PAPERS

Does health education prevent childhood accidents?

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Summary

In an attempt to test the assumption that health education directed at parents and children can reduce childhood accidents, a controlled study was carried out in Ely, one area of Cardiff. Using conventional health education techniques, the campaign was carried out in June and July 1981 and monitored by the numbers of injured children attending the local Accident and Emergency Department.

Comparison of accident numbers in Ely between 1980 and 1981 and between Ely and the whole of Cardiff in 1981 showed no significant change. A slight increase in trivial injuries suggested an increased willingness to attend hospital. There was no change in the age distribution of victims.

The benefits of health education and alternative methods of accident prevention are discussed and the need for further research is emphasized.

KEY WORDS: health education, childhood accidents.

Introduction

Health education has been widely applied to prevent child accidents. Common sense would make it appear self evident that it would be effective and much money has been spent on it. Despite this there have been few attempts to evaluate its benefits. In the U.S.A., two studies (Schlesinger *et al.*, 1966; Dershewitz and Williamson, 1977) have been performed, both of which failed to reduce the number of accidents presenting to medical care. However, there have been no studies in this country on this important matter. Therefore the effect of a short health education programme directed at parents and children in a community in Cardiff was studied.

Methods

The programme was devised with the help of the Home Safety Officer (MAB) and carried out during June and July 1981 in the area of Ely in Cardiff. This area has a total population of about 21,000 with a childhood (14 years and under) population of 5,670 (1980 figures based on an update of the 1978 census). The housing is mainly council estates and the social class distribution mainly 3, 4 and 5. Previous studies (Sibert, Maddocks and Brown, 1980) had demonstrated a large number of childhood accidents occurring in this area and defined the commonest injuries.

Initially a leaflet designed for the campaign was delivered to every home in the area. Pictures of common household dangers and a slogan, 'Think Safety!', were on one side with a statistic of the numbers of children suffering injuries on the other. A poster with a similar alerting slogan and illustration was placed in almost all the local shops with the kind permission of the owners. All the local General Practitioners were contacted and informed of the campaign. They agreed to have displays of Royal Society for the Prevention of Accidents (RoSPA) posters and leaflets mounted in the Health Centres. The Health Visitors met with the organizers before the campaign and agreed to visit homes they considered at risk specifically to advise parents. They were given a supply of more detailed accident prevention leaflets to distribute. Speakers (JRS, MAB, PEM) went to local youth clubs, Boy Scout and Girl Guide meetings, church groups and mother and toddler groups; 12 venues in all. Audiences were between 30 and 60 on each occasion. Lectures, illustrated when technically possible, audience participation, quiz games and informal discussions were used at the

TABLE 1. Numbers of accidents occurring in Ely in 1980 and 1981

	1980		1981	
	Control pre-education Period A (5 weeks)	Control post-education Period B (9 weeks)	Pre-education Period C (5 weeks)	Post-education Period D (9 weeks)
Grade I	35	50	27	79
Grade II	126	249	125	262
Grade III	6	21	11	13
Total	167	320	163	354
Rate of accidents/week	33.4	35.6	32.6	39.3

discretion of the presenter. All schools were visited by both the Home Safety Officer and the Road Safety Officer who gave lectures to all classes and distributed a Home Safety Work Book to each child.

Propaganda through newspapers, local radio and television was not possible as it was wished to use the rest of the city as a control to allow for seasonal and year-to-year variation.

The effects of the campaign were assessed by monitoring the numbers of children attending the Accident and Emergency Department of the Cardiff Royal Infirmary, the only department serving the area.

Figures were recorded for 5 weeks before the campaign and for 9 weeks following its onset at the beginning of June 1981. The figures were compared with those from the area in the same periods of the previous year and with the rest of the city in 1981. School holidays commenced half-way through July.

Accidents were divided into three grades of severity:

- I—Accidents not treated;
- II—Accidents treated in the A & E Department;
- III—Accidents admitted to hospital.

Results

The numbers and severity of accidents recorded at the Cardiff Royal Infirmary to children from Ely in 1980 and 1981 are shown in Table 1.

During the intervention year 1981, there was a 21% increase in accidents per week from the pre-education period C to the post-education period D. However, a corresponding increase of 6% occurred between the corresponding periods A and B of 1980 and these do not differ significantly, so that the observed increases were thought to be largely seasonal. In the same periods C and D there were 1727 and 3623 accidents respectively presenting from the rest of Cardiff. Thus comparison between accidents presenting from Ely and the rest of Cardiff in 1981 showed no significant change following our cam-

paign, with 8.6% of the pre-education accidents and 8.9% of the post-education accidents involving Ely children.

Considerably more grade I accidents were reported during period D than during period B, with the result that the distribution of severity was significantly more favourable during period D than during period B ($P < 0.05$). However, this may have come about because the figure of 50 grade I accidents during period B, or 5.6 per week, was uncharacteristically low, indeed lower than the 7 per week during period A; there was no difference in the pattern of severity between periods C and D ($P > 0.1$) nor between periods A and B ($P > 0.1$) nor indeed between the four periods ($P > 0.1$).

Analysis of the age distribution of injured children from Ely showed no significant difference between 1980 and 1981.

Discussion

There was no evidence that the Health Education campaign reduced the numbers of children attending the Accident and Emergency Department. Indeed, there was some evidence that it significantly increased the number of attendances for trivial injuries perhaps by lowering the threshold of parental anxiety. With small numbers of serious accidents, however, a significant reduction may be harder to demonstrate.

These findings are in keeping with other projects evaluating the effects of health education in accident prevention. The Rockland County Child Injury Project (Schlesinger *et al.*, 1966) commented 'The one clear conclusion that may be drawn from this study is that the incidence of medically attended injuries from accidents was not reduced during or after an educational programme directed specifically at the parents of young children.' Dershewitz and Williamson (1977) conclude 'Active health education appears to have limited effectiveness when applied to home safety'.

The failure of health education to change behav-

ious has also been shown in other fields. In the use of car seatbelts the Wessex Positive Health Team (1980) dealing with adults, showed 'No major change in the rates for occupants of front seats'.

If this study is correct, how can we prevent child accidents and is there any point in health education in this field at all?

The alternative to attempting education of the public is to adjust the environment. The potential for this has already been demonstrated by the successful use of child resistant containers (CRCs) to prevent accidental child poisoning after a systematic approach (Sibert *et al.*, 1979). This approach included pilot studies demonstrating the effectiveness of CRCs followed by more widespread introduction. There are other examples of environmental change which have proved successful including the introduction of flame-resistant nightwear to prevent burns and safety changes in bicycle design.

The study could be criticized in that it did not involve radio or television. This was necessary to provide adequate controls. Nevertheless, television campaigns have yet to be assessed in terms of accident presentations to hospital. It will be interesting to judge the effectiveness of the recent 'Play It Safe' programmes.

Health education may well have a long-term effect. However, this would be difficult to demonstrate

strate. It may change public opinion and focus attention on the size and significance of the problem of childhood accidents. Perhaps attention should be focused on educating those with power to act both locally and nationally to make the environment safe for children. Nevertheless, further resources should not be spent on health education in this field without proper evaluation and much thought.

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