



Medicolegal Childhood Deaths in Benin City, Nigeria

Décès de la petite enfance médico-légaux au Bénin City, au Nigeria

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ABSTRACT

BACKGROUND: Children under the age of 15 years constitute over 40% of the population in developing countries of the world including Nigeria. Deaths in this age group also contribute over 40% of total mortality in the general population; a significant proportion of these deaths is of medicolegal importance.

OBJECTIVE: The purpose of this study was to describe the frequency and pattern of medicolegal deaths during childhood period.

METHODS: The study was a retrospective analysis of all autopsies performed in children less than 15 years of age by the Police Pathologist attached to the Police Medical Unit in Benin City between January 1998 and December 2002. We analysed the deaths by age, sex, and circumstance of death.

RESULTS: Ninety-four medicolegal deaths occurred in children under 15 years of age during the period under review. Eighty (85.1%) were sudden unnatural deaths (SUDs) while 14 (14.9%) were sudden unexpected natural deaths (SUNDS). Causes of SUDs were accidents 72 (90%), homicides seven (8.8%) and suicide one (1.2%). The major causes of SUNDS were infections seven (50%) and haemodynamic disorders three (21.5%).

CONCLUSION: Preventable accidental deaths make up most of the medicolegal childhood deaths in our environment. These deaths can be reduced if adequate measures backed up by favourable government policies are put in place. *WAJM* 2011; 30(6): 413-416.

Keywords: Childhood, deaths, medico-legal, Benin City, Nigeria.

RÉSUMÉ

CONTEXTE: Les enfants de moins de 15 ans constituent plus de 40% de la population dans les pays en développement du monde, y compris le Nigeria. Décès dans ce groupe d'âge contribue également plus de 40% de la mortalité totale dans la population générale, une proportion importante de ces décès est d'une importance médico-légale.

OBJECTIF: Le but de cette étude était de décrire la fréquence et le mode de décès médico-légaux pendant la période de l'enfance.

MÉTHODES: L'étude était une analyse rétrospective de toutes les autopsies pratiquées chez les enfants de moins de 15 ans par le pathologiste de la police attachée à l'unité de police médicale dans la ville de Bénin entre Janvier 1998 et Décembre 2002. Nous avons analysé les décès par âge, sexe, et les circonstances de la mort.

RÉSULTATS: Quarante-vingt-quatre décès médico-légaux survenus chez des enfants de moins de 15 ans au cours de la période sous revue. Quarante-vingt (85,1%) étaient morts subites d'origine naturelle (TUS), tandis que 14 (14,9%) étaient soudains et imprévus, les morts naturelles (SunDS). Causes de mort étaient des accidents 72 (90%), les homicides de sept (8,8%) et le suicide d'un (1,2%). Les principales causes de SunDS étaient les infections sept (50%) et les troubles hémodynamiques trois (21,5%).

CONCLUSION: évitables des décès accidentels représentent la plupart des décès d'enfants médico-légaux dans notre environnement. Ces décès peuvent être réduits si les mesures adéquates soutenues par des politiques gouvernementales favorables sont mis en place. *WAJM* 2011; 30 (6): 413-416.

Mots-clés: Enfance, les décès, médico-légaux, la ville de Bénin, au Nigeria.

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Abbreviations: RTA, Road traffic accident; SUDs, Sudden unnatural deaths; SUNDS, Sudden unexpected natural deaths.

INTRODUCTION

Children under the age of 15 years constitute over 40% of the population in developing countries of the world including Nigeria.^{1,2} Mortality in this age group also contributes over 40% of total mortality in the general population.³ Although causes of death during the childhood period are numerous and vary from one age group to another as well as from place to place, deaths from violent causes such as accidents, homicides, and suicides are a principal cause of death in childhood.⁴ Indeed, accident is the leading cause of childhood death in developed countries.^{5,6} Although infections and malnutrition remain the bane of childhood in third world countries, accidental deaths also are beginning to contribute significantly to total childhood deaths.^{3,7} The rage to litigate' which has long been noted in developed countries of the world like America,⁸ is becoming common in our environment. Medicolegal childhood deaths therefore, are important public health problems which require attention more so as over 90% of childhood deaths, in the world occur in third world countries.^{9,10}

To our knowledge no study has been reported previously in Benin City on the patterns of medicolegal childhood deaths. This study was therefore carried out to document the frequency and patterns of medicolegal deaths during the childhood period as found by the Police Medical Unit in Benin City, Nigeria. It is hoped that findings from this study will help government formulate policies that will reduce such preventable deaths among children.

SUBJECTS, MATERIALS, AND METHODS

The materials for the study were the post mortem records of autopsies done on children less than 15 years of age by the Police Pathologist attached to the Police Medical Unit in Benin City between January 1998 and December 2002. These autopsies were done in different morgues in Benin City and environs but mostly in the state owned Central Hospital, Benin City. The autopsies were coroner-ordered based on reports made by various complainants to

the Police. In each case, full autopsy was performed. The cases in children were identified and separated from the medicolegal autopsy ledger and analyzed with respect to age, sex, and circumstance of death.

RESULTS

A total 771 medico-legal autopsies were carried out over the 5-year period of January 1998 – December 2002. Children under 15 years of age made up 94 (12.2%) cases. Their ages ranged from five days to 14 years with a mean age of 10.2 ± 3.1 years. The male to female ratio was 1.8:1 made up of 60 (63.8%) males and 34 (36.2%) females.

Table 1 shows the distribution of the various circumstances of death by sex. The commonest indication for medicolegal autopsies in this study was sudden unnatural death (SUD) which constituted 80(85.1%) cases. Fifty-two (65%) cases occurred in males as against 28(35%) in females giving an M: F ratio of 1.8:1. Sudden unexpected natural deaths (SUNDS) constituted 14 (14.9%) cases,

8(57.1%) in males and 6(42.9%) in females. Of the SUDs, accidents made up 72 (90%) cases and occurred in 48 (66.7%) males and 24 (33.3%) female. Homicides accounted for 7(8.8%) cases and these occurred in three (42.9%) males and four (57.1%) females. Six were murder cases: four occurred during interpersonal violence; one during armed robbery while the last was a case of ritual murder with vital body parts missing. Suicide by hanging was responsible for one (1.2%) of the SUDs.

Table 2 summarises the distribution of the various causes of accidental deaths in children. The number of accidental deaths increased with advancing age with 8(11.1%), 11(15.3%), and 53(73.6%) cases in the 0–4 years, 5–9 years, and 10–14 year age groups respectively. The age range of children involved in accidental deaths was five days to 14 years with a mean of 10.3 ± 2.9 years. The M: F ratio was 1.8:1 with males making up 46 (63.9%) cases and females 26 (36.1%) cases. Road Traffic Accidents (RTA) made up 53(73.6%) of the accidental

Table 1: Distribution of Childhood Medico-Legal Deaths by Sex and Circumstance

Circumstance	Number (%)		
	Male	Female	Total
SUD	52(65.0)	28(35.0)	80(85.1)
Accidents	48(66.7)	24(33.3)	72(90.0)
Homicides	3(42.9)	4(57.1)	7(8.8)
Suicides	1(100.0)	–(0.0)	1(1.2)
SUND	8(57.1)	6(42.9)	14(14.9)
Total	60(63.8)	34(36.2)	94(100.0)

SUDs, Sudden Unexpected Deaths; SUNDS, Sudden Unexpected Natural Deaths

Table 2: Distribution of Accidental Deaths by Age and Sex

Type of Accident	Number (%)			
	0 – 4	5 – 9	10 – 14	Total
Age (Years)	M : F	M : F	M : F	M : F
RTA	3 : 0	3 : 5	23 : 19	29 : 24
Drowning	2 : 0	2 : 0	5 : 0	9 : 0
Items fall on victim	1 : 0	0 : 0	2 : 1	3 : 1
Burns	0 : 0	1 : 0	1 : 0	2 : 0
Electrocution	1 : 0	0 : 0	0 : 1	1 : 1
Suffocation	0 : 0	0 : 0	1 : 0	1 : 0
Traumatic delivery	1 : 0	0 : 0	0 : 0	1 : 0
Total	8 : 0	6 : 5	32 : 21	46 : 26

RTA = Road Traffic Accident

Table 3: Distribution of Sudden Unexpected Natural Deaths by Age and Cause

Cause	Age Group in Years			Total
	0 – 4	5 – 9	10 – 14	
Infections	4	1	2	7
Haemodynamic	1	–	2	3
GIT	–	–	2	2
CNS	–	–	1	1
Unidentified	1	–	–	1
Total	6	1	7	14

GIT, Gastrointestinal tract; NS, Nervous system; values are number of cases.

deaths making it the most important circumstance of death. The number of cases increased with advancing age as three (5.7%), eight (15.1%), and 42 (79.2%) occurred in the age group 0–4, 5–9 and 10–14 years respectively. Males were slightly more affected than females (M: F = 1.2:1). Pedestrians made up 80% of the RTA victims.

Drowning was next to RTA as a cause of accidental deaths in children. Nine (12.5%) cases were recorded in this study and all the cases occurred in males. Two cases each occurred in the 0–4 year and 5–9 years age groups and five in the 10–14 year age group. All the cases occurred in the home environment with all the children falling into wells except one which drowned in a soak away pit. Four (5.5%) of the accidental deaths were caused by items falling on victims. The items that caused the death of the children included house roof, wall, log in the saw mill and wood in the bush.

Other causes of accidental death in this study included two (2.8%) cases of electrocution, two (2.8%) cases of accidental burns and one (1.4%) case each of suffocation, which occurred in a religious crusade ground, and neonatal death caused by intracranial haemorrhage secondary to traumatic delivery. In one instance of electrocution, the victim stepped on a fallen high tension cable while in the other, the victim was vandalising high tension cable when he got electrocuted.

Table 3 shows the distribution by age of causes of sudden unexpected natural deaths (SUNDS). The ages of involved children ranged from one year to 14 years with a mean of 7.8 ± 3.9 years. Infections were the most common cause

of death being responsible for seven (50%) cases. The implicated infections were malaria and bronchopneumonia. Three (21.5%) cases were due to haemodynamic disturbances which included anaemia and anaphylactic shock. Gastrointestinal disorders caused two SUNDS during the period under review. Both were cases of intestinal obstruction with peritonitis. Status epilepticus was responsible for one (7.1%) case of SUNDS. In one case, the cause of death could not be identified because of severe decomposition.

DISCUSSION

A total of 94 cases were seen over the five-year period under review. This represents 12.2% of cases of medicolegal autopsies performed by the Police Medical Unit during the study period. Similar figures were reported by Etebu and Ekere¹¹ in Port Harcourt Nigeria. This is however at variance with findings by Mandong¹² in North Central Nigeria where as high as 29% of all medicolegal autopsies were performed in children. The Northern part of the country is predominantly Moslem. There is still the belief in some sections that autopsies desecrate the body which is against some of religious injunctions. The autopsy rate in this part of the country is therefore lower than in the South and our figures may be more reflective of the true situation in Nigeria than the Northern figures. The M: F ratio of 1.8: 1 obtained in this study is also in consonance with reports by other workers.^{13,14}

Sudden Unexpected Natural Deaths

As much as 85.1% of all autopsies reviewed were due to SUNDS while the rest

(14.9%) were SUNDS. The causes of SUNDS as found in this study were accidents (90%), homicides (8.8%) and suicide (1.2%). In an earlier study by Aligbe *et al*¹⁵ however, no case of suicide was found as all the SUNDS cases were due to accidents and homicides. That suicide is beginning to contribute to SUNDS in children is probably a reflection of the increasing socioeconomic stresses in our environment and westernisation of our society. It has long been noted that suicides are rare in Africans.¹⁶

Accidental Deaths

Accidents accounted for approximately 90% of all SUNDS with the number of cases increasing with advancing age and males being affected almost as twice as females. Reports from studies in western countries show that although accidents is the commonest cause of SUNDS, it is however most common in preschool children.⁴ Aligbe *et al* also observed that the incidence of accident increased with advancing age among Nigerian children. Although no reasons were given for this finding, factors contributing to this trend may include the fact that in our environment, child neglect and abuse increases as the child grows. The male preponderance of accidental deaths can be attributed to the adventuresome nature of males but may also be a reflection of the fact that males are more neglected and abused. The economic realities in Nigeria may force the children to take to adult activities to fend for themselves.

The most important cause of accident in children was RTA being responsible for approximately three-quarters of cases. Ninety-four per cent of cases occurred among school-age children with approximately 80% being recorded in the 10–14 year age group. Eighty percent of the children were pedestrians. These findings agree with reports by previous workers.^{4,12,15} It is particularly of interest to note that 80% of the RTA victims were pedestrians. This is not surprising as many of our children are in the streets either trying to cater for themselves or engaged by parents in hawking or street trading. Many school children who ought to be parentally monitored on their way to and from

school are seen trying to cross our ever busy roads with heavy vehicular traffic and impatient drivers sitting behind the steering. This further corroborates the fact that our children are neglected and strengthens the need for the child right act to protect them from forces that militate against their existence.

It has been previously observed that a substantial part of childhood injuries and death occurs in the home and immediate surroundings.⁴ All cases of drowning, three of the four cases of items falling on victims, and all cases of burns and electrocution occurred at home or its immediate surroundings. This is rather unfortunate as the homes, a place where an environment of highest safety and support is expected to be provided for the child, has become places of high risk for childhood injuries and death. All cases of drowning in the series by Aligbe *et al*¹⁵ as well as in ours occurred in males. Reasons for this male preponderance of drowning are not clear but these may not be unconnected with daring nature of this gender. The fact that in one case of electrocution, the child engaged in criminal activities of vandalising a public utility is an ominous sign that our children are being engaged in crime from an early age.

One case of suffocation which occurred in a religious crusade ground was recorded in this study. This represents only a small portion of accidental deaths of all medicolegal autopsies. It is important to note, however, that the risk is on the increase as indexed by the ever increasing number of religious bodies and religious gatherings, the increasing level of poverty and the high cost of medical care which is partly responsible for our people's preference of spiritual solutions in religious gatherings to their medical problems. This kind of accidental death may therefore reach calamitous levels if adequate measures are not put in place to prevent such occurrence.

Sudden Unexpected Natural Death

Sudden Unexpected Natural Death contributed only 14.9% of the medico-

legal deaths reviewed in this study. Twenty percent of cases in the series by Aligbe *et al* and is about 8% of cases in the series by Cekin *et al* were due to SUND. In this series infections caused 50% of SUNDs. Infections, generally are the leading cause of childhood death in our environment.³ It is also the leading cause of SUNDs among children in Turkey.⁴ In contrast to the study by Aligbe *et al*¹⁵ in which posterior urethral valve with chronic renal failure was a leading cause of SUND, no case was found in this series. It is not surprising that haemodynamic disorders (anaemia and shock) contributed 21.5% of SUND in this study. This is because disorders like malnutrition, infections, and infestations, common causes of haemodynamic disorders abound in our environment. Gastrointestinal and nervous disorders which contributed 14.3% and of SUNDs respectively, were also among the common causes of SUNDs in the study by Cekin *et al*. In one case (7.1%) of SUND in this study, the cause of death could not be identified. In the study by Aligbe *et al*,¹⁵ 4.1% and as much as 28.6% of SUNDs cases in the series by Cekin *et al*,⁴ anatomic cause of death could not be identified. No case of sudden infant death was noted in our study.

Conclusion

Childhood deaths, especially the unnatural ones, are a threat to human existence. It is therefore of utmost importance that national policies be developed and enforced to protect children against neglect and abuse. Childhood injury prevention committees should be set up, and training programmes to inform parents of potential hazards at home and environs should be conducted regularly all with the aim of reducing these preventable childhood deaths.

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