

Domestic Accidents among Rural and Urban Children

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Summary

Onadeko MO. Domestic Accidents Among Rural and Urban Children in Nigeria. *Nigerian Journal of Paediatrics* 1983; 10:23. Cases of childhood domestic accidents seen at the Igbo-Ora Rural Health Centre and at the Casualty Department, University College Hospital (UCH), Ibadan, over a 12-month period were studied. Domestic accidents accounted for 51.7% and 61.9% of all types of accidents at the rural health centre and UCH, respectively. There was a male preponderance. Falls were the commonest type of accidents in both the rural and urban communities, followed by cuts, insertion of foreign objects into body orifices and burns. Conversely, there was a low incidence of poisoning. It is concluded that domestic accidents are important causes of morbidity in Nigeria. There is therefore, the need to establish an inter-disciplinary and comprehensive accident-prevention programme to control this emerging health problem.

Introduction

DOMESTIC accidents are assuming epidemic proportions throughout the world.¹ Indeed, accidental injuries in and around the home environment now rank among the ten leading causes of mortality and morbidity in children in technically developed countries.²⁻⁴ In most developing countries, the major causes of mortality and morbidity among children are parasitic infestations, communicable diseases and nutritional disorders.⁵ However, with the control of these diseases, accidents would most probably emerge as important causes of morbidity and mortality in children. The present study was undertaken to assess the magnitude of this

problem among children attending the Igbo-Ora Rural Health Centre and the University College Hospital (UCH), Ibadan, an urban city. It is hoped that this study will generate public awareness of this important health problem.

Materials and Methods

The available case records of all accidents in children, aged between birth and 14 years, for the period, January to December 1976, seen at the Igbo-Ora rural health centre, situated about 80 kilometres from Ibadan, were collected. From these records, information on age, sex, type of accident and place of accident was abstracted and analysed. Similar analysis was made on case records from accident cases in children seen at the Casualty Department, UCH, Ibadan, during the same 12-month period. The statistical significance was assessed by using the chi square (X^2) test.

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Results

Igbo-Ora Rural Health Centre

In this rural area, there were 205 accidents of which 106 (51.7%) occurred at home. Seventy-two (67.9%) of the 106 cases were males, whilst 34 (32.1%) were females, but the difference was not statistically significant ($p > 0.30$; Table I). Accidental falls within and around the home environment accounted for 78 (73.6%) of the 106 cases. The types of accidents and the age distribution of the cases are presented in Table II. Thirty-four (43.6%) of the falls occurred in children, aged 5-9 years. Cuts were the next type of domestic accidents, occurring in 12 (11.3%) of the children, 11 of whom were aged between 5 and 14 years. There were eight cases (7.6%) of accidents due to insertion of foreign objects into various body orifices and children aged, 1-4 years old were most commonly affected. Burns from open cooking fire and hot oil spillage accounted for seven (6.6%) of the accidents and occurred mostly among children in the age group 5-9 years. There was 1 case (0.5%) of sodium hydroxide (caustic soda) poisoning in a 14-year old child.

TABLE I

Types of Domestic Accidents and Sex Distribution in 106 Children at Igbo-Ora Rural Health Centre

Type of Accident	Sex		Total No. of Cases	% of Total
	Male	Female		
Falls	55	23	78	73.6
Cuts	7	5	12	11.3
Foreign object into body orifices	5	3	8	7.6
Burns	4	3	7	6.6
Poisoning	1	—	1	0.9
Total	72	34	106	100.0

$$X^2 = 0.89 \text{ on } 1 \text{ d.f. } 0.50 > p > 0.30$$

TABLE II

Types of Domestic Accidents and Age Distribution in 106 Children at Igbo-Ora Rural Health Centre

Type of Accident	Age (years)				Total
	1	1-4	5-9	10-14	
Falls	2	23	34	19	78
Cuts	—	1	5	6	12
Foreign objects into body orifices	—	6	2	—	8
Burns	—	2	4	1	7
Poisoning	—	—	—	1	1
Total	2	32	45	27	106

University College Hospital, Ibadan.

Out of a total of 4,666 accidental injuries including road traffic accidents, 2,888 (61.9%) were domestic accidents. One thousand, eight hundred and six (62.5%) of these 2,888 victims were males whilst 1,082 (37.5%) were females; ($p < 0.001$; Table III). The types of accidents and the age distribution of the cases are shown in Table IV. Falls were the commonest accidents, occurring in 1,645 (57.0%) of the children, followed by cuts, foreign objects, burns and poisoning. Cuts on the body surfaces were due to broken bottles, razor blades, knives etc. These cuts featured most prominently among children, aged 5-9 years. There were 192 (41.7%) cases in this age group, followed by 143 cases (31.0%) in the age group, 10-14 years and 120 cases (26.0%) in the age group, 1-4 years. Insertion of foreign objects into body orifices was the third common type of accident, accounting for 403 (13.9%) of all the cases recorded. Ears and nostrils were the orifices most commonly affected as were the cases in the rural area. Two hundred and fifty-one (62.3%) of all the cases of abnormal insertions occurred in the age group, 1-4 years. Articles accidentally inserted into body orifices included beads, beans, groundnuts

TABLE III

Types of Domestic Accidents and Sex Distribution in 2,888 Children seen at the Casualty Department, UCH, Ibadan

Type of Accident	Sex		Total No. of Cases	% of Total
	Male	Female		
Falls	1,066	579	1,645	57.0
Cuts	315	146	461	15.9
Foreign objects into body orifices	213	190	403	13.9
Burns	183	148	331	11.5
Poisoning	29	19	48	1.7
Total	1,806	1,082	2,888	100.0

$X^2 = 13.62$ on 1 d.f. $p < 0.001$

TABLE IV

Types of Domestic Accidents and Age Distribution in 2,888 Children seen at the Casualty Department, UCH, Ibadan

Types of Accidents	Age (years)				Total
	1	1-4	5-9	10-14	
Falls	110	835	581	119	1,645
Cuts	6	120	192	143	461
Foreign objects into body orifices	12	251	125	15	403
Burns	31	189	64	47	331
Poisoning	5	38	4	1	48
Total	164	1,433	966	325	2,888

and pieces of blackboard chalk. Burns from open fire, hot water and hot oil accounted for 331 (11.5%) of the cases and involved 189 (57.1%) children in the age group, 1-4 years.

Accidental poisoning occurred in 48 (1.7%) children. The types of poisons and the age distribution of the victims are shown in Table V. Thirty-nine (79.2%) of the 48 cases were aged,

1-4 years. Paraffin (kerosine) was the commonest poison, accounting for 24 (50%) cases while drugs (iron tablets, salicylates, diazepam etc) accounted for 10 (20.8%) cases. Poisoning with disinfectants occurred in 8 (16.7%) cases, whilst sodium hydroxide (caustic soda) accounted for 4 (8.3%) cases. The remaining two cases of poisoning were due to a locally distilled gin (*ogogoro*) and a raticide.

TABLE V

Types of Poisoning Substances and Age Distribution in 48 Children

Substance	Age (years)				Total
	1	1-4	5-9	10-14	
Paraffin (Kerosine)	—	23	1	—	24
Pills (Iron Salicylates Diazepam etc.)	4	5	1	—	10
Household Commodities (Detergents, disinfectants etc.)	—	8	—	—	8
Sodium Hydroxide (Caustic Soda)	—	—	1	3	4
Locally distilled Gin (Ogogoro)	—	1	—	—	1
Raticide	—	1	—	—	1
Total	4	38	3	3	48

Discussion

In the present study, domestic accidents accounted for 51.7% of all the accidents in children in a rural health centre over the period under review. Similarly, among children in the city of Ibadan, domestic accidents occurred in 61.9% of all accidents seen at the UCH. Ebong,⁶ has observed that children form a significantly higher proportion of traffic accident victims in Ibadan compared with reports from developed nations. Thus, in both rural and urban communities in Nigeria, domestic as well as accidents outside the home are serious causes of morbidity in children.

The pattern of accidents in the present study is similar to those reported from other parts of the world.^{4 7 8} Age appears to be an important dominant factor in the epidemiology of domestic accidents.⁹ In the present series, children aged, 1-4 years were proportionally more susceptible to domestic accidents than the other age groups in the urban area. In contrast, the older children (5-9 years) were proportionally, more susceptible to accidents in the rural areas. This comparison however, assumes that the distribution of these age groups is the same in both populations. That toddlers were less susceptible to accidents in the rural areas than in the urban areas is not surprising; it may be explained by the fact that babies and toddlers are traditionally carried on their mothers' backs in the rural areas, and this practice affords them better protection against accidents.

In the present study, males were significantly affected more frequently than females in the urban area. This was particularly so with respect to falls and cuts. This sex differentiation is similar to the findings of Murdock⁴ in the United Kingdom, but differs from that in India where both sexes were equally affected.⁷ Male preponderance over the female, is probably due to the personal characteristics of boys who are usually more daring, active and adventurous than girls; hence they are more at risk of accidental injuries.

Falls were the commonest cause of domestic accidents in the present study, followed by cuts. This finding is similar to those of other workers.^{7 10} However, it differs from those of Murdock⁴ Kimati⁸ and Illingworth.¹¹ Murdock⁴ reported that cuts were the commonest causes of domestic accidents in Norwich, United Kingdom, whilst Illingworth¹¹ from the same country found accidental poisoning to be particularly common in a series of emergency admissions. Kimati⁸ also identified poisoning as the most predominant cause of domestic accidents in Tanzania.

The insertion of foreign objects into body orifices was the next common cause of domestic

accidents in this series. In both the urban and the rural areas, the children tended to insert foreign bodies into the ears and the nostrils rather than swallow them. This is in contrast to the swallowing of foreign objects by children elsewhere.^{4 8}

The percentage of cases caused by burns (11.5% in the urban and 6.6% in the rural areas) in the present series was much lower than the 24.3% in India⁷ and the 24% in Tanzania,⁸ presumably because in many Nigerian rural areas, cooking is done at the backyard of the homes.

Accidental poisoning in this series was relatively minor as a cause of domestic accidents accounting for less than 1% of the cases in the rural area and 1.7% of the cases in UCH. In contrast, cases of poisoning reported elsewhere are higher; for example, Murdock⁴ from Britain, and Kimati⁸ from Tanzania found that 16.9% and 35.6% respectively, of domestic accident cases were due to accidental poisoning. The few cases of poisoning in this urban series mainly involved male toddlers who appeared to have had easy access to unprotected containers of paraffin (kerosine) and drugs, particularly iron tablets, salicylates and diazepam. Kerosine, the commonest poison in this urban series has also been reported to be a common poisoning substance in urban areas elsewhere.^{8 12} It is noteworthy that there was no case of pesticide poisoning in this series. It may be speculated however, that with increasing industrialization and widespread use of pesticides in agriculture, poisoning with these substances will increase.

The control and prevention of domestic accidents require a comprehensive approach which should include health education, improvement of the physical environment of children and the enactment and enforcement of appropriate regulations and laws. The public should be made aware of the magnitude of the problem, the various contributory factors and how best they could be minimised. Research in appropriate technology for the prevention of domestic accidents should also be encouraged. Drug

manufacturers, for example, should use containers with child-resistant opening devices.¹³ Manufacturers of kitchen gadgets and household equipments, architects and engineers should co-ordinate with health workers to achieve safer home environment for children.

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