

Family risk factors for injuries in UK primary school aged children

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CENTRE FOR CHILD &
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What do we already know about injuries in school aged children?

Systematic review of cohort studies of children that report injuries

- Number of injuries ↑ with age
- Boys > girls
- Commonest injuries = cuts & wounds
- School & leisure environments ↑ with age

What evidence exists of an association between family factors and injuries?

- More siblings ++
- Younger mother +
- Single parent ?
- Low parental education ?
- Low socioeconomic status ?
- Poor parenting / family dysfunction ?

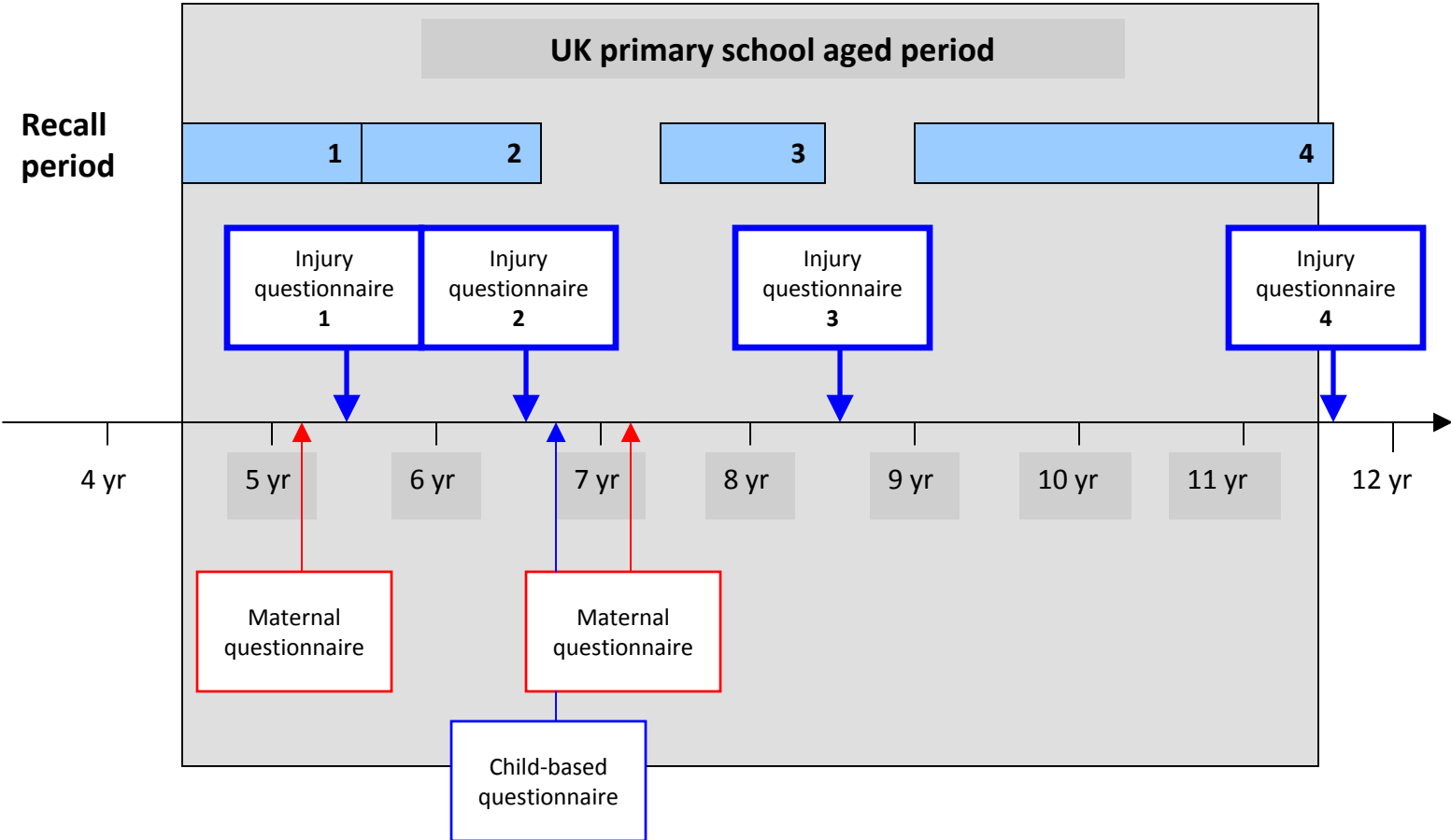
ALSPAC



- Avon Longitudinal Study of Parents and Children
- Women recruited with an expected delivery date between 1st April 1991 and 31st December 1992
- 13998 infants live at 12 months
- Parentally reported injuries occurring to children aged 4½-11½ years



ALSPAC primary school age injury measures



BLUE Questions about child, usually maternal report

RED Questions about mother, asked of mother

A1. a) Has he been **burnt or scalded** since he was 4½ years old?

Yes No → If **no**, go to A2a on page 4

If **yes**, b) how many times?

For each burn or scald please describe below what happened:

	1st accident	2nd accident	3rd accident
c) Place accident happened (e.g. kitchen, garden, school)
d) What was he burnt with? (e.g. tea, iron, electric fire)
e) Date of accident (month, year)
f) Injuries caused (if no injury write none)
g) Who was with him?

Injury data

Questionnaire (Age)	Questionnaires sent out	Questionnaires returned (%)	Recall period (months)	No. of injury events	No. of children injured (%)
1 (5½ years)	11549	9013 (78.0)	12	2050	1607 (17.8)
2 (6½ years)	10908	8578 (78.6)	12	2882	2019 (23.5)
3 (8½ years)	10981	7996 (72.8)	12	3476	2271 (28.4)
4 (11½ years)	10311	7165 (69.5)	30	4446	2846 (39.7)

Number of families returning all 4 injury questionnaires = 5752

Total reported injury events = 12854

Analysis of risk factors for injury

- Outcome = any injury seen &/or treated in secondary care
- No. of children with outcome = 1877 (32.6%)
- Analysis split by age:
 - Early primary (data collected at age 5½ & 6 ½)
 - Late primary (data collected at age 8½ & 11½)

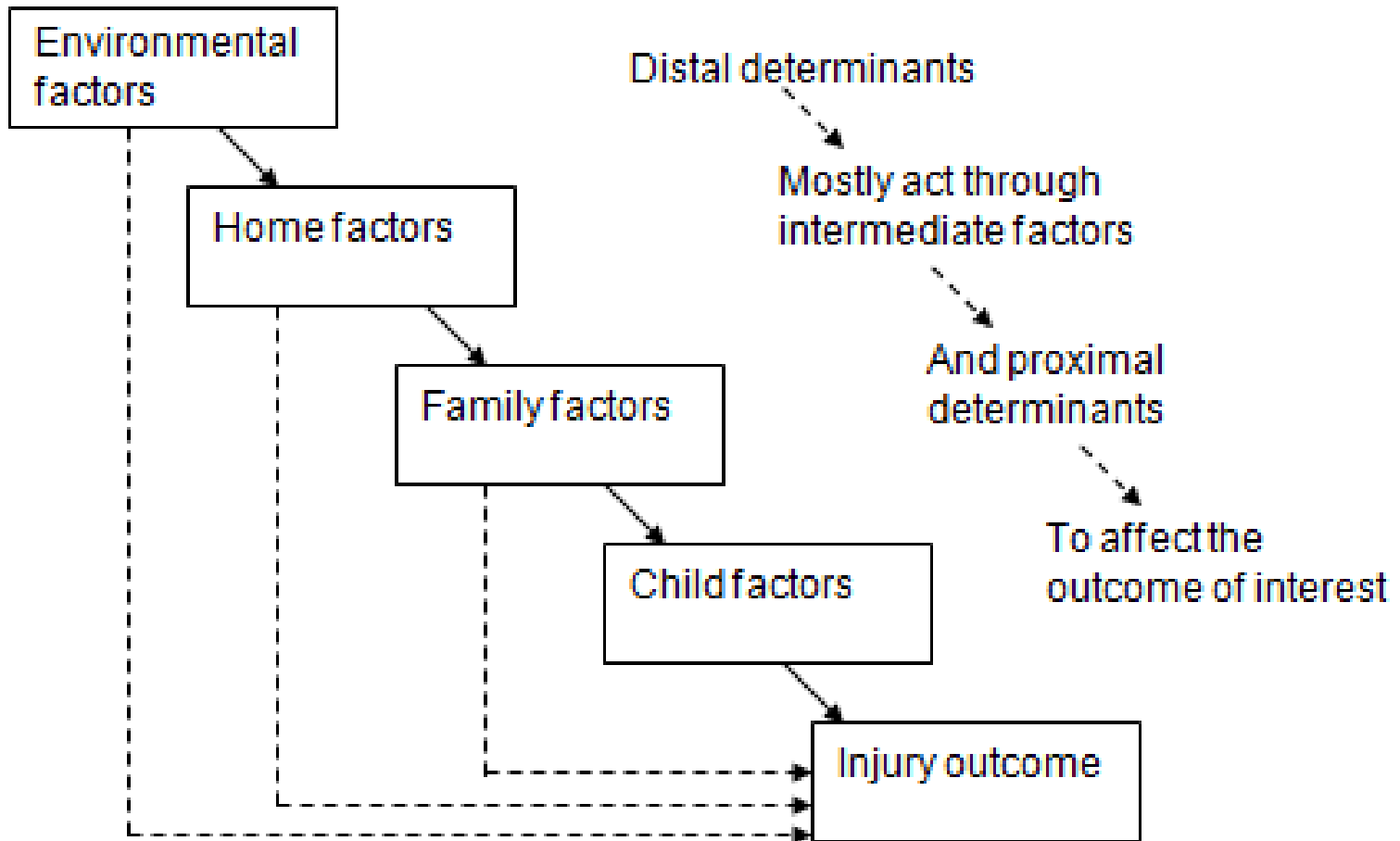
Analysis of risk factors for injury

- Explanatory factors were split into 4 groups; **Child, family, home and environment**
- Univariable analyses
- Multivariable model contained explanatory factors if unadjusted univariable analyses produced odds ratios with $p < 0.1$
- Complete case and multiply imputed datasets

Univariable analysis: family factors

Family factor	Early primary		Late primary	
	Unadjusted odds ratio (95% CI)	P value	Unadjusted odds ratio (95% CI)	P value
Mothers age at child's birth	n/a	0.7853	n/a	0.4804
Number of younger siblings	0.83 (0.73, 0.93)	0.002	1.04 (0.95, 1.13)	0.446
Number of older siblings	1.17 (1.06, 1.30)	0.003	0.99 (0.91, 1.08)	0.777
Total number of siblings	1.01 (0.91, 1.12)	0.845	1.01 (0.93, 1.09)	0.810
Mothers marital status	1.13 (0.91, 1.40)	0.261	1.10 (0.94, 1.30)	0.244
Mother lives with husband / partner	0.97 (0.74, 1.28)	0.831	1.17 (0.96, 1.42)	0.127
Mothers reported general health	1.43 (1.06, 1.93)	0.019	0.96 (0.72, 1.30)	0.814
Mothers reported alcohol consumption	0.97 (0.79, 1.20)	0.791	1.03 (0.90, 1.19)	0.658
Mothers reported anxiety	1.09 (0.90, 1.31)	0.399	1.08 (0.94, 1.24)	0.294
Mothers reported depression	1.11 (0.92, 1.34)	0.268	1.15 (1.00, 1.33)	0.049
Mothers highest level of education	0.92 (0.75, 1.11)	0.380	0.85 (0.73, 0.99)	0.039
Paternal social class	1.14 (0.97, 1.35)	0.110	1.09 (0.96, 1.25)	0.175
Maternal life events score	1.10 (0.99, 1.22)	0.071	1.23 (1.13, 1.34)	<0.001

Hierarchical conceptual framework



Distal determinants may exert some effect directly

Multivariable analysis: Early primary school aged children

Variable name	Complete outcome dataset			Multiply imputed dataset		
	Prevalence	OR (95% CI)	P value	Prevalence	OR (95% CI)	P value
Parental social class	41.1%	1.04 (0.85, 1.28)	0.691	41.8%	1.07 (0.90, 1.28)	0.429
Mothers highest qualification	20.1%	0.81 (0.62, 1.07)	0.139	20.3%	0.83 (0.67, 1.03)	0.088
Number of younger siblings	N/a	0.88 (0.74, 1.05)	0.144	N/a	0.83 (0.72, 0.96)	0.012
Number of older siblings	N/a	1.17 (1.01, 1.36)	0.040	N/a	1.07 (0.94, 1.22)	0.288
Mothers reported general health	5.7%	1.38 (0.94, 2.01)	0.099	5.9%	1.29 (0.94, 1.77)	0.118
Maternal self reported depression	20.8%	0.95 (0.74, 1.22)	0.687	21.5%	1.00 (0.81, 1.22)	0.967
Maternal life events score	N/a	1.02 (0.90, 1.16)	0.718	N/a	1.08 (0.97, 1.21)	0.159

Family variables adjusted for family, home and environment

Multivariable analysis: Late primary school aged children

Variable name	Complete outcome dataset			Multiply imputed dataset		
	Prevalence	OR (95% CI)	P value	Prevalence	OR (95% CI)	P value
Parental social class	41.1%	1.16 (0.98, 1.38)	0.084	41.8%	1.15 (1.01, 1.32)	0.042
Mothers highest qualification	21.5%	0.89 (0.71, 1.11)	0.290	21.6%	0.84 (0.72, 0.99)	0.032
Number of younger siblings	N/a	1.06 (0.93, 1.22)	0.371	N/a	1.00 (0.90, 1.11)	0.953
Number of older siblings	N/a	0.99 (0.87, 1.13)	0.882	N/a	1.02 (0.92, 1.13)	0.727
Mothers reported general health	4.4%	0.67 (0.43, 1.02)	0.061	4.6%	0.83 (0.62, 1.13)	0.242
Maternal self reported depression	23.4%	1.09 (0.90, 1.32)	0.375	24.9%	1.08 (0.93, 1.25)	0.333
Maternal life events score	N/a	1.20 (1.08, 1.33)	0.001	N/a	1.19 (1.09, 1.30)	<0.001

Family variables adjusted for family, home and environment

Summary

- Young maternal age is not a risk factor for primary school aged children
- Having younger siblings may be protective for children in their early primary school age
- High numbers of maternal life events may be a risk factor for older children
- These associations may indicate the focus for targeted interventions