

Pattern of Unnatural Death among Females in Niger Delta: A Retrospective Medicolegal Study

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Abstract

Background: Unnatural death among women is rarely emphasized but an important public health index of the community and society. **Objective:** The objective is to study the epidemiologic profile of unnatural death among females using autopsy data. **Design:** This is a 14-year descriptive retrospective study of all female unnatural death victims within Warri and its neighboring communities subjected to medicolegal autopsy. **Materials and Methods:** Information on age as well as manner and method of death were extracted from the autopsy report of the cases and subsequently analyzed using Microsoft Office Excel 2007. **Results:** Ninety-six females were examined in this study, representing 9.9% of the 975 medicolegal performed and 11.4% of the 805 unnatural deaths encountered during the study period. The age range is 1–70 years and the mean age is 29.82 years. These cases represent a mean annual incidence of about seven cases. The peak incidence of unnatural death occurred in the third decade (27.1%), followed by the fourth (19.8%) and fifth (15.6%) decades, respectively. The peak incidence for homicide and accidental deaths is in the third and fourth decades, respectively. Firearm-related death is the leading method of homicide accounting for 24 (53.3%) of the 45 homicide deaths. The use of blunt and sharp weapons each accounts for 10 (22.2%) of the cases. Road traffic accident (RTA) accounts for 28 cases, representing 59.6% of accidental deaths and 29.1% of unnatural deaths. Burns and drowning are the second and third leading causes of accidental death accounting for 11 (23.4%) and 3 (6.4%) of the accidental deaths. Four cases of suicide were encountered with three deaths as a result of ingestion of chemical poisons, while the fourth case was by hanging using rope. **Conclusion:** The study showed that unnatural deaths in women are mainly accidental, homicidal, and suicidal representing 49.0%, 46.0%, and 4.2% of the cases respectively. RTA, burns, drowning, and poisoning (in descending order) are the major causes of accidental deaths. Firearm, sharp, and blunt injuries (in descending order) are the major methods of executing homicides. The peak age for unnatural death is in the third decade with 75% of the death clustering within the 2nd–4th decade. Education, accident consciousness, parental supervision, and implementation of appropriate policy measures are paramount to reducing such death.

Keywords: Accident, firearm, homicide, injuries, suicide, unnatural death

INTRODUCTION

Unnatural death refers to category of death considered by coroner or medical examiner as not arising from diseases or normal aging process. Such deaths occur prematurely against the course of nature and result from the triad of homicide, accident, and suicide.^[1]

Unnatural deaths tend to reflect the law and order situation in a particular jurisdiction.^[2] Where such indices are low, it implies that the environment is peaceful and harmonious and is an indication of security of life and property.^[3] It is also one of the indicators of social and mental health and overall a public health indicators of the society.^[4]

While global trend shows that it is generally more prevalent among the males,^[5] death of females, especially mothers, has serious social, economic, mental, and psychological consequences on the family members and community.^[6,7] Besides, gender inequality, domestic violence and burns related deaths appear to be more common among females.^[7,8]

In developing countries like ours where vital registrations are poor and death occurs commonly outside the health-care

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facility, medicolegal autopsy remains an important vital tool for studying unnatural death.^[9] The present work is aimed at studying unnatural death among females in Warri, Delta state, Nigeria, using autopsy database. We hope that findings from this study will improve the understanding of the risk factors and guide government in policy prevention strategies.

MATERIALS AND METHODS

The city of Warri doubles as an oil exploration town and the commercial capital of Delta state and therefore a preferred residency to many.

The study is a 14-year descriptive retrospective study of all cases of female unnatural death brought in for postmortem examination in Warri and its surrounding communities from January 1, 2003, to December 31, 2016.

The age, method, and manner of death were extracted from their autopsy reports and further analyzed with Microsoft Office Excel 2013. The results are further summarized in tables.

Patients with incomplete records or inconclusive cause of death were excluded from the study.

The ethical approval for this study was granted by the Research and Ethical Committee of Central Hospital, Warri (reference CHW/ECC VOL1/124).

RESULTS

Ninety-six females were examined in this study, representing 9.9% of the 975 medicolegal autopsies performed and 11.4% of the 805 of the unnatural deaths encountered during the study period. The age range is 1–70 years and the mean age is 29.82 years.

The yearly distribution of the unnatural deaths is shown in Table 1 with a range of 3–11 cases per annum and a mean annual incidence of about 7 cases.

The age distribution of cases is shown in Table 2. The peak incidence of unnatural death occurred in the third decade (27.1%), followed by the fourth (19.8%) and fifth (15.6%) decades, respectively. The peak incidence for homicide and accidental deaths is in the third and fourth decades, respectively.

The pattern of homicides is shown in Table 3. The age range of the homicide victims is 12–68 years and the mean age is 32.89 years. Firearms is the most common method of homicide accounting for 24 (53.3%) of the 45 homicide deaths. The use of blunt and sharp weapons each accounts for 10 (22.2%) of the cases.

The pattern of accidental death in this study is shown in Table 4. Their mean age and the age range (in years) are 29.34 years and 1–70 years respectively. Road traffic accident (RTA) accounts for 28 cases, representing 59.6% of accidental deaths and 29.1% of unnatural deaths. Burns and drowning are the second

Table 1: Yearly distribution of unnatural death among female autopsies

Year	Homicide	Accident	Suicide	Total (%)
2003	0	4	0	4 (4.2)
2004	3	3	0	6 (6.2)
2005	1	6	1	8 (8.3)
2006	0	3	0	3 (3.1)
2007	5	3	0	8 (8.3)
2008	3	6	2	11 (11.5)
2009	7	1	0	8 (8.3)
2010	1	2	0	3 (3.1)
2011	3	4	1	8 (8.3)
2012	1	2	0	3 (3.1)
2013	7	1	0	8 (8.3)
2014	7	4	0	11 (11.5)
2015	5	5	0	10 (10.4)
2016	2	3	0	5 (5.2)
Total	45	47	4	96 (100)

Table 2: Age distribution of female autopsies

Age	Homicide	Accident	Suicide	Total
0–9		9 (19.1)		9 (9.4)
10–19	4 (8.9)	6 (12.8)	2 (5.0)	12 (12.5)
20–29	20 (44.5)	5 (10.6)	1 (2.5)	26 (27.1)
30–39	4 (8.9)	15 (31.9)		19 (19.8)
40–49	10 (22.2)	5 (10.6)		15 (15.6)
50–59	5 (11.1)	3 (6.4)		8 (8.3)
60–69	2 (4.5)	3 (6.4)	1 (2.5)	6 (6.3)
70–79		1 (2.1)		1 (1.0)
Total	45 (100)	47 (100)	4 (100)	96 (100)

and third leading causes of accidental deaths representing 11 (23.4%) and 3 (6.4%) of such cases respectively.

Four of the deaths were suicide cases. In three cases, it was committed by using fast-acting poisons. The fourth case involved applying a ligature round the neck. The detail is shown in Figure 1.

DISCUSSION

In this scientific investigation, 96 female autopsy cases were examined, accounting for 9.9% of medicolegal deaths in this series. This relatively gender discrepancy in unintentional and violent injury-related mortality may be attributed to the difference in risk exposure and risk-taking behavior across both genders.^[5] Interestingly, it speaks volume of the overall poor involvement of women in the economic landscape of sub-Saharan Africa.^[10] Relatively less number of accidental cases are reported to the coroner^[11] resulting in overall low-rate medicolegal autopsy rate among females. We are of the opinion that since it is a patriarchal society, there is a sociocultural tendency to overprotect the female gender, leading to an inherent tendency to report more male death cases to the coroner for investigation than female cases. The

Table 3: Pattern of homicides among female autopsies

Age	Asphyxia suffocation (%)	Blunt force (%)	Firearm injury (%)	Sharp force (%)	Total (%)
10-19		2 (20)	2 (8.3)		4 (8.9)
20-29		3 (30)	11 (45.8)	6 (60.0)	20 (44.5)
30-39	1 (100)	1 (10)	2 (8.3)		4 (8.9)
40-49		2 (20)	6 (25.0)	2 (20.0)	10 (22.2)
50-59		2 (20)	2 (8.3)	1 (10.0)	5 (11.1)
60-69			1 (4.2)	1 (10.0)	2 (4.4)
Total	1 (100)	10 (100)	24	10 (100)	45 (100)

Table 4: Pattern of accidental death among female autopsies

Age	RTA (%)	Burns	Drowning	CO poisoning	Household poisons	Fall	Total (%)
0-9	4 (14.3)		1 (33.3)	1 (50.0)	2 (100)	1 (100)	9 (19.2)
10-19	2 (7.1)	2 (18.2)	2 (66.3)				6 (12.8)
20-29	2 (7.1)	3 (27.3)					5 (10.6)
30-39	8 (28.6)	6 (54.6)		1 (50.0)			15 (31.9)
40-49	5 (17.9)						5 (10.6)
50-59	3 (10.7)						3 (6.4)
60-69	3 (10.7)						3 (6.4)
70-79	1 (3.6)						1 (2.1)
Total	28 (100)	11 (100)	3 (100)	2 (100)	2 (100)	1 (100)	47 (100)

RTA: Road traffic accident, CO: Carbon monoxide

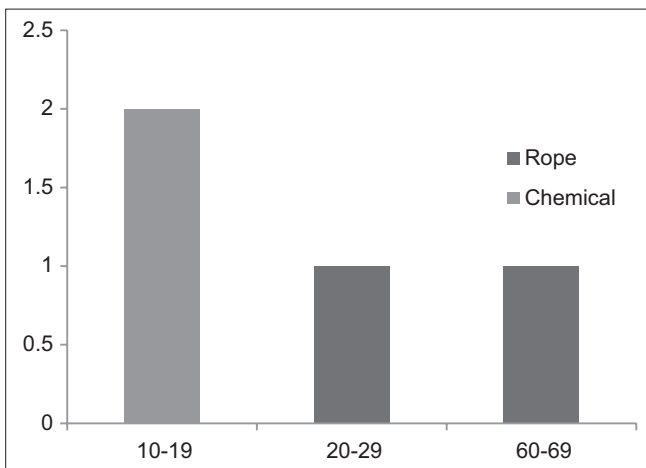


Figure 1: Methods of executing suicide among females

incidence in this region is, however, lower than those reported in Port Harcourt,^[12] Benin city,^[13] and Ibadan^[14] (all in Nigeria) where female deaths constituted 24.2%, 34.6%, and 37.0% of medicolegal autopsies, respectively.

The peak age for female unnatural deaths was at the third decade, representing 27.1% of the cases, with 75% of the cases clustered within the second and fourth decades. This parallels the peak age of physical and entrepreneurial activity in males.^[15] This age also spans through the reproductive age and therefore may be partly related to exposure to intimate partner and domestic violence. Boy/girl or marital relationship is usually such that the women are usually much younger than their male partners, accounting for power inequality and consequent female gender vulnerability subSahara Africa.^[16]

One of the features of this research is the paucity of cases of unnatural death in the first decade.

We think that such cases are unlikely to be reported to the corner for medical examination since such decisions are to be taken by an adult who perceives such death as a taboo.^[17] However, despite the masking effect provided by the attitude of adults, we are of the opinion that infanticide, child kidnapping, abduction, abuse, ritual killing are not uncommon occurrence in this environment. It is also reasonable to believe that with the inherent vulnerability of children to accidental injuries, and the present state of our health-care response to injured victims, that accidental death in children has potentially high fatality.^[18] This opinion is supported by a study by Viner *et al.* which rated sub-Saharan Africa as having the one of the highest rates of child homicide globally.^[19] Similarly, Akhiwu *et al.*, in Benin, reported that death among females under the age of 10 years accounted for 4.2% of the medicolegal deaths in Benin city.^[13] These deaths result from complex interplay of factors including genetic predisposition, environmental factors, parental factors, poor risk assessment, and curiosity.^[20] Earlier studies in this region has seriously blamed lapses in parental supervision.^[13] Punishment of such parents should be passed into law as a deterrent for others.

The report showed that accidental death represents the most common, whereas suicide death is least common manner of death. The major burden of accidental deaths is as a result of RTA which represents the single overall most common cause of death in this study. These victims are mostly pedestrians and passengers as the use of women as commercial motorcycle or vehicle drivers, conductors, or road haulage workers is still

unpopular in West Africa. The high rate of RTA in West Africa is attributed to deteriorating road network, unworthy cars driven by miscreants, the use of motorbikes as major means of transport, disobedience to safety rules, and lax safety regulating officials.^[21] Banning of the use of motorbikes will not only reduce RTA rate but also will reduce rate of homicide-related deaths in major cities of the country since it has also provided an efficient and flexible transportation means for hoodlums.^[22]

Another observation in this study is that unnatural death among females was caused mostly by firearms, accounting for 53% of homicide deaths and 25% of female unnatural deaths. This is in contrast with earlier reports that showed that females are more often killed with blunt and sharp weapons.^[23] We also observed a peak age of firearm homicide in the third decade which parallel peak age for youthful life. The relatively high firearm-related mortality is in line with the inherent high morbidity associated with firearm injuries, aggravated by the deplorable state of the health sector.^[21] This is also a reflection of gun availability which is silently gaining an epidemic magnitude. Illicit arm deals, porous borders, inadequate border protection, arms distribution to thugs by politicians, security sector black marketeering and rentals, local manufacturing, local arm production, rising trend of armed robbery and kidnapping, Niger Delta militancy, cult and gang membership, and herder terrorism are major underlying factors.^[24] Firearm and knife legislation must be enforced to check this ugly trend. There is, however, research gap in identifying the perpetrators which call for further study.

Burn death is mainly accidental and homicidal in this study. Accidental death cases include seven kerosene stoves and two gas cooker-related accidents, whereas homicidal deaths resulted from two fatal acid baths. The peak age was in the fourth decade. The use of adulterated cooking fuel is a common observation in this region and may be responsible for such cases.^[25] The traditional role of woman as family cook specifically predisposes them to such hazards. There is a need to have a preventive program through a more in-depth research on the underlying risk factors. The lack of burn intensive care unit as well as lack of well-trained staff to manage difficult cases in this region is an important factor to the fatality of burn injury. Better architectural design of the kitchen will reduce risk of kitchen fire accidents.

Drowning has been observed as uncommon causes of death, a reminder that it is still a public health issue in developing country, with all cases involving children. Such drowning arises from poor parental supervision of children and from the use of water as major means of transport in this region. There is a need to focus prevention strategy on parents, caretakers, and the home environment and the need for bystander resuscitation.^[26]

Carbon monoxide poisoning death was observed in two cases. We also think that this is a tip of the iceberg because people often die in droves in the country as a result of this poisonous colorless, odorless, and tasteless gas.^[27] Major sources at home

include use of charcoal to generate heat and generators as source of electricity.^[27,28] With increasing urbanization and the use of generators as source of electricity in the backdrop of epileptic power supply, such cases will continue to abound. Public education, improving design of home, and the use of carbon monoxide detectors are the key to preventing further recurrence.

Two cases of accidental chemical poisoning were reported in this scientific data. Accidental poisoning has been known as a common cause of morbidity and mortality in children, usually attributed to their inherent impulsive and curious nature.^[29] As a rule, all drugs, chemicals, and poisons should be kept out of the reach of children to prevent such occurrence.

The rarity of suicide among females in this study is in line with the general incidence in the country. This is probably because of the patriarchal nature of the society that tends to place the burden of running home on the males.^[26] However, the few cases may not be unrelated to mental illness. We also observed that most cases are due to ingestion of drugs. This is because women are generally less impulsive in their actions and are more likely to use methods that are neither immediately lethal nor disfiguring.^[30]

CONCLUSION

The study showed that unnatural deaths in women consists of accidental, homicidal, and suicidal representing 49.0%, 46.0%, and 4.2% of the cases respectively. RTA, burns, drowning, and poisoning (in descending order) are the major causes of accidental deaths. Firearm, sharp, and blunt injuries (in descending order) are the major methods of executing homicides. The peak age for unnatural death is in the third decade with 75% of the death clustering within the 2nd-4th decade. Education, accident consciousness, parental supervision, and implementation of appropriate policy measures are paramount to reducing such death.

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Conflicts of interest

There are no conflicts of interest.

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