



Child Injuries in Ireland: Risk Factors Related to Family, School, Neighbourhood, and the Child

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WHO on child injuries

- Unintentional injuries represent a leading cause of morbidity and mortality amongst children
- The most affected are children under 4 years old
- The most serious injuries are burns and scalds
- The most frequent injuries are the results of falls
- The majority of injuries are preventable through environmental modification, education and regulation



Known risk factors

- Low socio-economic status
- Teenage parenthood
- Single parent and step-parent families
- Low maternal education
- Stressful life events
- Dysfunctional parenting, parental distress
- Dysfunctional supervisory style
- Parental depression, substance abuse, physical and mental illness
- Child hyperactivity
- Child male gender



Aims of this study

- This study aims to identify key risk factors of child injuries related to:
 - child immediate environment (parental & household characteristics)
 - broader environment (school & neighbourhood characteristics)
 - child characteristics (gender, emotional and behavioural difficulties)
- Secondly, we aim to contribute to the on-going debate of whether or not repeated injuries among children can be seen as accident-proneness



Is accident-proneness an actual phenomenon?

- To address the question above we test:
 - if repeated injuries (thus accident proneness) and single injuries (thus incidental injuries) are differently related to the set of predictors – child characteristics and other variables
- We compare those children who have never been injured to those who had 1 injury, 2 injuries, and 3 or more injuries.



Sample

8568 9-year olds and their families,
participants of the Growing Up in
Ireland study

A measure of injuries and bone fractures

Primary caregiver questionnaire:

B14. Most children have accidents at some time. Has the <Study Child's twin> ever had an accident or injury that required hospital treatment or admission?

Yes

No2

B15. How many separate accidents has the <Study Child's twin> ever had that required hospital treatment or admission?

_____ accidents

B16. How many of these accidents involved bone fractures or breaks? _____



Prevalence

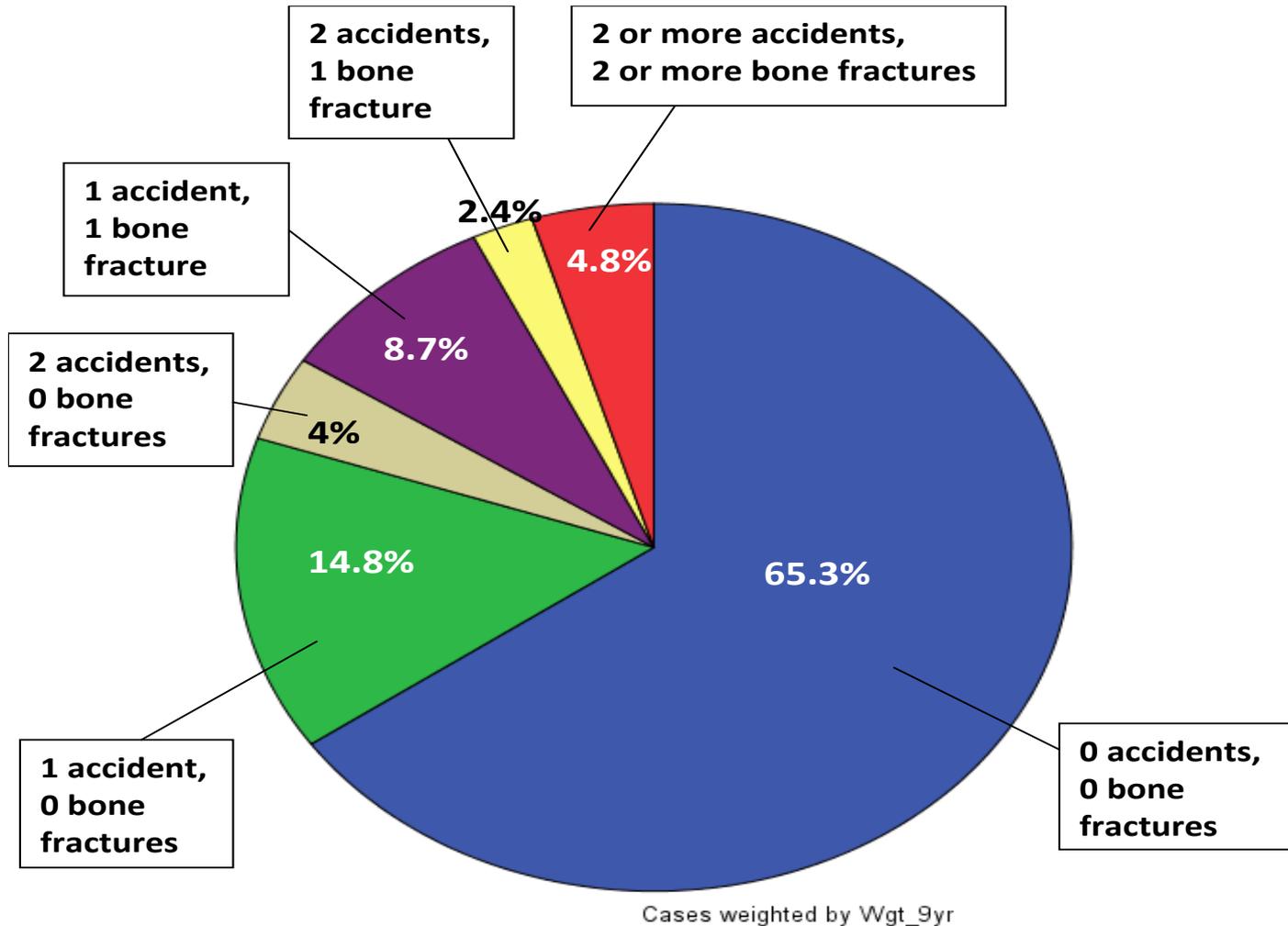
- 35% of children in the GUI sample had an accident or injury requiring hospital treatment
- 24% had one accident/injury, while 11% experienced repeated accidents/injuries
- 14% had bone fractures

Comparing this with the UK data:

- 24% of 7 year olds in UK had one or more injuries (the Millennium Cohort Study)

% computed on non-weighted GUI and MSC data

Accidents & Injuries: Severity





Accidents & types of child care

		Accidents/injury requiring hospital		Total
		YES	NO	
Child minded at home by a parent	N % of 6408	2189 34%	4219 66%	6408
Child minded by an unpaid relative or family friend	N % of 603	215 36%	388 64%	603
Child minded by a paid child minder (relative, family friend, nanny, or Au Pair)	N % of 1168	385 33%	783 67%	1168
Paid after-school care in a group setting or after-school activity-based facility	N % of 273	112 41%	162 59%	273

Non-weighted GUI data



Analysis: risk and preventive factors

- We used logistic regression (0- no injury vs. 1- one or more injuries)
- Variables entered as predictors:

Pertaining to immediate environment:

family type, parental characteristics (education, working hours, depression, age at family formation), mother's experience of poverty when young, quality of parenting (Pianta scales), poverty, drug or alcoholism in the family, number of siblings, accommodation type.

Pertaining to broader environment:

indicator of safe & clean neighbourhood, school characteristics (proportion of children with emotional and behavioural problems, proportion of boys at school, quality of playgrounds and school facilities, breakfast club, free meals).

Pertaining to child characteristics:

gender, sub-scales of SDQ (hyperactivity, conduct problems, emotional problems), being a victim of bullying, bullying others, discipline problems, physical and social activity.



Immediate environment

The risk of injuries is increased by:

- Household poverty
- Low education of a father

Preventive factors:

- If the mother of a child **did not** experience poverty when she was young, her child is **less likely** to suffer injury



Broader environment

The risk of injuries is increased:

- If a child attends a school with a high proportion of pupils with emotional and behavioural problems

Preventive factors:

- If a child attends a school which provides a breakfast club every day or on some days of the week this reduces the risk of accident/injury compared to children attending schools with no breakfast club



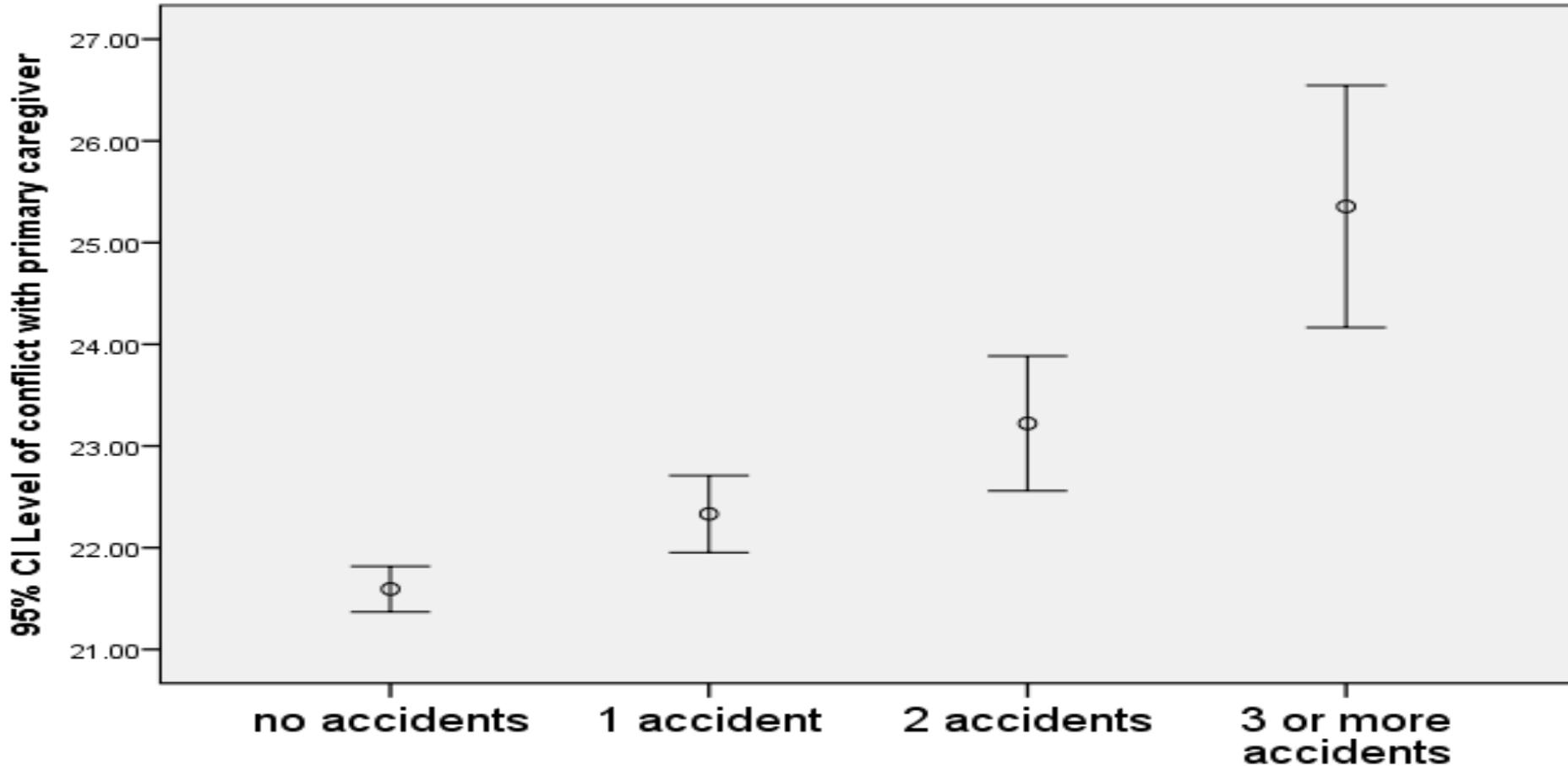
Child characteristics

The risk of injuries is increased:

- If a child frequently plays with friends
- If a child has been a victim of bullying in the year preceding the survey
- If a child picked on someone
- If a child shows conduct problems and hyperactivity



Mother-child conflict: mean scores and confidence intervals



Cases weighted by Wgt_9yr



Father-child conflict: mean scores and confidence intervals



Cases weighted by Wgt_9yr



Neighbourhood – lack of safety & untidiness: mean scores and confidence intervals



Cases weighted by Wgt_9yr



Neglected child indicator: mean scores and confidence intervals





“Accident proneness”

Multinomial logistic regression showed differences between the 4 groups of children (0, 1, 2, 3 or more injuries):

- those who suffered 3 or more injuries were more likely than those who have never been injured to come from a socially disadvantaged background (with drugs or alcoholism in the family, conflict between parents, poverty, parents of young age at family formation)
- those who suffered 3 or more injuries compared to those with 1 injury were more likely to come from families with conflict between parents and drugs or alcoholism in the family
- there was no difference between those who suffered 2 and 3 injuries in terms of family background



Conclusions

- We found evidence suggesting that the reason for **repeated injuries** is external to the child – likely to be related to family characteristics, rather than child characteristics. Thus, the hypothesis about “accident proneness” was not confirmed.
- Repeated injuries usually indicate serious problems in the household (poverty, substance abuse, conflict between parents)
- Hyperactivity and conduct problems predispose a child to injury (*but not necessarily repeated injuries*)



Preventive measures

- Improving parental skills (especially when dealing with hyperactive and problematic children)
- Improving supervision at playgrounds and at schools with a high proportion of children with emotional and behavioural problems
- Introduction of anti-bullying policies
- Repeated injuries should raise the concern of teachers and social workers



References

- **CSDH (2008). *Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health.* Geneva, World Health Organization.**
- **Pearce, A., et al. (2012). *Does the home environment influence inequalities in unintentional injury in early childhood? Findings from the UK Millennium Cohort Study.* J Epidemiol Community Health 66,181-188**