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* ACCIDENTS *
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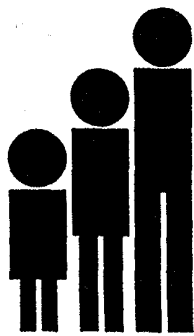
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Main Customer: Department of Health and Social Security

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NATIONAL CHILD DEVELOPMENT STUDY FOURTH FOLLOW-UP

Working Paper No 3
Preliminary Paper

ACCIDENTS

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Drafted by Ann Bowling (NB any immediate queries or
comments to Ken Fogelman)

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Introduction

1. One group of medical conditions not declining fast enough to keep pace with the general improvement in health in this country is accidents. Backet (1965) has placed accidents among the 'new epidemics' affecting the health of the industrialised world, the others being cancer, mental illnesses, heart disease and chronic illnesses such as bronchitis.
2. Few population figures are available on how many people suffer accidents (or even more than one accident). Hospital out-patient and admission figures provide limited data. Attendance at hospital may be just as much a function of non-medical factors, and it is known that some groups in the population seek treatment less readily than others (see McKinley, 1972).
3. In particular, under-utilisation of medical services by families in the lower socio-economic groups is well documented. Colman et al (1976), in a study of children with suspected poisoning, found that such families were more likely to delay seeking care until very clear evidence of poisoning occurred, whereas middle class parents tended to contact the services immediately poisoning was suspected.
4. Respondents in NCDS4 were asked only about accidents involving hospital treatment (either admitted or as an outpatient). Therefore the figures must be interpreted with care, for the reasons previously outlined above.
5. A further reason for some caution is that the tables reported here were produced before the full editing of the data was completed, so some minor modifications may prove necessary.
6. Additionally, analyses reported here are confined to those items which were pre-coded in the NCDS interview. Open-ended data, which includes more detailed information on accidents, such as type of injury, will shortly be available for analysis.
7. Accidents in NCDS
Respondents were asked whether, since their sixteenth birthday, they had been admitted to hospital or attended a hospital out-patient or casualty department as a result of any kind of accident to themselves. Table 1

shows that there was a marked sex difference in the distribution of replies. Forty-four per cent of all respondents replied that they had had such an accident: 62% of men and 26% of women. This is a similar proportion to the number of cohort members treated in hospitals for accidents between ages 11 and 16 (45%) (Fogelman, 1976). The sex difference may be an exaggeration in terms of the true distribution of all accidents by sex as surveys have found that men are more likely to attend casualty departments after having an accident, whereas women are more likely to first try and seek treatment from their GPs for injuries arising from accidents (Cartwright and Anderson, 1981).

8. The excess of male accidents may, of course, also be partly related to the different living patterns of men and women. Typically, men are more likely to engage in activities which are injurious to health, both at work and in their leisure activities (Waldron 1976): they drink more, drive faster and work in more physically hazardous occupations than women. This more dangerous life style is reflected in higher male mortality rates (OPCS, 1981). In some cases the higher proportion of males reporting accidents for which they receive treatment in hospital may also reflect the severity of the accident: women may be more likely to seek treatment for accidents from their GPs - or not at all - because their injuries are less severe.
9. When accidents treated in hospital are analysed by marital status it appears that for both sexes the separated, divorced and widowed were most likely to have such accidents (see Table 2). However, whilst married women were rather less at risk than single women, the reverse is the case for men.
10. Table 3 shows that most respondents who had experienced an accident which was treated in hospital had between one and three (86%). Only 4% had six or more.

Not only were men more likely to have had an accident involving hospital treatment but they were also more likely to have more accidents than women (see Table 3).

11. Again, the separated, widowed and divorced had more accidents than the single and married (see Table 4). In contrast to the findings of an early study by Wolff (1950), the differences in numbers of accidents between the single and married are small.
12. Most accidents since age 16 were said to have occurred when respondents were aged over 18, with about half occurring between the ages of 20 and 23. The concentration of replies in the later years may be due to recall effects. Table 5 shows respondents' age at the time of their most recent accidents.* There were no differences related to sex and marital status.
13. Table 6 shows that males were more likely than females to have accidents in work settings and females were more likely to have accidents at home. Males were also more likely to have accidents arising from playing sports. Again, these patterns reflect traditional sex role divisions in society.
14. Most accidents were treated on an out-patient basis - 87% of those reported.
15. Six per cent of those having accidents said they had a permanent disability due to the accident. There were no differences associated with sex or marital status.

. Accidents and leisure activities

16. Respondents were asked a series of questions about how they had spent their leisure time in the few weeks prior to the interview. The following tables show that those with a more outgoing social life were more likely to have had an accident. Thus, there was an inverse relationship between having had an accident and frequency of watching TV - with the exception of the group who had not watched TV at all (Table 7).
17. Tables 8-17 add general support to this overall trend although, as will be seen, the trend is not always constant within each table. It is probable that the relationships revealed in the table are associated with lifestyle and, for example, educational status. These factors will in turn be related to socio-economic status. Further analyses should allow for such interrelationships.

*It should be noted that as accidents are recorded by age rather than date, it will not always be possible in future analyses which seek to relate events to identify whether an accident occurred before or after an event, such as separation, divorce, etc., for which a date (i.e. month and year) has been recorded.

Accidents and Drinking

18. In further support of the theory linking risk-taking behaviour and accident-proneness, those who drank on most days and 1 - 2 times a week were more likely to have had an accident than others (Table 13). This relationship is not unexpected and further analyses with quantity drunk and accidents experienced are needed. The Royal College of Physicians (1979) pointed out that there is an increased risk of accidents even at levels of drinking well within the social drinking range.

19. The same report quotes one study as showing that, of 300 consecutive fatalities from unintentional injuries in a Glasgow hospital, 30% of those dying were known to be heavy drinkers or alcoholics, and that almost 50% of hospital admissions for head injuries were the result of assaults or falls while under the influence of alcohol. At the hospital studied, admissions for such injuries were currently running at about 1,000 a year. The Royal College reported further points out that intoxication contributes significantly to accidental fires and fire deaths.

Accidents and Smoking

20. NCDS respondents who were current smokers were also more likely to have had an accident since age 16 than ex or non smokers:- 49%, 44% and 38% respectively. Heavy smokers were slightly more likely than lighter smokers to have had more accidents (Table 14).

21. As those leading a more active, risk taking (e.g. gambling, sport, drinking, smoking) and less home centred life were most likely to have an accident, it is worth exploring accident proneness in terms of risk taking (cigarette smoking and the high consumption of alcohol may be similarly analysed). It would be reasonable to suppose, in this context, that family as well as individual characteristics are of relevance. How a child first learns to recognise the dangerous environment, and then to adopt 'good' risk-taking behaviour, might be a family as well as an individual matter. Here longitudinal studies are of particular value. NCDS has data on respondents' attitudes and behaviour in early and later childhood. However, previous investigations attempting to relate accident proneness to personality (neuroticism - extroversion) have not yielded consistent

results (see Pestongee & Singh, 1980). It will, however, be worthwhile in the future analysing accident proneness in relation to the earlier data on NCDS respondents in an attempt to add to this limited body of knowledge. As well as investigating personality factors earlier in life related to subsequent accident proneness, it will also be possible to examine the relationship with early measures of motor co-ordination.

Accidents and socio-economic factors

22. Accidents share the same associations, generally, as tuberculosis when it was rife - i.e. "poverty": overcrowding, slum living, poor education, and limited access to medical care (Backet, 1965). With reference to domestic accidents Backet has said:-

'In such a situation it may not be too far fetched to regard domestic accidents as taking over where the threat of tuberculosis is declining!'

23. However, among NCDS respondents the relationship between number of accidents experienced since age 16 and economic status is unclear. While men having most accidents were slightly more likely than other men to be in full-time employment, women having most accidents were less likely than other women to be in full-time employment and more likely to be either in part-time employment or unemployed (Table 15). Further analyses which take into account the place of accident and the subject's ages at the time are needed here.
24. A number of other analyses of accidents are needed including investigation of number and duration of spells of unemployment, social class, income, type of housing (and household composition), household amenities, and type of work, in order to look more fully at quality of life (working and living conditions) and accident proneness.

Accidents and Health

25. Poor health may affect performance. Unfavourable working conditions may affect both. Heat, humidity, lighting and noise level all have a demonstrable effect on performance in certain types of work (see Browne, 1961).

26. It also appears likely that mild endocrine disorders, impaired vision and headaches could be responsible for comparable reductions in efficiency. Based on police reports, the Ministry of Transport have concluded that fatal and serious accidents involve vehicle users who were ill, fatigued or physically defective in approximately 550 cases a year (although this is just under 1% of all accidents).
27. About half (51%) of NCDS respondents who said they had suffered from a fit or convulsion since the age of 16 said they had also had an accident since age 16. In comparison, fewer, 44%, of those who had not suffered from fits had experienced an accident. There was no difference between those who said their fits had been called epileptic and those who said they had not in terms of experiencing an accident. However, a difference was found here according to whether or not those having fits were under medical supervision for their attacks. Fewer, 40%, of those saying they were under medical supervision said they had experienced an accident since age 16, in comparison with 54% of those who said they were not under medical supervision for their attacks. It is possible that those under medical supervision had their attacks better controlled (by drugs) and so were less at risk of having an accident (due to an attack). Further analyses are needed longitudinally and cross-sectionally before the nature and direction of the relationship can be fully discussed. Further analyses involving number of accidents experienced are also needed. Reports of asthma and of migraine were not found to be related to accidents.

Accidents, mental health and life crises

28. While among men the more accidents experienced the more likely were they to rate on The Malaise Inventory* as having a tendency towards depression (a score of 7+), there was no clear relationship with this for women. Thus, while women were more likely to score highly on The Malaise Inventory if they had experienced between one and five accidents in comparison with those who had experienced none, the relationship was in the opposite direction for those experiencing six or more (Table 16).
29. In terms of the limited amount of data we have so far on social deprivations in childhood, more of those respondents who said at age 23 that they had ever been in care as a child, 52%, said they had experienced an accident since
- *The Malaise Inventory is a 24 item inventory developed by the Institute of Psychiatry from the Cornell Medical Index. A positive reply to each item is given a value of one, and a total score of seven or more is suggested to be indicative of 'depression'.

age 16 - in comparison with 44% of those who said they had never been in care having experienced an accident.

30. Whether or not respondents' parents were still alive was not related to accidents reported.
31. Respondents were asked about the main reason for their first move away from their familial home (parents/grandparents/relations). Those who left for negative reasons or because of the nature of their work were more likely to say they had experienced an accident since age 16 than those who said they left because they married and 40% of those leaving to begin studies had experienced an accident in comparison with 63% of those who were 'made to go', 63% of those who 'could not remain', 50% of those who left to take up a job, 48% of those who left because of poor accommodation and 46% of those who left to 'set up on their own'.
32. It is possible then that poor mental health, or negative life events may be partly responsible for some accident proneness. The relationship shown earlier between marital status and accidents (the divorced, separated and widowed were more likely to have an accident and they also had most accidents) lends some support to this theory. However, further longitudinal analyses (with dates where available) are needed before any firm conclusions can be drawn. Further analyses with whether respondents have had treatment for depression, etc. are also needed.

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Table 1 Accidents treated in hospital

<u>Accidents</u>		<u>Female</u> %	<u>Male</u> %	<u>Total</u> %
Yes	%	26	62	44
No	%	74	38	56
Uncertain		(2)	(1)	(3)
Total	100%	6223	6259	12482

Table 2 Accidents treated in hospital by sex and marital status

<u>Accidents</u>		<u>Female</u>			<u>Male</u>		
		Single	Married	Separated Divorced Widowed	Single	Married	Separated Divorced
Yes	%	30	23	34	59	65	76
No	%	70	77	66	41	35	24
Uncertain		(1)	(1)	—	—	(1)	—
Total	100%	2539	3377	307	3939	2173	147

Table 3. Number of accidents treated in hospital

Number of Accidents	Female	Male	Total
1 %	71	44	52
2 - 3 %	25	39	34
4 - 5 %	3	11	9
6 - 8 %	1	4	3
9 or more %	4	1	1
Cannot remember %	5	1	1
Total (100%)	1638	3854	5492

Table 4. Number of accidents treated in hospital by sex and marital status

Of those having an accident, number of accidents:	Single	Female			Male		
		Married	Separated Divorced Widowed	Single	Married	Separated Divorced	
1 %	71	73	66	47	42	29	
2 - 3 %	24	25	30	36	39	45	
4 - 5 %	3	2	2	11	12	14	
6 or more %	2	(2)	1	5	6	9	
Cannot remember %	(3)	(1)	1	1	1	3	
Total (100%)	764.	775	103	2332	1410	112	

Table 5 Age at time of accidents

Most recent Accidents

Age occurred	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eight	Total
16 < 18 %	20	20	22	28	29	29	35	44	22
18 < 20 %	23	29	34	32	30	31	31	20	27
20 - 23 %	57	51	44	39	41	40	34	36	51
Total Accidents (100%)	5481	2580	1333	699	374	208	110	74	10859

Table 6 Type of accident by sex

Type of accident	Female										Male					Total		
	Most recent	2	3	4	5	6	7*	8*	Total	1	2	3	4	5	6		7	8
Road pedestrian	4	4	4	3	-	-	-	-	4	2	1	1	*	-	2	1	3	2
Road driver	20	17	14	9	4	7	11	-	18	20	17	14	13	11	5	7	7	17
Work	19	20	26	29	28	40	44	33	20	31	34	33	37	38	40	52	49	33
Home	26	23	22	22	36	13	11	33	25	10	8	7	5	5	7	2	4	8
Sports	12	13	15	19	16	20	23	33	13	22	25	31	32	36	32	30	31	26
Other	19	23	19	18	16	20	11	-	20	15	15	14	13	10	14	8	6	14
Total accidents (100%)	1636	1465	172	58	25	15	9	3	2383	3841	2122	1167	650	355	199	104	75	8513

* These figures must be interpreted with caution given the small sample size.

Table 7 Accidents & Leisure : watching TV

Watched TV in last 4 weeks	Percentage who have had accident since 16	Base (100%)
5 times per week	43	8460
3-4 times per week	45	2166
1-2 times per week	46	1215
2-3 times in 4 weeks	48	397
1 in 4 weeks	52	108
Not in last 4 weeks	45	179

Table 8 Accidents & leisure : reading books etc

<u>Read books etc in the past 4 weeks</u>	Percentage who had accident since 16:	Base (100%)
5 times per week	40	2611
3 - 4 times per week	41	1315
1 - 2 times per week	44	1517
2 - 3 times in 4 weeks	48	959
1 in 4 weeks	45	1 248
Not in last 4 weeks	46	4867

Table 9 Accidents & leisure : parties etc

Frequency with which been to parties, dances or discos in past 4 weeks	Percentage who have had an accident since 16	Base (100%)
5 times per week	58	207
3 times per week	56	368
1 - 2 times per week	50	1711
2 - 3 times in 4 weeks	48	2558
1 in 4 weeks	42	2545
Not done last 4 weeks	40	5124

Table 10 Accidents and leisure : sport

Frequency with which played sport in past 4 weeks	Percentage who have had an accident since 16	Base (100%)
5 times per week	59	804
3 - 4 times per week	60	985
1 - 2 times per week	50	2212
2 - 3 times in 4 weeks	47	1153
1 in 4 weeks	41	792
Not in last 4 weeks	38	6574

Table 11 Accidents & leisure : cinema visits etc.

Frequency with which gone to cinema, theatre, opera, ballet or concert in last 4 weeks	Percentage who have had an accident since 16	Base (100%)
		100%
5 times per week	48	27
3 - 4 times per week	52	71
1 - 2 times per week	45	638
2 - 3 times in 4 weeks	46	1355
1 in 4 weeks	46	2153
Not in last 4 weeks	43	8285

Table 12 Accidents & leisure : gambling

Frequency with which gambled, played bingo, etc. in past 4 weeks	Percentage having an accident since age 16	BASE (100)
5 times per week	50	282
3 - 4 times per week	59	243
1 - 2 times per week	50	2754
2 - 3 times in 4 weeks	51	693
1 in 4 weeks	46	661
Not in last 4 weeks	41	7896

Table 13 Accidents and leisure : drinking

Frequency of drinking alcohol in past 7 weeks	Percentage having an accident since age 16	Base (100%)
Most days	59	2564
1 - 2 times per week	44	5974
Less often	38	1590
Special occasions only	30	1788
Never	36	610

Table 14 Accidents by smoking by sex

No. of cigarettes smoked daily:		Number of accidents since 16:					
		<u>None</u>		<u>One</u>		<u>Two or more</u>	
		Female	Male	Female	Male	Female	Male
1 - 9	%	19	16	25	14	16	11
10 - 19	%	42	37	40	37	39	35
20 - 29	%	33	36	31	39	34	41
30 - 39	%	4	8	3	7	8	9
40+	%	2	3	1	3	3	5
Total (100%)		1647	791	467	672	234	1020

Table 15 Number of accidents by economic status and sex

Economic status:	Number of accidents							
	0		1		2 - 5		6+	
	Female	Male	Female	Male	Female	Male	Female	Male
Full-time employed %	56	81	64	81	63	83	50	86
Part-time employed %	7	1	7	2	6	1	10	1
Full-time education %	1	3	1	4	2	2	5	2
Unemployed %	7	12	7	12	7	13	23	9
Housework %	26	1	19	* (1)	19	* (1)	14	-
Other %	2	2	2	1	3	1	-	2
Total (100%)	4491	2319	1144	1665	438	1865	22	245

* Less than 1%

Table 16. Malaise inventory score by number of accidents and sex

Malaise Index Score	Number of accidents:-							
	0		1		2 - 5		6+	
	Female %	Male %	Female %	Male %	Female %	Male %	Female %	Male %
0 - 6 % (normal)	85	95	84	95	79	92	91	86
7+ (tendency % towards 'depression')	15	5	16	5	20	8	9	14
Total (100%)	4586	2407	1170	1712	446	1895	22	66

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