

Risk Factors Influencing Children's Involvement in Road Traffic Accidents

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Kamel Mansi*, Elizabeth Towner*, Alan Emond¹, Julie Mytton*, Kate Nothstone¹

UWE* UoB¹

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Outline of Presentation

- The project
 - Aims
 - Objectives
- The ALSPAC Cohort
- Preliminary findings
- Discussion
- Conclusions
- Future plan

Aims

- .To explore the relationship between exposure to injury risk in the road environment, reported road traffic injuries and a range of personal and family risk factors
- .Subjects – adolescents aged 13-14 years from the Avon Longitudinal Study of Parents and Children (ALSPAC)

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- .Study funded by the Department for Transport

Objectives

- To describe exposure to the road environment of a cohort of young people aged 13-14 years in England
- To describe the reported road traffic accident involvement of a cohort of young people aged 13-14 years in England
- To explore the relationship between exposure to the road environment, reported road traffic accidents and a range of personal and family risk factors, including social deprivation

Policy Context

- Department for Transport has target to reduce road traffic casualties
- Young people aged 11-15 years remain a priority – casualties in this age group fallen less than those for younger children
- Government is actively encouraging children to walk and cycle more to improve their health and well being – this needs to take safety into account

The ALSPAC Cohort

- Longitudinal birth cohort - started in 1991 - 14,062 children initially recruited
- Study area population of 1 million – Bristol and surrounding area (old county of Avon)
- Families initially recruited resembled those in Britain as a whole, based on a comparison with census data

Data collected from ALSPAC Cohort

- Data collected over past 17 years on children's health, development and environment
- Questionnaires completed by child's mother, her partner, child him/herself, periodic physical examination and extraction of data from medical notes
- Considerable amount of data on child, family and environmental factors collected e.g. parental social class, education, income, housing, childcare, etc.
- In this presentation, the data has been collected from questionnaires completed by young people themselves.

Background Characteristics of the Sample

- 10,225 questionnaires were posted out to the ALSPAC cohort and 7,507 questionnaires were completed and returned (a response rate of 73%)
- Females were more likely than males to complete the questionnaire (64% for females and 52 % for males, $\chi^2=168.819$, $P=0.000<0.05$)
- Children whose mothers were educated to degree level (76 %) were more likely to complete the questionnaires than children whose mothers were educated to GCSE level (45 %), $\chi^2= 373.169$, $P=0.0.00<0.05$.

Findings: Children's Trips to and from School

- Females were more likely to take a short time to get school than their male counterparts ($\chi^2 = 11.408$, $P = 0.044 < 0.05$).
- Children whose mothers were educated to degree level spend less time than children whose mothers with lower levels of qualification ($\chi^2 = 57.594$, $P = 0.000 < 0.05$).
- There was no significant differences between different social classes (Index of Multiple Deprivation) in relation to children's trip time to school
- Females were more likely to use pedestrian crossing (35%) than their males counterparts 30% ($\chi^2 = 22.108$, $P = 0.000 < 0.05$).

Mode of transport child used from school to home (%)

Findings: Riding Bicycles

- Males (93%) were more likely to own bicycles than females (86%).
- Children whose mothers were educated to degree level (90%) were more likely to own bicycles than children whose mothers were educated to GCSE level (84%), ($\chi^2=28.996$, $P= 0.000<0.05$).
- Males were more likely to own bicycle helmets ($\chi^2=31.314$, $P= 0.000<0.05$).
- Females were less likely to feel very safe (46%) while riding bicycles than males (59%) on roads near where they lived ($\chi^2=42.489$, $P= 0.000<0.05$).
- Only one quarter of children wore a bicycle helmet the last time they rode a bicycle.
- Children who have high level of high sensation seeking were more likely to wear bicycle helmets ($\chi^2=22.897$, $P= 0.000<0.05$).

Findings: Road Traffic Accidents

- There is no significant relationship between sexes in relation to overall involvement in road traffic accidents (5.7% males and 5.3% females, $\chi^2=0.586$, $P=0.239>0.05$)
- 65% of children were car and bus passengers ('passive' accidents) versus 35% involved as pedestrians and cyclists ('active' accidents)
- Females were more likely to be involved in 'passive' accidents (72%) than males (57%, ($\chi^2=8.749$, $P=0.002<0.05$))
- More than half (56%) of children were with a parent or adult when the accident occurred
- 28% of children were involved in road traffic accidents while they were on journeys to or home from school
- There was no significant difference between different levels of risk taking activities and children's involvement in 'active' or 'passive' accidents ($\chi^2=0.213$, $P=0.404>0.05$).

Road Traffic Accidents

- 5.5% of children were involved in road traffic accidents
- 31.8% were hurt
- 8.2% saw a family doctor
- 15.2% went to emergency department
- 3% admitted to hospital
- Of those who sought medical attention:
 - 40.9% were cyclists
 - 30.3% were car passengers
 - 18.2% were pedestrians

Commentary

- 39% of children walked to school – this is consistent with the results of the National Travel Survey which found that 41% of children walked to school.
- The results of the study found no significant difference between males and females in relation to their involvement in road traffic accidents overall.

Conclusions

- ALSPAC data has been very rich source of data
- Several relationships between the variables can be explored
- It is an opportunity for researchers to look at the data in the future at different time periods

Future Plans

- Building different types of multivariate models with particular focus on involvement in road traffic accidents and safety behaviour (wearing seat belts, wearing bicycle helmets, using pedestrian crossing and pedestrian and cycling training)