Aboriginal and Torres Strait Islander children's exposure to stressful events: a cross-sectional study in an urban Indigenous primary health care service.

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Abstract (250 words)

Objectives: To determine the frequency and types of stressful events affecting urban Aboriginal and/or Torres Strait Islander children and to explore the relationship between these experiences and the children's physical health and parental concerns about the children's behaviour and learning ability.

Design: Cross-sectional.

Setting: Urban Indigenous primary health care service in Brisbane, Australia.

Participants: Aboriginal and/or Torres Strait Islander children aged 0 – 14 years presenting for annual Child Health Checks from March 2007 to March 2010.

Main outcome measures: Parental (or carer) report of stressful events ever occurring in the family that affected the child.

Results: Of 344 eligible children, 175 (51%) had ever experienced stressful events. Reported events included death of a family member or close friend (40/175; 23%), family relationship breakdown (28/175; 16%), witness to violence or abuse (20/175; 11%), or incarceration of a family member (7/175; 4%). These children were more likely to have parents/carers concerned about their behaviour ($p<0.001$), and to have a history of ear ($p<0.001$) or skin ($p=0.003$) infections.

Conclusions: Children affected by stressful events in the family had behavioural issues and poorer physical health. Parental disclosure in the primary health care setting of stressful events that had affected the child necessitates appropriate interventions, be they medical, psychological and/or social to ameliorate both the immediate and potential lifelong negative impact. However, dealing with the impact of stressful events is insufficient without addressing the broader political and societal issues that result in a clustering of stressful events in the Aboriginal and Torres Strait

Islander population.

Introduction (1506 words)

Adverse life events and chronic stressors experienced during early childhood can negatively impact on development.(1, 2) While some exposure to stressful events can foster resilience(3), exposure to strong, frequent or prolonged stressors in childhood can result in dysregulation of the physiological stress response systems.(2, 4) This dysregulation can negatively impact on the development of social and emotional wellbeing, behaviour, literacy, and physical and mental health.(2, 4, 5) The inequalities experienced by Aboriginal and Torres Strait Islander peoples compared to non-Indigenous Australians needs to be considered within this context, particularly with the strong association between racial health inequalities and chronic stress.(6, 7)

Aboriginal and Torres Strait Islander peoples experience higher rates of stressful events than the general population, which in part, can be attributed to lasting impact of colonisation, intergenerational trauma and ongoing experiences of disadvantage and exclusion. The 2006 General Social Survey found that 61% of Australians aged 18+ years had experienced at least one stressful event.(10) In comparison, the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) identified that 77% of Indigenous adults, and 65% of Indigenous children aged 4 -14 years had experienced at least one stressful event.(11) Similarly, the Western Australian Aboriginal Child Health Survey (WAACHS) found that 71% of children had experienced at least three significant stressors.(12) All three surveys used a negative life events check-list to identify stressful events experienced in the preceding 12 months.

Indigenous children living in urban areas experience higher rates of stressful events than their rural/remote living counterparts.(11, 12) However, there is little research investigating their health status, despite the majority of Indigenous Australians living in urban settings and the different social and cultural milieu associated with these communities.(13, 14) We aimed to determine the frequency and types of stressful events affecting urban Aboriginal and/or Torres Strait Islander children, and to explore the relationship between these experiences and the children's physical health, behaviour and learning ability.

Methods

This cross-sectional study used data collected during annual Child Health Checks (CHCs) at the Inala Indigenous Health Service (IIHS), Brisbane. The CHC is a comprehensive health assessment that aims to increase access to preventive health care.(15) The IIHS, a Queensland Government general practice service(16), had 867 children listed as regular patients at the time of this study.

We recruited a consecutive sample of children having CHCs from March 2007 to March 2010, whose parents/carers consented to the CHC information being used for research. The majority of children had one CHC during the study period; for those who had two or more CHCs, only the first visit data was included.

Parents/carers were asked if any stressful events had occurred in the family that had affected the child. Responses to this question were not limited by a time-frame or use of checklist of negative life events.

Parents/carers were also asked if the child had had any recurrent chest, ear or skin infections, any injuries or burns, and if they had concerns about the child's behaviour or learning ability. For school age children, parents/carers were asked to compare the child's school grades to average. Weight and height were measured and body mass index (mass[kg]/height[m^2]) calculated. Family groupings of children were identified post-hoc through matching children's surnames, addresses, known siblings, household size, presentation on the same day for a CHC, or the same stressful events being recorded.

We categorised the reported stressful events and calculated the proportion of children affected by each category of stressor. Using statistical software Stata version 10.0 (StataCorp, College Station, Tex, USA), we tested for relationships between reported stressful events and the independent variables using binary generalised estimating equations (GEE) methods, nesting children within families, employing exchangeable correlation structures and robust estimators of variance. A two sided α=5% level was used to define statistical significance.

Ethical approval was obtained from The University of Queensland's Behavioural and Social Science Ethics Research Committee and Metro South Human Research Ethics Committee. The Inala Elders Aboriginal and Torres Strait Islander Corporation

supported the project and results were disseminated back to the Inala Aboriginal and Torres Strait Islander community.

Results

This study included 344 eligible children from 247 families, with a mean age of 7.3 years. Most children were Aboriginal (312/344; 91%) and lived with at least one parent (286/344; 84%). Household size ranged from two to 11 usual members, with a median of five. No sibling was identified for 51% (177/344) of participants , 15% (50/344) had one sibling, 4% (13/344) had two siblings, and 2% (7/344) had three siblings (Table 1).

Stressful events had affected 51% (175/344) of participants. No significant differences were seen in the reported exposure to stressful events by individual or familial characteristics reported in Table 1. Table 2 presents the categories of reported stressful events, and shows that 24% (42/175) of children had been affected by conflict in the family, 23% (40/175) by the death of a family member or close friend, and 15% (27/175) by housing issues, including overcrowding or housing insecurity. Violence or abuse, including domestic violence had been witnessed by 11% (20/175), and personally experienced by 10% (18/175) of children.

Children affected by stressful events were more likely to have parents/carers concerned about their behaviour ($p<0.001$), and to have a history of ear ($p<0.001$) or skin ($p=0.003$) infections (Table 3). The open-ended nature of the enquiry about

the number or type of stressful events experienced precludes any assessment of a dose-response relationship between exposure and outcomes.

Discussion

Approximately half of the children in this study had been affected by stressful events. Strong associations were seen between stressful events and recurrent ear and/or skin infections, and parental/carer concerns about the child's behaviour. No differences in the number of children affected by stressful events were observed between sex and age groups. Similarly, children from single parent households, or with teenage or unemployed parents, were no more likely to have been affected by stressful events than their counterparts.

This study used routinely collected clinical data from children attending the health service thus minimising inconvenience for study participants. Our 344 participants represent 64% of children having CHCs in the study period, and 40% of active patients aged 0 to 14 years. Issues such as the sickness of the presenting child, time constraints of the parent/carer or the clinic staff could impact on the number of CHCs conducted. Nonetheless, despite our clinic population comprising only 0.8% of Australia's urban Indigenous children, our service completed 10% of the CHCs done in Australian metropolitan areas to June 2009.(15) Our open-ended enquiry into types and frequency of stressful events introduces the potential for recall bias and under-reporting. However, such enquiry is likely to elicit events that were particularly notable for the child and family.(18) The cross-sectional nature of the data prevents any determination of causality between exposure and outcomes. The lack of a time-

stamp associated with the reported stressful events also prevents a temporal relationship between exposure and outcome being established. Finally, this study represents one urban Indigenous context and may not be generalisable to other urban areas or Indigenous primary health care services although there is little reason to assume that there would be substantial differences in the results.(19) These limitations do not negate the seriousness of our findings that approximately half the children in our study were reported to have been affected by stressful events, and the significant association of this with poorer physical health and parental concerns about behaviour.

Compared to the urban Aboriginal and Torres Strait Islander children included in the NATSISS and the WAACHS, our study found lower rates of stressful events and the absence of some expected stressors.(11, 12) None of our participants reported racism, trouble with the police or unemployment as stressors, whereas 12%, 16% and 32% of NATSISS respondents, respectively, reported these stressors. Some 65% of parents/carers in our study were unemployed, from a background unemployment rate for Aboriginal and Torres Strait Islander adults living in Inala in 2006 of 24%, 11% in the broader population of Inala, and 4% across Brisbane.(17) It is possible that the common experience of unemployment have resulted in it becoming normalised and therefore not considered stressful. However, it may also be an underlying, but unacknowledged or unrecognised cause of other stressors such as familial conflict, illness, or housing insecurity.

Childhood exposure to stress impacts on future health and wellbeing. Research through longitudinal investigations is necessary to disentangle the causes and effects of stressful events. Health care services need to respond to any disclosure of stressful events by providing access to appropriate interventions, be they medical, psychological and/or social, preferably via "in house" health professionals or referral to culturally competent community agencies. However, simply treating the impact of stressful events is insufficient without also addressing the colonial legacy of displacement, child-removal, marginalisation and exploitation that contributes to the excessive rates of transgenerational trauma and socio-economic disadvantage experienced by Aboriginal and Torres Strait Islander peoples.(9, 20) The risk of not addressing both the causes and the effects of childhood exposure to stressful events is that the disparity in life expectancy between Indigenous and non-Indigenous Australians is unlikely to improve.(8, 9)

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Table 1: Individual and familial characteristic of eligible children having Child Health Checks at Inala Indigenous Health Service overall (n=344) and partitioned by whether they had experienced at least one stressful event (n=175) or not (n=169)

			A least one stressful event				
	Overall		Yes		No		
	n	*(%)*	n	*(%)*	n	*(%)*	p-value
Sex							0.40
Male	180	*(52)*	94	*(54)*	86	*(51)*	
Female	164	*(48)*	81	*(46)*	83	*(49)*	
Age (years)							0.45
0-4	107	*(31)*	52	*(30)*	55	*(33)*	
5-9	142	*(41)*	78	*(45)*	64	*(38)*	
10-14	95	*(28)*	45	*(26)*	50	*(30)*	
Ethnicity							0.96
Aboriginal	312	*(91)*	157	*(90)*	155	*(92)*	
Torres Strait Islander	7	*(2)*	5	*(3)*	2	*(1)*	
Both Aboriginal and Torres Strait Islander	25	*(7)*	13	*(7)*	12	*(7)*	
Main carer with whom the child lives							0.07
Parent(s)	286	*(84)*	137	*(80)*	149	*(89)*	
Grandparent(s)	15	*(4)*	8	*(5)*	7	*(4)*	
Other relative(s)	20	*(6)*	15	*(9)*	5	*(3)*	
Friend(s)	1	*(0)*	1	*(1)*	0	*(0)*	
In care	17	*(5)*	11	*(6)*	6	*(4)*	
Single parent households							0.10

Yes	151	*(44)*	87	*(50)*	64	*(38)*	
No	192	*(56)*	87	*(50)*	105	*(62)*	
Parent(s)/carer(s) employment status							0.10
Employed	121	*(35)*	49	*(28)*	72	*(43)*	
Unemployed	222	*(65)*	125	*(72)*	97	*(57)*	
Teenage parent(s)							0.23
Yes	14	*(4)*	9	*(5)*	5	*(3)*	
No	329	*(96)*	165	*(95)*	164	*(97)*	

Note: all p-values calculated using binary generalised estimating equations (GEE) methods, clustering children within their families.

Table 2: Categorisation and frequency of stressful events reported by parent(s)/carer(s) during Child Health Checks for children having experienced at least one stressful event (n=175)

Stressful events category	n	*(%)*
Conflict in the family	42	*(24)*
Death of family member or close friend	40	*(23)*
Parental divorce or separation	28	*(16)*
Housing issues (including overcrowding & housing insecurity)	27	*(15)*
Lack of emotional support from parents	26	*(15)*
Serious illness in family	23	*(13)*
Witness to violence or abuse	20	*(11)*
Experienced abuse or violent crime	18	*(10)*
Living away from parents, with other family members	17	*(10)*
In foster care	16	*(9)*
Alcohol or drug related problem in family	13	*(7)*
Problems at school	11	*(6)*
New to community	10	*(6)*
Member of family in jail	7	*(4)*
Other	11	*(6)*

Table 3: Developmental characteristics, emotional wellbeing, and physical health of eligible children, partitioned by whether they had experienced at least one stressful event (n=175) or not (n=169)

	Overall		A least one stressful event: Yes		A least one stressful event: No		
	n	*(%)*	n	*(%)*	n	*(%)*	p-value
Developmental Characteristics							
Parents/carers concerned about learning							0.10
Yes	75	*(32)*	47	*(37)*	28	*(25)*	
No	161	*(68)*	79	*(63)*	82	*(75)*	
Parents/carers concerned about behaviour							<0.001
Yes	69	*(29)*	50	*(40)*	19	*(17)*	
No	165	*(71)*	74	*(60)*	91	*(83)*	
School grades on report card							0.19
Below average	36	*(19)*	24	*(25)*	12	*(12)*	
Above average or average	157	*(81)*	71	*(75)*	86	*(88)*	
Physical health							
Body mass index (BMI) categories							0.62
Overweight or obese (BMI >25kg/m^2)	75	*(26)*	37	*(25)*	38	*(27)*	
Normal or underweight (BMI ≤25kg/m^2)	217	*(74)*	114	*(75)*	103	*(73)*	
Past history of recurrent chest infections							0.10
Yes	33	*(11)*	23	*(15)*	10	*(7)*	
No	275	*(89)*	133	*(85)*	142	*(93)*	
Past history of ear infections							<0.001

Yes	87	*(28)*	58	*(36)*	29	*(19)*	
No	226	*(72)*	102	*(64)*	124	*(81)*	
Past history of skin infections							0.003
Yes	67	*(22)*	48	*(30)*	19	*(13)*	
No	241	*(78)*	110	*(70)*	131	*(87)*	
Past history of burns or injuries							0.51
Yes	42	*(14)*	25	*(16)*	17	*(11)*	
No	264	*(86)*	128	*(84)*	136	*(89)*	

Note: all p-values calculated using binary GEE methods, clustering children within their families.