

Socioeconomic status and the prevention of child home injuries: a survey of parents of preschool children

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Abstract

Objectives—To examine the effect of socioeconomic status on the attitudes parents of preschool children towards child home safety issues and practice of home safety measures.

Setting—A community based study in the Lanarkshire Health Board area, a mixed urban-rural setting in central Scotland.

Methods—A postal survey of two random samples of parents of preschool children (aged 3 years). One sample (A) involved parents living in more affluent areas and the other (B) parents living in less affluent areas.

Results—In general, parents in both groups showed similar attitudes towards home safety. The only significant differences to emerge were over parental perceptions of the safety of the neighbourhood in which they lived and over the availability of money to keep their child safe (group B > group A, $p < 0.0042$). Parents from group B also tended to report similar or safer levels of home safety behaviour to parents from group A.

Conclusions—The findings do not suggest that differences in the injury experience of children from more and less affluent backgrounds are due to differences in parental attitude, knowledge, or practice of home safety measures. Thus, the study does not support the selective targeting of families from less affluent areas with educational interventions. Instead, the findings do support the use of a multi-method approach to home safety, where educational approaches are complemented by environmental modification.

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Keywords: socioeconomic status; preschool children; home injuries.

Unintentional injury is a significant cause of death and long term disability in children. In children aged 1 to 5 years, the most common place for injuries to occur is in the home. Such injuries cause considerable distress and suffering to children and their families, and present a significant financial burden to the health service.¹

Scotland's Health: A Challenge to Us All noted that Scotland's unintentional injury rate was higher than that of England and Wales and identified injury prevention as a priority area

for action.² Injuries in the home were highlighted as being of particular concern, given that such events had been relatively neglected in the past, with little research and few sustained preventive initiatives.³ A recent systematic review of injury prevention in children and adolescents also highlighted the need for further research into this relatively neglected area.⁴ If a substantial reduction in unintentional home injury is to be achieved, a fuller understanding of the factors that contribute to both the occurrence and the prevention of unintentional home injury is required.

Of prime importance is an appreciation of the influence of socioeconomic status on unintentional injury occurrence. The Black report highlighted the impact of social class on injury experience, with children from poorer backgrounds being five times more likely to die from injury than those from more affluent areas.⁵ Other studies have shown similar socioeconomic gradients.^{6,7}

In the past, the higher rate of child injury in more deprived areas was attributed to deficiencies in parental knowledge and safe keeping behaviour. More recently, it is recognised that a more complex range of factors contribute to the occurrence of unintentional injuries, with the physical and psychosocial environment, and the injury inducing agent, being as important as the behaviour of the person(s) directly involved. Relatively few studies, however, have documented how these contributory factors vary with socioeconomic status. Furthermore, the comparability and generalisability of these studies is limited, as they have tended to focus on children of differing ages and sociocultural backgrounds and have used different methods of data collection and of assessing socioeconomic status.

In 1994, the Lanarkshire Health Alliance (an interagency forum) set up a short life task group to review injuries and injury prevention activities within the region. A number of recommendations were made as a result of this review, including the need to target home injuries. The task group also recognised the significant role played by social deprivation in unintentional injury occurrence. Preschool children from less affluent areas of Lanarkshire are twice as likely to be admitted as inpatients after an 'accident' than those from more affluent areas. Local knowledge was seen as a key element in the development of a strategy to target these priorities. With this aim, a postal survey of parents of preschool children in Lanarkshire was carried out in May 1995. The survey, which was designed to be a broad

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examination of preschool child home safety issues in Lanarkshire, involved parents from the most and least affluent parts of the region.

Methods

As part of a local road safety initiative, a system had already been established where each month all children approaching their third birthday are identified in the Community Health Index (a computer based database of all Lanarkshire residents registered with a general practitioner). This system was used to recruit two random samples of children—one

from those living in more affluent areas (deprivation category^{8 9} (DEPCAT) 1, 2 or 3, group A, n=200) and the other from those living in less affluent areas (DEPCAT 6 or 7, group B, n=200). Sample size was determined on the basis of published data and expected response rate.^{10 11}

A postal questionnaire was developed following the guidelines described by Stone.¹² Home safety variables of interest were identified, and previously published data collection instruments reviewed. This information was then collated to form a pilot questionnaire. This questionnaire was modified after a pilot survey of two groups of 20 parents. (The results of this survey were not included in the main study.) In view of the wide recognition and use of the term 'accident' by the general public, it was decided to adopt this term in place of 'unintentional injury'.

Parents in the study groups were sent a coded copy of the questionnaire, with up to two reminders to those that failed to respond to the first. All data received were entered into a computer based database (Epi Info Version 6).¹³ Data analysis was performed using a PC based SPSS statistical analysis program.¹⁴

Table 1 Sociodemographic characteristics of respondents

	Group A	Group B
Mean (SD) age of respondent in years	32 (5.1)	30 (5.4)
Mean (SD) age left full time education in years	18 (2.4)	16 (1.2)
Home ownership (%) ($p < 0.001$, χ^2)		
Own home	98 (75)	34 (32)
Rented		
Council	29 (22)	69 (66)
Privately/other	4 (3)	2 (2)
Occupational status (%) ($p < 0.01$, χ^2)		
Housewife	42 (32)	51 (50)
Employed	77 (58)	39 (38)
Other	12 (10)	12 (12)
Only adult in household (%)	11 (8)	22 (21)

Table 2 Parental home safety attitudes/beliefs (% are shown in parentheses)

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
My home is as safe as it could be					
Group A	29 (21.6)	93 (69.4)	10 (7.5)	1 (0.7)	1 (0.7)
Group B	24 (20.7)	76 (65.5)	15 (12.9)	0	1 (0.9)
My neighbourhood is as safe as it could be*					
Group A	15 (11.2)	91 (67.9)	22 (16.4)	6 (4.5)	0
Group B	5 (4.3)	62 (53.4)	24 (20.7)	23 (19.8)	2 (1.7)
Many accidents can be prevented					
Group A	47 (35.1)	80 (59.7)	6 (4.5)	1 (0.7)	0
Group B	48 (41.4)	56 (48.3)	12 (10.3)	0	0
You can't watch children all the time					
Group A	32 (24.1)	87 (65.4)	11 (8.3)	3 (2.3)	0
Group B	28 (24.1)	79 (68.1)	9 (7.8)	0	0
Accidents are just part of growing up					
Group A	6 (4.5)	46 (34.3)	58 (43.3)	20 (14.9)	4 (3.0)
Group B	8 (7.0)	52 (45.6)	38 (33.3)	13 (11.4)	3 (2.6)
I do not know enough about how to keep my child from having an accident					
Group A	2 (1.5)	7 (5.2)	81 (60.4)	43 (32.1)	1 (0.7)
Group B	1 (0.9)	12 (10.3)	72 (62.1)	30 (25.9)	1 (0.9)
I do not have enough money to keep my child from having an accident*					
Group A	4 (3.0)	24 (17.9)	67 (50.0)	38 (28.4)	1 (0.7)
Group B	7 (6.0)	28 (24.1)	63 (54.3)	15 (12.9)	3 (2.6)
I worry about my child having an accident					
Group A	6 (4.5)	45 (33.6)	62 (46.3)	21 (15.7)	0
Group B	10 (8.8)	43 (38.1)	47 (41.6)	13 (11.5)	0
I find it difficult to keep my child from having an accident					
Group A	0	3 (2.2)	76 (56.7)	55 (41.0)	0
Group B	1 (0.9)	5 (4.4)	77 (67.5)	30 (26.3)	1 (0.9)
I am often too tired to keep my child from having an accident					
Group A	2 (1.5)	11 (8.2)	76 (56.7)	45 (33.6)	0
Group B	4 (3.4)	3 (2.6)	67 (57.8)	41 (35.3)	1 (0.9)
I do not have enough time to keep my child from having an accident					
Group A	2 (1.5)	16 (11.9)	72 (53.7)	44 (32.8)	0
Group B	3 (2.6)	7 (6.0)	68 (58.6)	37 (31.9)	1 (0.9)
My child won't do what I tell him/her to do to keep from having an accident					
Group A	2 (2.3)	47 (35.3)	64 (48.1)	18 (13.5)	1 (0.8)
Group B	7 (6.2)	39 (34.5)	55 (48.7)	12 (10.6)	0

*Mann-Whitney U with correction for ties, Bonferroni correction for multiple comparisons $p < 0.0042$.

Results

One hundred and thirty four parents in group A (most affluent) and 116 in group B (less affluent) took part in the survey, giving response rates of 67% and 58%, respectively. The majority of respondents were the child's mother.

SOCIODEMOGRAPHY

Sociodemographic characteristics of each group are shown in table 1. These were largely as expected, with mothers from group A being slightly older, having longer experience of full time education, and more likely to own their own home. More mothers in group B than group A reported that they were the only adult in the household.

PARENTAL BELIEFS AND ATTITUDES

Parents were presented with 12 variables relating to home safety and asked to circle the response that most closely resembled their own opinion. For the majority of the issues examined parental responses were similar (table 2). Significant differences were found in group responses for only two variables. Parents in group B were more likely to agree that the neighbourhood in which they lived was unsafe and that they did not have enough money to keep their child from having an accident (Mann-Whitney U with correction for ties, Bonferroni correction for multiple comparison, $p < 0.0042$).

In general, parents from both groups appeared very confident of their safe keeping abilities, with around 90% of respondents in each group agreeing that their 'home was as safe as it could be', and disagreeing with the

statement 'I don't know enough about how to keep my child from having an accident'. The majority of parents agreed, or strongly agreed, that 'if you are careful many accidents can be prevented'. However, parents also acknowledged that 'accidents are just part of growing-up'. Parents in group B were more likely to agree with this statement than those from group A. Parents from group B were also more likely to agree that they worried about their child having an accident but neither of these differences were statistically significant. Re-analysis of parental responses according to whether they replied to the first invitation or to subsequent reminders produced no clear trends.

PARENTAL PERCEPTION OF DANGEROUS ASPECTS OF HOME

Although the majority of parents from both groups felt confident that their home was 'as safe as it could be' (table 2), parents from group B were more likely to report that was a specific aspect of their home that gave them particular cause for concern: 44% in group B compared with 29% in group A (χ^2 $p < 0.02$, 95% confidence interval for difference = 2.6% to 26.5%).

PARENTAL KNOWLEDGE AND BEHAVIOUR

Parents were presented with 15 home safety activities and asked to indicate their usual practice—whether they always, usually, some-

times, or never, implemented the activity in question (tables 3 and 4). The level of reported safe practice varied with the activity in question. For most activities, parents in group B reported similar or safer levels of behaviour than those in group A. Significant differences were seen for only two safety behaviours—keeping children out of the kitchen while cooking and keeping medicines in a locked cupboard (Mann-Whitney U with correction for ties, Bonferroni correction for multiple comparisons $p < 0.0033$). Group A reported considerably safer behaviour for only one safety activity—keeping tobacco products out of reach—but this difference did not achieve statistical significance. As with parental attitudes, no clear trends in reported behaviour were observed between early and late responders.

PARENTAL USE OF SAFETY ITEMS

Parents were asked to name any child safety items they purchased or had been given for use in their home. The majority in both groups reported that they had acquired at least one such item. The most popular items mentioned were the same for the two groups—namely, stairgates, socket covers, cupboard locks, fire guards, and fridge locks. In both groups the largest proportion of parents reported using three child home safety items. As shown in the figure, the trend was for more parents in group B to report using fewer than three items, while only parents from group A reported using greater than seven items. This trend did not achieve statistical significance (Mann-Whitney U with correction for ties $p > 0.05$).

Table 3 Parental home safety behaviour: usual practice (% are shown in parentheses)

	Always	Usually	Sometimes	Seldom	Never	Not applicable
Medicine are kept out of reach of my child						
Group A	120 (89.6)	13 (9.7)	1 (0.7)	0	0	
Group B	108 (93.1)	8 (6.9)	0	0	0	–
Medicines are kept in a locked cupboard*						
Group A	32 (24.2)	12 (9.1)	4 (3.0)	3 (2.3)	81 (61.4)	
Group B	43 (37.4)	9 (7.8)	11 (9.6)	5 (4.3)	47 (40.8)	–
Household cleaners are kept out of reach						
Group A	81 (61.4)	24 (18.2)	11 (8.3)	5 (3.8)	11 (8.3)	
Group B	88 (76.5)	16 (13.9)	2 (1.7)	6 (5.2)	3 (2.6)	–
Household cleaners are kept in a locked cupboard						
Group A	39 (29.5)	13 (9.8)	3 (2.3)	5 (3.8)	72 (54.5)	
Group B	46 (40.4)	13 (11.4)	5 (4.4)	8 (7.0)	42 (36.8)	–
Alcohol is kept out of reach						
Group A	94 (77.0)	18 (14.7)	4 (3.3)	1 (0.8)	5 (4.1)	12
Group B	91 (88.3)	8 (7.7)	1 (1.0)	1 (1.0)	2 (1.9)	13
Cosmetics are kept out of reach						
Group A	42 (31.3)	50 (37.3)	16 (11.9)	9 (6.7)	17 (12.7)	1
Group B	47 (41.5)	31 (27.4)	15 (13.3)	9 (7.9)	11 (9.7)	0
Cigarettes/tobacco are kept out of reach						
Group A	54 (71.0)	18 (25.0)	2 (2.8)	2 (2.8)	0	58
Group B	53 (64.6)	18 (21.9)	3 (3.6)	6 (7.3)	2 (2.4)	31
Matches are kept out of reach						
Group A	76 (79.2)	16 (16.7)	1 (1.0)	2 (2.0)	0	39
Group B	75 (85.2)	9 (10.2)	2 (2.3)	2 (2.3)	0	26
My child stays out of the kitchen while I am cooking*						
Group A	19 (14.5)	39 (29.5)	30 (22.7)	29 (22.0)	15 (11.4)	10
Group B	33 (28.4)	36 (31.0)	33 (28.4)	8 (6.9)	6 (5.2)	0
I do not drink tea/coffee while my child is on my lap						
Group A	79 (58.9)	38 (28.3)	8 (6.0)	4 (3.0)	5 (3.7)	
Group B	86 (74.1)	20 (17.2)	2 (1.7)	2 (1.7)	6 (6.6)	–

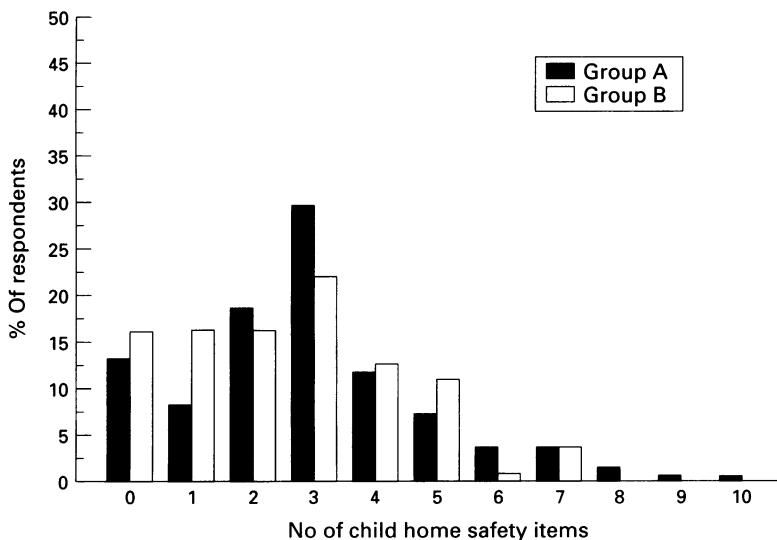
*Mann-Whitney U with correction for ties, Bonferroni correction for multiple comparisons $p < 0.0033$.

SOURCES OF SAFETY INFORMATION

Parents were asked if they had received home safety advice from a variety of different sources. The majority reported that they had received some sort of home safety advice, largely from non-health sources—family and TV/radio being most commonly cited. Only 46% (62/134) of those in group A and 52% (60/116) of those in group B reported receiving advice from their health visitor. Less than 7% of

Table 4 Parental home safety behaviour: presence of safety items (% are shown in parentheses)

	Yes	No	Don't know
The oven door has an insulated front panel			
Group A	69 (56.1)	54 (43.9)	7
Group B	64 (56.6)	49 (43.4)	0
There is a stairgate at the bottom of the stairs			
Group A	39 (40.2)	58 (59.8)	34
Group B	31 (39.2)	48 (60.7)	34
There is a stairgate at the top of the stairs			
Group A	48 (48.0)	41 (50.0)	33
Group B	52 (52.0)	41 (50.0)	32
There are locks on the windows			
Group A	100 (79.4)	26 (20.6)	7
Group B	86 (76.8)	26 (23.2)	4
Sharp corners on the furniture have been padded			
Group A	29 (24.2)	91 (75.8)	12
Group B	30 (32.2)	63 (67.7)	23



Parental use of child home safety items.

parents in either group reported receiving advice from their general practitioner.

VIEWS ON HOME SAFETY

Parents were given an opportunity to comment on how they felt the health board could help to improve child safety. The most popular suggestion from both groups was a request for better, or more freely available, education. This was requested by 45 parents in group A and 20 in group B. Parents also requested direct 'physical assistance' in the form of a home loan scheme or cost price safety equipment (14 parents in group A and 12 in group B). Other suggestions included wider publicising of accident statistics and the introduction of certain child safety features as standard in all new homes.

Discussion

The findings from this survey suggest that parents of preschool children from the most deprived parts of Lanarkshire hold similar attitudes towards injury prevention as those from more affluent areas. The only significant differences to emerge between the two groups were over their perceptions of the safety of the neighbourhood in which they lived and over the availability of money to keep their child safe. Parents from group B were also more likely to report that certain aspects of their home were particularly dangerous and gave them extra cause for concern. Such differences are, perhaps, not unexpected and may reflect the greater impact of environmental and economic factors on families from poorer backgrounds. Sparks and colleagues reported similar concerns over the safety of the home and of the surrounding area among families from relatively deprived areas of West Yorkshire.¹⁵

In the Yorkshire study, families from more deprived areas were found to be more likely to worry over their child having an accident and

reported that they found it difficult to keep their children safe. While similar trends were found in the responses from the Lanarkshire parents, these differences were not significant. It is possible that the use of an area based rather than person based measure of socioeconomic status meant that the Lanarkshire parent groups were too homogeneous to allow detection of such differences. However, the finding of significant differences in various indices of personal socioeconomic status makes this explanation less likely. Alternatively, the research tool used in Lanarkshire may not have been sensitive enough to detect such differences. Sparks and colleagues used in-depth interviews to explore parental perspectives on child safety and it is possible that the use of such qualitative techniques, in combination with the quantitative survey, would have given different results.

Parents from poorer areas of Lanarkshire also tended to report similar or safer levels of behaviour than parents from more affluent areas. Parents from group B reported significantly safer behaviour for two activities—keeping medicines in a locked cupboard and ensuring that the child stayed out of the kitchen during cooking. Parents in group A reported safer levels of behaviour in relation to keeping cigarettes/tobacco out of reach. This difference did not achieve statistical significance. Wortel and de Gues reported similar findings in their quantitative survey of mothers of preschool children in Nijmegen in the Netherlands.¹⁰

No attempt was made to assess whether respondents' reported safety behaviours were a true reflection of their actual behaviour. Thus, it is possible that parents reported safer levels of behaviour because they felt obliged to give the 'expected' or 'correct' reply. Parents in group A may have felt more confident and therefore more willing to openly report unsafe behaviour. However, this would not explain the differential rate of unsafe behaviour reported with different safety activities.

There is little information on the home safety practices of parents who did not respond to the invitation to take part in the survey. Late responders are likely to be more representative of non-responders than those who reply to the first invitation. However, comparison of early and late responders did not show any clear trends and thus, no firm conclusions could be drawn. It is likely that those parents who took part were the more 'safety aware' of those invited. Whether this would affect the comparison of safety attitudes and behaviour of groups A and B is uncertain, however, as it is unknown whether non-responders in group A differed substantially from those in group B.

If the steep social class gradient in child injuries is not due to differences in parental knowledge or practice of home safety measures, other factors, such as the physical and psychosocial environment, must be considered. Children from less affluent backgrounds may be faced with greater environmental hazards, making unintentional injuries more difficult to prevent.

Parents from group B appeared to be more conscientious over the implementation of certain safety measures, especially those 'active' measures that require little financial outlay. This may reflect a greater awareness of the hazardous nature of their home. An obvious example is the need to keep the child out of the kitchen. A mother may be far more inclined to keep her child out of a small kitchen fitted with older appliances, than out of a larger kitchen where there is space for the child to play away from the cooking activity. Why parents of lower socioeconomic status do not appear to take the same precautions with smoking material is uncertain. As expected, smoking was far more common among parents from group B than group A. It is possible that cigarettes are more accepted as normal, everyday items in the homes of families from lower socioeconomic groups and thus are not perceived to be as hazardous as in homes of families of higher socioeconomic status, where smoking is less common.

Parents from both groups were very confident of their safe keeping abilities, and indeed, for some activities, reported high levels of safety knowledge and behaviour. However, the survey also revealed that there is room for improvement, and that parents may be overestimating their level of home safety knowledge and ability. It has been suggested elsewhere that once people are secure in their own home they may develop a degree of 'complacency'—where familiar objects engender a feeling of security even if they pose a potential hazard (The role of health education in safety prevention. Health Education Board for Scotland seminar, December 1994). Thus people may fail to recognise many of the dangers that face a child in a home designed by adults for adults. This may be more relevant to parents from more affluent homes than those from poorer areas.

If parents perceive health promotion activity as merely telling them what they feel they already know, such interventions are doomed to failure. This also applies to interventions that parents perceive to be worthless or impractical. Instead, a feeling of partnership needs to be developed, where the pre-existing knowledge and abilities of parents are acknowledged, and the effect of the environment in which the individual lives, is considered.

Although similar proportions of parents in each group reported that they used some form of home safety equipment, parents in group A tended to report a greater number of items per household. Parents in group A may be more articulate in responding to the open question, and thus may be able to describe a greater number of safety items than parents in group B. Given the greater concerns over finance reported by those in group B, however, these parents may also be more limited in the range of items they are able to purchase for their home. Advice for parents on the most appropriate safety item to install, and the provision of home loan schemes, may be of value.

Parents in both groups reported that they had already received home safety advice, most frequently from non-health sources. Although

health visitors are seen as one of the main providers of child home safety advice to parents, only 46% of those in group A and 52% of those in group B reported receiving such advice from this source.

Ehiri and Watt recently questioned the role of health visitors in child home safety, reporting a survey of health visitors in the Clydebank area of Glasgow where over 90% felt that the educational approaches they used were ineffective.¹⁶ The low recall of health visitor advice by both groups of parents in this survey may be an indication that the advice was either not given, or had little impact, and that a review of their approach to home safety is needed. As Ehiri and Watt comment, health visitors are one of the few groups of health workers who have regular routine access to families in their own homes, and thus, are well placed to support parents in preventing these injuries. Reinforcement of health visitor home safety activities by other members of the primary health care team may also be valuable. If child home injuries are to be targeted effectively, however, support from outside the health sector is also needed.¹⁷

Conclusion

The findings from this study do not support the view that differences in injury experience of children from more and less affluent backgrounds are due to differences in parental attitude, knowledge, or practice of home safety measures. Thus, the study does not support the selective targeting of families from less affluent areas with educational interventions. Instead, the findings support approaches to home safety where educational strategies are complemented by environmental modifications.

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Thomas Bewick, born in 1753, became one of England's greatest artists. Early in life he showed promise (though it was not appreciated by his parents) by chalking pictures on the flagstones around the kitchen fireplace of his humble home near the River Tyne. His extraordinary talent showed itself in his woodcuts and he illustrated several significant books such as the *General History of Quadripeds* (1790) and *History of British Birds* (1804).

He seems to have enjoyed himself and indeed brought his skills to perfection in the little vignettes or 'tailpieces' which he cut to fill blank half pages in his books. These depict the countryside as he knew it, with his racy, down-to-earth humour to the fore. Each illustration is, in fact, a little 'tale' of its own.

Bewick's birthplace has now been established as a museum to commemorate this superb artist.

We think that readers will be amused to see this, and other examples of children's 'accidents' that will be reproduced in future issues.

HUGH JACKSON (with acknowledgements to Frank Atkinson *Victorian Britain: the North-East*, Newton Abbot: David & Charles, 1989)