

Forensic aspects of unnatural death in children

Kesanee Jongprasartsuk*

Werasak Charaschisri**

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- Objective** : *This study is a review of the causes of unnatural death among children for future prevention, statistics and medico-legal benefit.*
- Setting** : *Department of Forensic Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok*
- Study design** : *Descriptive study.*
- Subjects and Methods** : *One hundred and one autopsy reports of unnatural death in children under 15 years old from 2001 to 2007 by forensic pathologists of the Department of Forensic Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok.*
- Results** : *Sixty-eight were male and 33 were female. The most common age is ranged from 1 to 3 years old. Accident, especially traffic accident, was the most common cause of unnatural death in children followed by drowning and fall from height, while homicide, suicide and death by animal attack were rare.*

* Department of Forensic Medicine, Faculty of Medicine, Chulalongkorn University

** Division of Forensic Medicine, Faculty of Medicine, Srinakharinwirot University, Ongkarak, Nakornnayok, Thailand

Conclusions : *Most of the autopsy reports in unnatural death in children were kindergarten, male more than female. The major cause of death is accident, especially traffic accident which could have be prevented by their own guardian parents.*

Keywords : *Unnatural death in children.*

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Chulalongkorn University, Bangkok 10330, Thailand.

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- วัตถุประสงค์** : เพื่อศึกษาถึงสาเหตุการเสียชีวิตในเด็กที่อายุต่ำกว่า 15 ปี ที่ตายผิดธรรมชาติ และได้รับการชันสูตรพลิกศพแล้วว่าไม่ได้เสียชีวิตจากโรคต่าง ๆ เพื่อเป็นแนวทางในการป้องกันการเสียชีวิตในเด็กวัยดังกล่าว และเป็นประโยชน์ในทางสถิติและทางกฎหมายการแพทย์
- สถานที่ทำการศึกษา** : ศูนย์อำนวยการชันสูตรพลิกศพ ภาควิชานิติเวชศาสตร์ คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
- รูปแบบการวิจัย** : การศึกษาเชิงพรรณนา
- กรณีศึกษาและวิธีการศึกษา** : ศึกษาและเก็บข้อมูลจากรายงานการชันสูตรพลิกศพ และใบรับรองการตายในกลุ่มเด็กที่เสียชีวิตผิดธรรมชาติจำนวน 101 ราย กรณีศึกษาที่อายุไม่เกิน 15 ปี และได้รับการชันสูตรพลิกศพโดยแพทย์นิติเวชประจำศูนย์อำนวยการชันสูตรพลิกศพ คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ตั้งแต่ปี พ.ศ. 2544 ถึง ปีพ.ศ. 2550
- ผลการศึกษา** : พบว่าเป็นเพศชาย 68 ราย เป็นเพศหญิง 33 ราย กลุ่มอายุที่พบมากที่สุดคือกลุ่มอายุ 1 - 3 ปี และสาเหตุการเสียชีวิตที่มากที่สุดคือ จากอุบัติเหตุ โดยเฉพาะอุบัติเหตุจากรถ ร่องลงมาคือ การเสียชีวิตจากการจมน้ำ และการตกจากที่สูงตามลำดับ ในขณะที่การเสียชีวิตจากการถูกทำร้าย การฆ่าตัวตาย หรือถูกสัตว์ทำร้ายตายพบในอัตราส่วนที่น้อยกว่ามาก
- วิจารณ์และสรุป** : จากรายงานการชันสูตรพลิกศพทั้งหมด พบว่าจำนวนเพศชายมากกว่าจำนวนเพศหญิงในทุกสาเหตุการเสียชีวิต และกลุ่มอายุ 1 - 3 ปีเป็นกลุ่มอายุที่พบมากที่สุดเกือบทุกสาเหตุการตาย
- คำสำคัญ** : เสียชีวิตผิดธรรมชาติในเด็ก

Death of a child is always sadness of the family, especially when its cause is unnatural cause of death that can be prevented. One hundred and one cases of unnatural death in children under 15 years old were retrospectively studied at the Department of Forensic Medicine, Faculty of Medicine, Chulalongkorn University from 2001 to 2007. The aim of this study is to provide data on the causes of death among these children for future prevention and medico-legal benefit. ⁽¹⁾

Materials and Method

The 101 autopsies cases were performed at the Department of Forensic Medicine, Faculty of Medicine, Chulalongkorn University. All cases were children under 15 years old and classified into 6 groups by age, namely : kindergarten (1 - 3 years), preschool (4 - 6 years), junior elementary school (7 - 9 years), elementary school (10 - 12 years) and junior high school (13 - 15 years old).

Result

1. The distribution of sex in each age group

There were 68 males and 33 females: 101 cases in total. In the kindergarten group, 23 were male and 12 were female; 17 males and 8 females in the preschool group. 9 males and 3 females in the junior elementary school group. In the elementary school group were 7 males, 3 females; and 12 males, 7 females in the junior high school (Table 1).

2. The manner of death

The unnatural deaths in this study were grouped into 4 types of the manner of death, namely: accident, homicide, suicide and death by animal attack (Table 2).

Table 1. Gender and age groups of the 101 cases of unnatural death in children.

	Male (n)	Female (n)	Total (n)	M:F
1 - 3 years ⁴	23	12	35	1.9:1
- 6 years ⁷	17	8	25	2.1:1
- 9 years	9	3	12	3:1
10 - 12 years	7	3	10	2.3:1
13 - 15 years	12	7	19	1.7:1
Total	68	33	101	2:1

Table 2. Manner of death in 101 cases.

Manner of death	Male (n)	Female (n)	Total (n)	M:F
Accident	58	31	89	1.9:1
Homicide	6	1	7	6:1
Suicide	2	2	4	
Death by animal attack	1	0	1	1:1:0
Total	67	34	101	1.9:1

3. Cause of death by accident

The accident group was divided in 6 subgroups, namely: traffic accident, fall from height, drowning, burn, electrical injury and blast injury (Table 3).

4. Cause of death by homicide

There were 7 cases of homicide in this study; 4 were deaths by blunt-force injury and 3 were deaths by gunshot (Table 4).

5. Cause of death by suicide

The only 4 cases of suicide in this study were death by hanging (Table 5).

Table 3. Causes of death according to the types of accident.

Type of accident	Male (n)	Female (n)	Total (n)	M:F
Traffic accident	22	18	40	1.2:1
Fall from height	10	3	13	3.3:1
Drowning	17	6	23	2.8:1
Burn	3	3	6	1:1
Electrical injury	3	1	4	3:1
Blast injury	1	0	1	1:0
etc	2	0	2	2:0
Total	58	31	89	1.9:1

Table 4. Cause of death by homicide.

Homicide	Male (n)	Female (n)	Total (n)	M:F
Blunt force injury				
Firearm injury	33	10	43	3:13:0
Total	6	1	7	6:1

Table 5. Cause of death by suicide.

Suicide	Male (n)	Female (n)	Total (n)	M:F
Hanging	2	2	4	1:1
Total	2	2	4	1:1

6. Cause of death by animal attack

Death by animal attack was the least common manner of death in this study. Attack by dog was reported in this study (Table 6).

7. Number of unnatural death, according to the year

The number of cases were highest in 2005, and lowest in 2004. (Table 7).

Table 6. Cause of death by animal attack.

Animal attack	Male (n)	Female (n)	Total (n)	M:F
Dog	1	0	1	1:0
Total	1	0	1	1:0

8. Difference of age groups in each kind of accident and others

Kindergarten age group was the most common group in this study, following by preschool age group. (Table 8).

Discussion

In this study of 101 cases, the unnatural causes of death in children were totally different according to their gender and age groups. The study presented 68 males and 33 females; the ratio male to female was 2:1 and there are more male than female in every age group. The biggest age group was 1 - 3 years old, the number was 35 cases. The most common cause of unnatural death was accident (89 cases) especially traffic accident (40 cases). Most accidents happened in kindergarten age group (1 - 3 years). According to this age group, they were children in the age that trying to walk motivated by curiosity to know such a new thing in their life and too young too ask for help. ⁽²⁾ So, most accidents occur in this age. In the category of accident, death by traffic accident was most common number in this study followed by drowning. Struck by truck is the major death in traffic accident and again mostly in 1-3 years group, who were trying to learn to walk. ^(2,3) So, they might be walking outside their living place and caused traffic accident. On the other hand,

Table 7. Number of unnatural death, according to the year.

Manner of death	Years							Total
	01	02	03	04	05	06	07	
Accident	13	18	9	4	25	8	12	89
Homicide	1	3	1	0	0	0	2	7
Suicide	0	3	1	0	0	0	0	4
Death by animal attack	0	0	0	0	1	0	0	1
Total	14	24	11	4	26	8	14	101

Table 8. Distribution of age group in each cause and manner of unnatural death.

Type	Age (years)	1 - 3	4 - 6	7 - 9	10 - 12	13 - 15	Total
	Traffic accident		15	9	2	3	11
Fall from height		6	5	0	0	2	13
Drowning		8	5	4	5	1	23
Burn		1	2	3	0	0	6
Electrical injury		2	1	0	0	1	4
Blast injury		0	0	0	0	1	1
Homicide		1	3	2	0	1	7
Suicide		0	0	0	2	2	4
Death by animal attack		1	0	0	0	0	1
Etc		2	0	0	0	0	2
Total		36	25	11	10	19	101

motorcycle accident is the most common in the junior high school children. Drowning is the second most common cause of death by accident; mostly detected in the kindergarten age group. In this age group also, the accident took place at their home such as in a bath tub.⁽⁴⁾ Other interesting type of accidental death is fall from height⁽⁵⁾ and burn, both types were also found mostly in 1 – 3 years age group.

In the only 7 cases of homicide, all of them were killed by their parents. Most of the homicide

cases were body assaults; the least common of this group is death by firearm injury. Suicide in this study was identified only 4 cases all of which were hanging; two were males and two were females, and they were in 10 - 15 age group. The fewest type of unnatural death in this study was death by animal attack, only 1 case was dead by dog attack. The incidence of unnatural dead cases were not related to each years in this study.

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