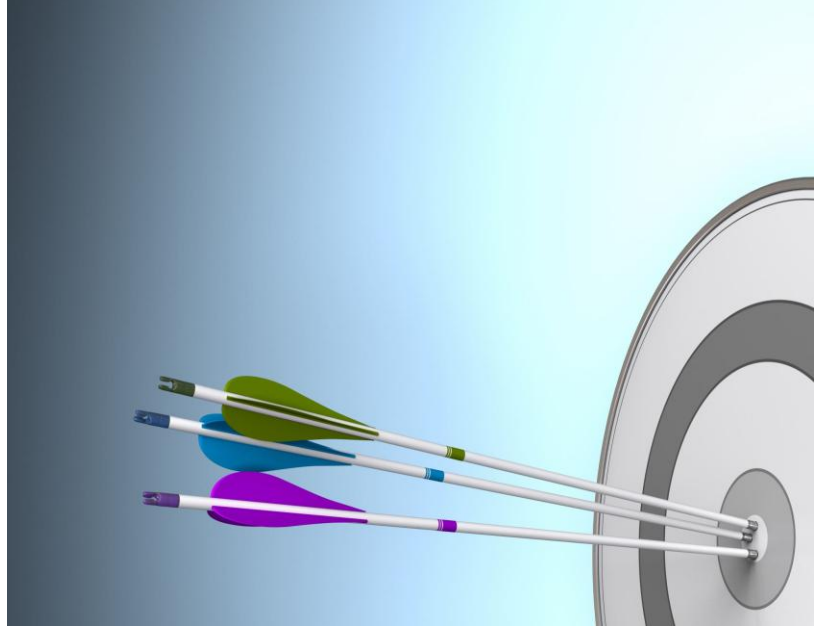
Key findings

- 11.1% had experienced PTB.
- Around 30% had experienced at least one type of SLEs with victimisation being the most frequently reported event.
- PTB was found to be significantly associated with
  - Teenage birth
  - A&TSI identity
  - Exposure to childhood violence,
  - Exposure to adolescent/ adulthood violence,
  - Diagnosed with a SUD



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Strengths and limitations of the study

Strengths

- Exploration of broader types of stressful experiences
- Use of large birth cohort data
- Use of longitudinal approach
- Use of administrative records

Limitations

- Limitation in the variables available in the dataset
- Use of hospital admissions data to identity MI and SUD
- Use of child protection notifications and DVO records

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Recommendations

- Implement targeted care tailored to the unique needs of teenage mothers.
- Culturally appropriate support and interventions for Aboriginal and/or Torres Strait Islander women.
- Prioritise research into the lived experiences of Aboriginal and/or Torres Strait Islander mothers and the systemic barriers that affect their engagement with health services.
- Early interventions to identify risk factors for childhood maltreatment and domestic violence.
- Explorations of additional risk factors that can contribute to PTB.

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