

**MATERNAL KNOWLEDGE AND ATTITUDE  
REGARDING THE PREVENTION OF CHILD INJURIES  
AT HOME IN HOANKIEM DISTRICT  
AND DONGANH DISTRICT, VIETNAM**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF PRIMARY HEALTH CARE MANAGEMENT  
FACULTY OF GRADUATE STUDIES  
MAHIDOL UNIVERSITY  
2010**

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Thesis  
entitled

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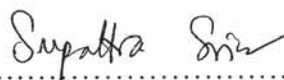
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for the degree of Master of Primary Health Care Management

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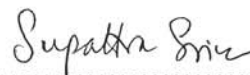
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ABSTRACT

A cross-sectional descriptive study was conducted to compare the differences in knowledge and attitude of mothers regarding the prevention of child injuries at home in Hoankiem urban district and Donganh rural district, Vietnam.

Two hundred eighty three mothers were selected randomly and interviewed by structured questionnaire during January 2010. Statistical descriptive analysis was used and tested by Chi square test. The age of the mothers ranged from 24 to 47 years old. In the urban district, more than a half of the mothers had high income (more than 2,000,000 VND), and in the rural district, nearly a half of mothers had moderate income (1,000,000-1,990,000 VND). There was a significant difference in the knowledge of mothers between the two districts, p-value = 0.000. In the urban district, 28.17% of mothers had good knowledge, 19.01% had moderate knowledge and 52.82% had low knowledge. In the rural district, 37.59% had good knowledge, 40.43% had moderate knowledge and 21.99% had low knowledge. However, there was no significant difference in mothers' attitude between two districts, p-value=0.905.

The study's recommendation is that the mass media can be used as a reminder to draw attention to the home child injury problem.

KEY WORDS : MATERNAL KNOWLEDGE / MATERNAL ATTITUDE /  
PREVENTION / HOME INJURY / CHILD INJURY

111 pages

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## LIST OF ABBREVIATIONS



KAP	:	Knowledge- Attitude- Perception
HBM	:	Health Belief Model
SD	:	Standard Deviation
UNICEF	:	United Nation International Child's Emergency Fund
VMIS	:	Vietnam Multi-center Injury Survey
VND	:	Vietnam Dong
WHO	:	World Health Organization

## **CHAPTER I**

### **INTRODUCTION**

#### **1.1 Rationale and Justification**

Injuries of all kinds are responsible worldwide for more than 16,000 deaths daily. For every death, many others live with varying degrees and durations of disability and pain (1). Many people think child safety is just common sense, but how can that be if the information is not common knowledge? (2). For children worldwide, injuries are the leading cause of death and a major cause of morbidity. Every year, millions of children all over the world die from preventable causes. Injuries are an important contributor. For children, unintentional injuries are a significant health threat (3). According to World Health Organization (WHO) in 2005, around 875,000 children under the age of 18 years died as the result of an injury every year. This means that every day thousands of families lose their children to injury and thousands of children have to learn how to cope with the consequences of their injuries, which can be long – lasting and profound (4).

Prevention of child and adolescent injuries can substantially reduce the cost burden on the public health system. The cost of many interventions is often much lower than the overall cost of the consequences of injury (4). Every year, in the United States, at least 600,000 children are hospitalized, about 16 million are treated in emergency rooms, and permanently disabled due to injury are more than 30,000 children (3). Similarly in Australia 60,000 children are hospitalized and 350 children under the age of 14 years and approximately 50% of these deaths were caused by injuries (5). In Europe, child injuries accounting for 3.1 death per 10,000 children per year (75,000 deaths in 2001). Most home injuries involving children are caused by falls from heights, burns and scalds, and poisonings (4).

In 2005, WHO indicated that 98 % of all child deaths by injuries occurred in low- and middle income countries. The rate of these deaths is five time higher than in higher income countries. The link between economic prosperity and child health is well established; in poor families, children are considerably more likely to sustain an injury than their more affluent counterparts are (4). Home is the place where most fatal injuries occur to infants and the elderly (6). At home, children are at a high risk of falls from beds, furniture, sometimes through windows, and rails on corridors of multi storey buildings (7). About risks of home child injury, parents are unaware about the scope of the child injuries, and do not routinely think about their children is day-to-day activities in terms of injury risks (8).

## 1.2 Child injuries in Vietnam

Although injury has now been recognized as an important public health problem, there is little experience in dealing with this problem in developing countries such as Vietnam, Lao, Thailand, and Indonesia (7). Every year, about 20,000 children in these countries die from drowning, falls, burns and others causes. In Indonesia, the available literature indicates that 56% of all children who are between 5 and 14 years of age die because of injuries (9). Nearly 6000 Thai children die from injuries each year, this is more than 16 children every day. Every year, about 1600 children are left disabled from injuries. Then, for every disabled child, another 10 spend at least ten days hospitalized, 37 spend between one and nine days in hospital, and 88 miss at least three days of school or work (10).

In Vietnam, the mortality rate from injuries 10.7% of all deaths. Unintentional accidents accounted for 92% of injuries (1). Children comprise 45% of the population, so child injuries impose a major burden on society. Childhood is a developmental stage and has its own unique epidemiology. Because children's health provides the foundation for adult health in later years, it is important to prevent health problems during childhood. Almost 75% of child deaths were caused by injuries. The fatal child injury rate was 82.3/ 100,000 (11).

In 2001, in Vietnam, over 27,000 children died of injuries, or 1 child death from injury every twenty minutes, and 74 children death each day (12). In 2002, WHO suggested that child injuries were responsible for 36% of all deaths in children and the leading causes on non-fatal injury in Vietnam were falls, animal bites, burns, unsafe playgrounds and unsafe houses (13). A study in 6 provinces of the injury patterns in Vietnam in children under 18 years old showed that the ratio for falls was 1.559/100,000, animals bites: 816/ 100,000, by sharp objects: 419/ 100,000 and for burn was about 324/ 100,000. When considering the injury statistics of children age 5 to 9 years in rural areas in 2005, it was found that the morbidity rate was 5.343 per 100,000 per populations. This research also showed that 52.3% injuries occurred at home, 20% on the way to or from home, and 9.4% at school (11).

A UNICEF study in Vietnam in 2003 showed that children were living in poverty, and those living in the poorest income areas were at the greatest risk of injury (12). Nowadays, most of children stay with family members like parents, grandparents and their brothers, sisters. In families with more than one child, parents may let the older siblings take care of younger ones and feel assured that there is someone to look after their children. In families with more than 2 children, parents may not be able to take sufficient care of each and everyone of them, sometimes parents leave them home alone, so it is more likely for injuries to occur. A study about the knowledge of parents about preventing injuries to children at home in 3 provinces, representing the 3 regions of Vietnam ( North, South and Centre ) showed that the knowledge of parents was very low and only 40% of the respondents thought that falls were the most common cause of injury in the home, 34% recognized burning and 33% recognized sharp objects as top causes of home injuries. Almost every house in these areas had a child injured (9). However, most parents thought that only traffic accidents caused serious injuries. As a result, parents had a good knowledge of road safety and a poor knowledge of home safety.

Because urban and rural areas have different characteristics and residents reflect differences in socio- economic status, this study has been proposed. Hanoi is the capital of Vietnam, situated in Red River Delta. It is the political, economic and cultural centre of the country. Hoankiem is an urban district of Hanoi. Most of the largest Vietnamese public corporations and bank headquarters are located here. Donganh is one of 18 rural districts of Hanoi. When considering the injury statistics of children aged 5 to 9 years old in another province in 2005, it was found that the injuries rate was 5.343 per 100,000 head of population (11). Donganh district also had the same characteristic of socio- demographics as other rural area. .

Injury has impacts on primary school children. Some injured children have to live with the morbidity for the rest of their lives, and this could affect their living or prevent them from taking care of themselves. Injuries happen in unsafe areas in, or around the home, because it is the environment in which they spend most of their time. Knowledge, attitude serves as an educational diagnosis of the community. Knowledge and attitude studies tell us what people know about certain things, how they feel and how they behave (15). In this study, the knowledge possessed by the respondent refers to their understanding regarding the prevention of injury to children at home. As mothers are the primary caregivers of children, it is necessary to learn more about knowledge, attitudes and behaviours toward child safety. Moreover, parents can cause danger to children if they lack responsibility, are careless, or do not know children's development and nature.

From the discussion presented above, this study aims to determine the differences in knowledge and attitude between families, especially mothers in rural and urban area of Hanoi city.

### **1.3 Research questions**

What is the knowledge and attitude of the mothers with children aged 5 to 9 years old regarding the prevention of child injuries at home? Do people who are living in different settings, in rural and urban areas, have differences in such knowledge and attitude?

### **1.4 Research objectives**

#### **1.4.1 General objective**

To reveal the knowledge and attitude of the mothers regarding the prevention of injuries to children aged 5 to 9 years old at home in the rural and urban areas.

#### **1.4.2 Specific objectives**

1. To describe the socio- demographic characteristic variables of mothers of children aged 5 to 9 years old.
2. To ascertain the maternal knowledge regarding the prevention of injuries to children aged 5 to 9 years old at home.
3. To describe the attitude of mothers regarding the prevention of injuries with children 5 to 9 years old.
4. To investigate the information sources regarding the prevention of child injuries at home.
5. To identify the difference in maternal knowledge and attitude regarding the prevention of child injuries at home in the rural and urban areas.



## 1.6 Operational definition of variables

**1.6.1 Socio-demographic of mothers:** refers to socio-demographic characteristics and general characteristics of individuals such as gender, age, educational level, occupation and monthly mother's income.

**Age:** refers the date of birth of a respondent who participated in this study in complete years.

**Marital status:** means whether a mother was unmarried, married, divorced or widowed.

**Education** refers to the highest level of education attained by a respondent.

**Occupation** refers to the occupation of a respondent. Occupation can be classified as farmer, government employee, teacher or laborer.

**Family income:** refers to the amount of money a respondent can earn or receive monthly from all sources.

**Type of family:** nuclear family: family with one generation: parent with children. Extended family: family with two generations: grandparent, parent with children.

**Number of children** in the family refers to the number of children who live in the same family.

**1.6.2 Knowledge regarding home child injury:** means the general understanding of a respondent about the types of injury such as: burns, falls, sharp object, electrical, environment factors and about how to preventive them incurred by children aged 5 to 9 years old.

Home child injury in this study is damage or harm caused to the structure or function of the body of children in his or her home, which maybe physical or chemical, and either accidental or intentional. The "home injury" definition includes all unintentional injuries that occur at home, in backyard, or apartment building courtyards (10).

**1.6.3 Attitude:** means an opinion or general feeling of a respondent regarding the home injuries, which may occur to children aged 5 to 9 years old.

**Attitude regarding home injury hazard:** mothers identified significant hazards for their own children in term of home injury.

**Attitude regarding benefits of home injury prevention:** are applied to respective aggregation of all gains and cost benefit of actually engaging in the preventive behaviour.

**Attitude regarding barriers to preventing injuries to children:** contrary to the attitude of barrier here it means, the burden and lack of profit received by one engaging in the prevention behaviour.

**1.6.4 Sources of information:** refer to determine where the mothers of children get the information of home child injury from health personal, friend, family members, health volunteer or mass media.

**1.6.5 Rural area:** area that had dominant rural characteristics, not far from business community by main roads, often with low population density, and residents pursuing agricultural activities. In this study, Donganh district represents an rural setting.

**1.6.6 Urban area:** area that had dominant urban characteristics, higher population density and vast human features in comparison to areas surrounding it. Residents worked either in industrial estates or agricultural fields. Hoankiem district represents an urban setting.

## **1.7 Limitation of the study**

The areas selected to this study may not represent other rural and urban regions. This study only focuses on knowledge, attitudes, socio-economic factors, and social support. Other factors that influence the prevalence of child injuries in the home need more time and financial resources to examine.

## **CHAPTER II**

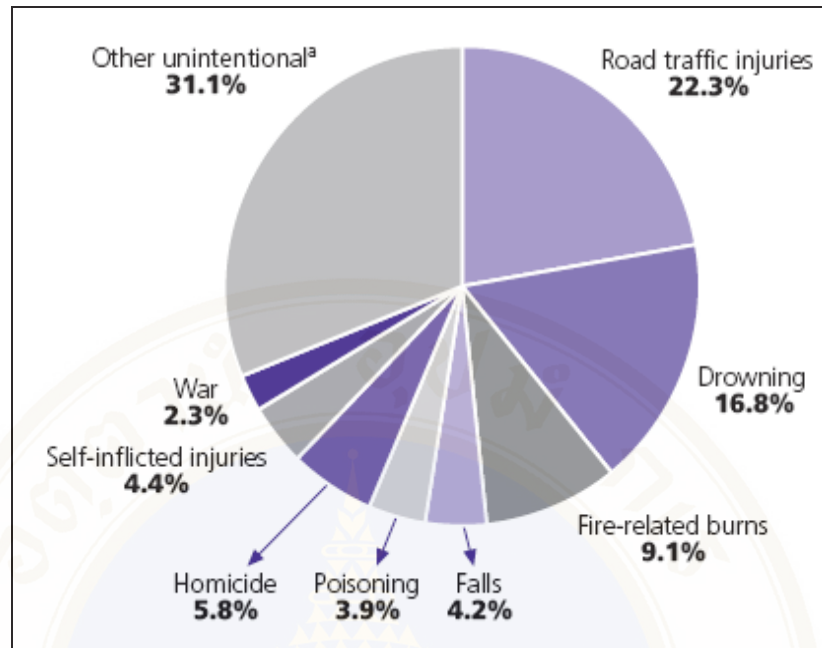
### **LITERATURE REVIEW**

#### **2.1 Global situation of home child injuries**

Nowadays, childhood injuries are a growing global public health problem. All over the world every year, hundreds of thousands of children die from injuries or violence, and millions others suffer the consequences of non-fatal injuries. Mainly injury could have been prevented, but every day more than 2000 children and teenagers die from injuries. Unintentional injuries account for almost 90% of these cases. For every one of these children who dies, several thousand victims of injury or violence live with varying degrees of disability or psychological scarring (16).

Not only in the developing countries, but in all developed nations, injury is the principal cause of child death, accounting for almost 40 % of deaths in the age group 1 to 14 years. In the industrialized countries, the top four places in the league table of child injury deaths are Sweden, the United Kingdom, Italy and the Netherlands with child injury death rates below 7 per 100,000. At the bottom of the league are the United States and Portugal, where the child injury death rates are 14.1 and 17.8 respectively, more than twice the level of the leading countries. More important than all of these calculations are, in every family, the loss of a child is worst nightmare, but a nightmare that becomes a daily reality for more than 20,000 families every year in the industrialized world (17).

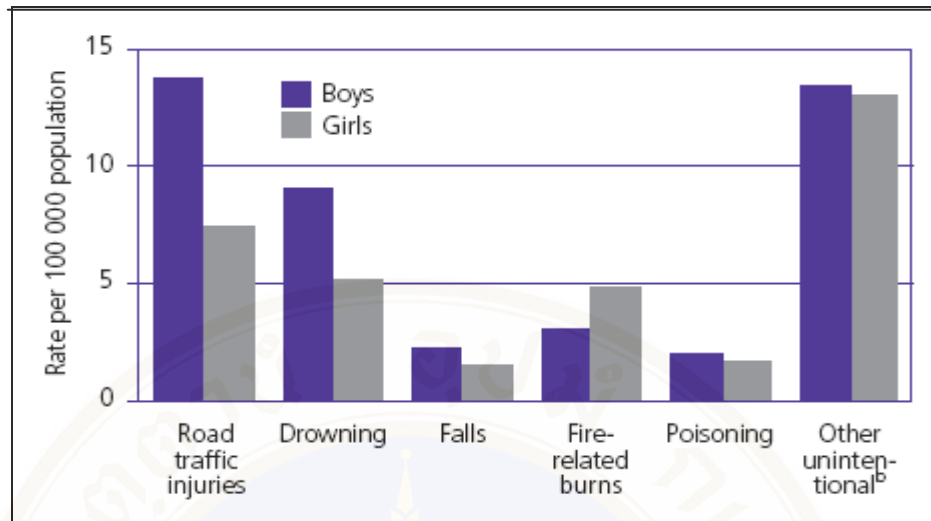
A world report on child injury prevention showed that, children are exposed to hazards and risks as they go about their daily lives, and everywhere are vulnerable to the same types of injury. In addition to the deaths, tens of millions of children require hospital care for nonfatal injuries; many of them are left with some form of disability, often with lifelong consequences (16).



**Figure 2.1** Distribution of global injury mortality by cause, 2004

**Source:** WHO, Global Burden of Disease (2004)

Figure 2.1 shows that the majority of child injuries were the result of road traffic accidents, drowning, burns, falls or poisoning. These five categories are classified as unintentional injuries. Other unintentional injuries, includes choking, animal or snakebites, hyperthermia, smothering, also a significant proportion, accounts for 23% of childhood deaths. Falls in this figure accounted for 4.2% of home child injuries. According to a WHO study, child injuries death rates for children 1 year olds and for children aged 1-4 years old are the same for males and females. But children 5 to 9 years have different rates of home child injury, and the death rates for boys are a third higher than girl death rates (16). This maybe because male children are more naughty and active than female children. In 2001, in the United States, unintentional injuries resulted in the deaths of 1.283 children aged 5 to 9 years (8).



**Figure 2.2** Unintentional child injury death rates by cause and sex, 2004

**Source:** WHO, UNICEF (2008)

Figure 2 shows that, for most types of injuries, boys have higher injury death rates than girls. A study on the risk of unintentional injury among young children showed that, they suffered the following types of injuries: falls (50.4%), burns (22.8%), poisonings (16.0%) and choking (10.8%). Of the 177 falls, 104 (58.8%) involved stairs, 7 (4.0%) involved baby walkers, 14 (7.9%) were from changing tables, and one (0.6%) was through an open window; the cause was not specified for 51 (28.8%). Of the 80 burn injuries, 8 were due to exposure to hot tap water (10.0%), 27 to hot liquids or solids (33.7%), 22 to hot surfaces (27.5%) and 2 to dwelling fires (2.5%) (18).

In every nation, children are the future and the promise, being the core of a nation’s development. Investing for the future also means investing in children’s health (8). Many parents said that, home is one place where is a safe haven for their children, but every year, all over the world, more than 4.5 million children are injured at home (19).

Among children aged 14 and under, unintentional injury is the leading cause of death. About 5.526 children died in 2001 by the cause of injuries, and

approximately 45% of these deaths occurred in the home (20). Children are less aware of danger and younger children tend to have more accidents indoors, while the older children are more vulnerable outdoors, because they spend less time in the home (21). Causes of home child injuries are falls, fires, burns, drowning, poisoning, suffocation and choking.

Non-fatal injury is also a major problem. Permanent disability, of which injuries are the primary cause, has devastating emotional and financial impacts. When children are permanently disabled and families lose their breadwinners, injury becomes a constraint on the social and economic development of many countries in this region). In 2005, a community nationwide study in Singapore of 1.176 homes showed that there were many hazards in the homes of the study. About 288 homes (25.4%) had cluttered furniture, 294 homes (25%) had furniture with sharp edges, and 526 homes (44.7%) had vases and decorations. Not only living rooms, but also bathrooms and kitchens had many hazards, and parents did not care about sharp objects such as knives and scissors, or, in the bathroom, about with water in containers in 326 homes (31.6%) (20).

**Table 2.1** Injury profile of children

Location	Type	No %		Place	No %		Person looking after the child	No %		Outcome	No %	
		No	%		No	%		No	%		No	%
I. Home 327 (45%)	Falls	252	77.0	Living room	179	54.7	Mother	174	53.2	Self-treatment	280	85.6
	Injuries caused by sharp objects	43	13.2	Kitchen	58	17.7	Sibling	53	16.2	General practitioner	13	4.0
	Burns & scalds	16	4.9	Bedroom	45	13.8	Child alone	38	11.6	Polyclinic	10	3.1
	Blunt & crush injuries	7	2.1	Bathroom	31	9.5	Maid	22	6.7	Accident & Emergency room	18	5.5
	Choking	4	0.2	Do not know where it happened	14	4.8	Grandmother	16	4.9	treatment		
	Drowning	1	0.3				Relative	7	2.1	Hospitalisation	4	0.2
	Suffocation	1	0.3				Grandfather	3	0.9	Traditional chinese medicine	2	0.6
	Others	3	0.9									

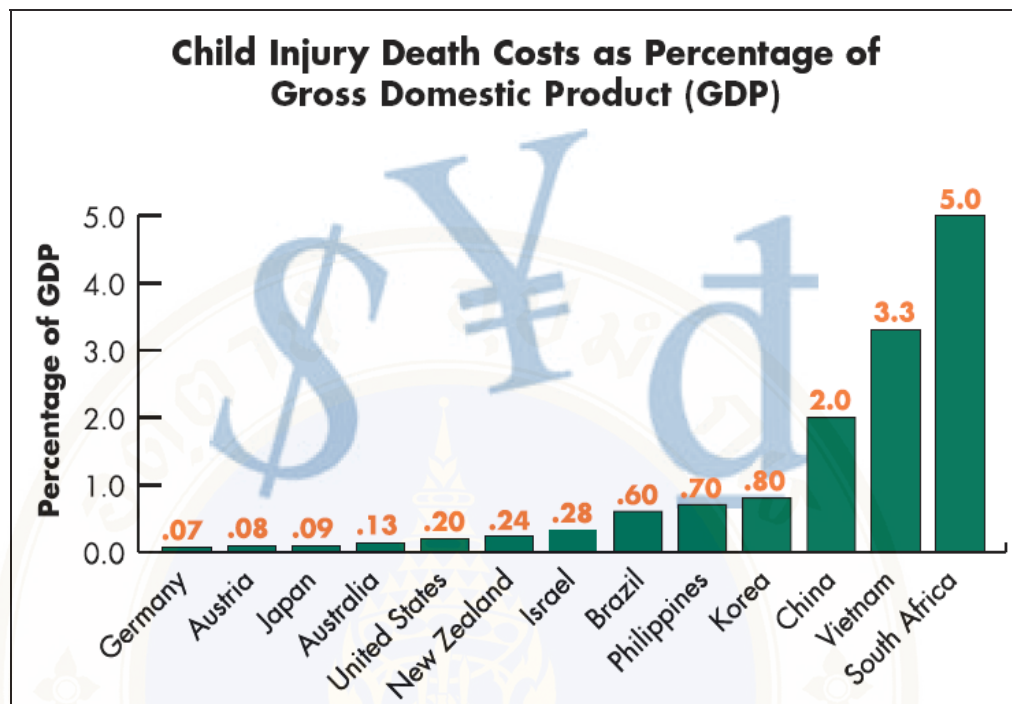
**Source:** Singapore Med J 2005; 46(3): 117

Table 2.1 shows that mostly injuries occurred in the living room and falls were the most common type of injury. Mothers were the main caregivers (68.5%) of the children, followed by grandmothers (13.4%) and maids (9.9%).

At home, the percentage of injuries also decreases with a child's age. Children living in rural areas are at greater risk from unintentional injury than children living in urban areas. Injuries usually occur in remote and rural areas, sparsely populated areas with prolonged response and transport times. Lack of medical facilities, equipment and health personnel to treat injuries also contributes to increased risk in rural areas. There is a need to increase the knowledge base about the outcome of injuries, as well as the factors that should be targeted in prevention efforts (17).

#### **Cost of child injuries**

Injuries are a significant cause of death in children and of physical, and psychological disability. Although the costs of child injuries difficult to determine, in the United States they were estimated at more than \$7.5 billion in direct and indirect costs each year. The total cost is more than \$12,700 for every child injured; including \$650 in medical costs, \$1000 in future earnings lost and about \$11,000 in lost quality of life (18). Part of the task ahead is to persuade policy makers that child injury prevention pays, and that preventive action can save society billions of dollars and incalculable heartbreak (22).



**Figure 2.3** Cost of child injuries

Source: WHO (2003)

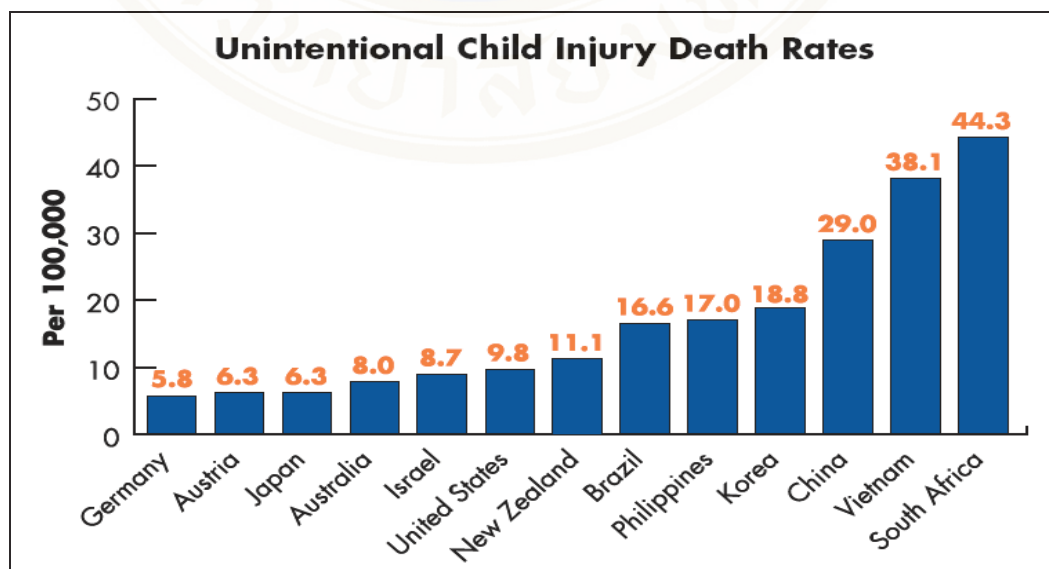
These statistics in figure 2.3 shows that costs of child injury deaths are very high in some countries in North – East Asia area in comparison with some Western countries. Vietnam was the second highest country and child injury death costs represent 3.3% of GDP. However, this figure represented only the lives lost, and the actual toll is much higher, because the family and community costs of caring for disabled children due to injury are factored into the equation. These disabled children may affect future productivity, and their care puts strain on both family resources and community health systems.

## 2.2 Injury prevalence in Vietnam

Overall, more than 95% of all injury deaths in children occur in low-income and middle-income countries. Every year, in developing countries such as Vietnam and Thailand, about 40% of the deaths of children of aged 1 to 14 years old caused by injury (9). Until recently, little attention had been paid to the issue of

injuries in low-income and middle-income countries. The lack of awareness of the problem compounded by the particular circumstances that these countries face, has meant that proven remedial measures have not been implemented to the same extent as they have in high-income countries. According to statistics from the National Programmed on Injury Prevention, injury is a public health issue arousing a lot of concern in Vietnam. The majority of the health care and social costs associated with injury come from nonfatal injury. In contrast to infectious and chronic diseases, serious injury, by its very nature generates enormous medical costs due to the need for surgical care, which requires blood banks, anaesthesiologists and surgeons plus skills operative teams, special diagnostic technology. Unintentional injury is a leading cause of death of Vietnamese children and teenagers.

A study in 2002 about unintentional childhood injuries in 13 countries, including Vietnam, found that although the death rates of unintentional child injury in developing countries and industrialized countries may differ, the causes and solutions were similar (22). In some industrialized countries, disparities in injury rates between wealthy and poor children indicate a need for more services for the highest risk population groups.



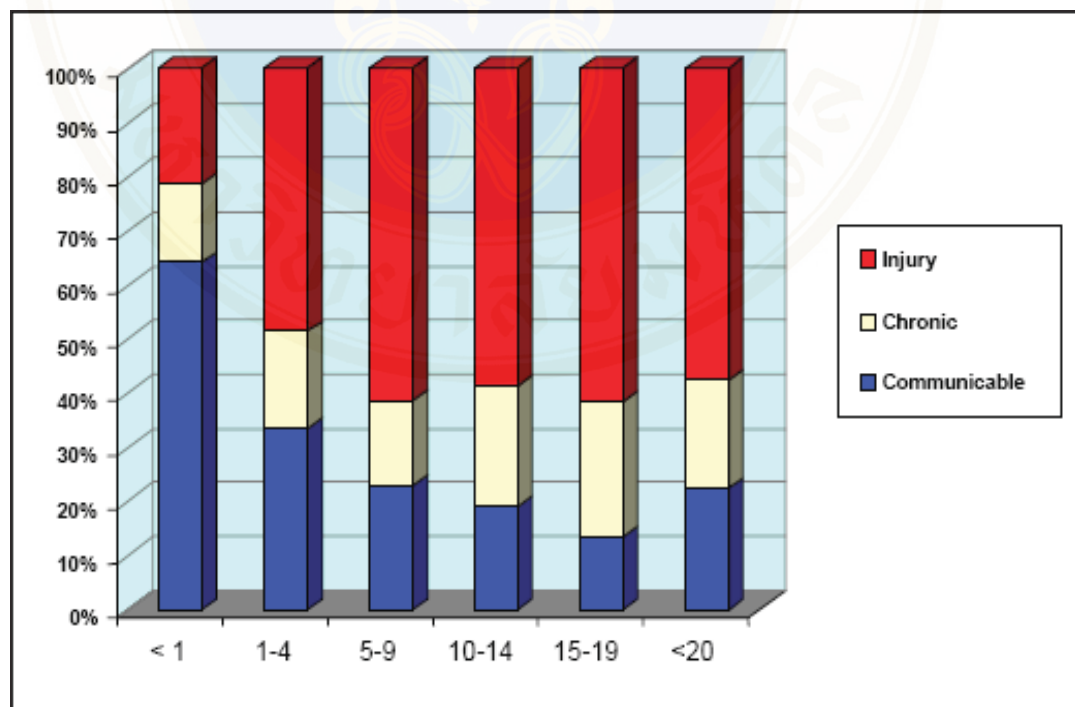
**Figure 2.4** Unintentional child injury death rates

**Source:** WHO (2003)

Figure 2.4 shows that the death rate from unintentional child injuries in Vietnam in 2002 was 38.1 per 100,000 populations. This is high in comparison with Western countries and North- East Asia. The costs of unintentional childhood unintentional injury deaths in these 13 countries exceed \$12.6 billion annually. In 2006 alone, 7.198 children and adolescents equivalent to nearly 20 children per day (22).

### 2.2.1 Injury and other diseases

In 2001, Vietnamese children had a nonfatal injury rate of 4.818/100,000 children. This means that almost 5% of children were injured that year significantly enough to seek medical attention or lose at least one day of work or school. Over 1,500,000 children were injured in the year prior to the year 2001, or about 4.300 per day, which is one child every three minutes. This is an hourly rate of almost 180 children, or one injured child every twenty seconds (23).



**Figure 2.5** Fatal illness and injury in children

**Source:** VMIS (2003)

Figure 2.5 shows that, for children aged 5 to 9 years old, injuries were the leading cause of illness accounting for 61.4%, followed by communicable disease causes at 22.5% and chronic disease causes at 19.9% (24). Most of the direct medical, other economic and social costs are associated with nonfatal injury, and for this reason it represents the major health burden of children in Vietnam.

### 2.2.2 Causes of child injuries

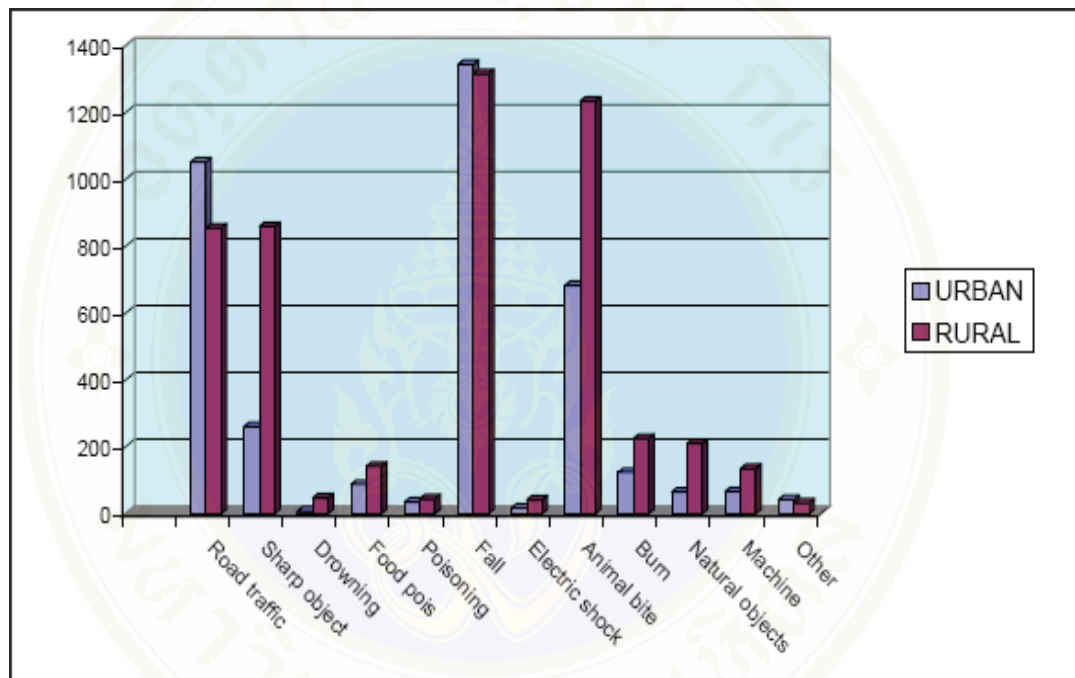
The Mekong River region had the highest rate of injury across all age groups, followed by Central Highland, and North Central Region. Children in Vietnam have a characteristic pattern of nonfatal injury that is dependent on the different ages. According to the Vietnam Multi-centre Injury Survey (VMIS) in 2003, there were 2,533 nonfatal child injuries that either required medical attention or caused a child to miss at least one day of work or school (23).

**Table 2.2** Overall nonfatal child injury by cause and age /100,000 in Vietnam

Age group \ Causes	< 1	1-4	5-9	10-14	15-19	<20
Fall	265.2	1469.2	1591.1	1416.4	1057.7	1322.1
	5	115	201	215	159	695
Animal bite	241.3	983.3	1464.0	1396.9	681.1	1105.2
	5	77	185	212	102	581
Road traffic	69.3	722.7	907.3	688.3	1307.4	900.2
	1	57	115	105	196	473
Sharp object	22.1	407.4	558.8	836.9	989.1	719.9
	0	32	71	127	148	378
Burn	398.2	504.2	175.1	166.2	74.4	201.0
	8	40	22	25	11	106
Poisoning	242.4	148.8	265.0	114.8	141.1	168.1
	5	12	33	17	21	88
Falling objects	56.9	180.1	123.0	155.7	253.7	175.9
	1	14	16	24	38	92
Machine	0.0	30.7	87.2	94.3	230.7	118.6
	0	2	11	14	35	62
Drowning	0.0	106.8	74.0	8.0	6.2	37.8
	0	8	9	1	1	20
Electric shock	0.0	100.5	17.5	40.3	16.0	35.4
	0	8	2	6	2	19
Other	0.0	0.0	73.4	27.6	28.9	33.8
	0	0	9	4	4	18
All causes	1,295.4	4,653.7	5,336.4	4,945.4	4,786.3	4,818.0
	25	365	674	750	717	2,532

Source: VMIS (2003)

Table 2.2 shows that the most vulnerable age group was the 5 to 9 years old age group. In this group, there were five main causes of injuries: falls, animal bites, sharp objects, poisoning and burns. Fall injuries ranked as the number one cause of nonfatal child injury with a rate of 1591.1 per 100,000 children, followed by animal bites with a rate of 1464.0 per 100,000 children, and by another causes (sharp objects, poisoning, burns).



**Figure 2.6** Causes of injuries in urban and rural areas

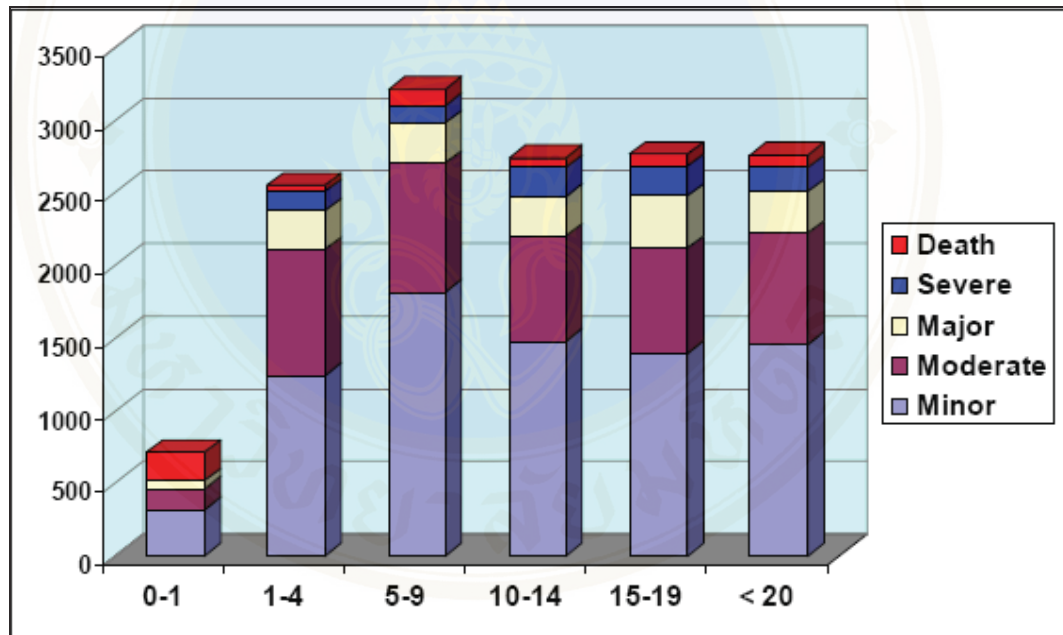
**Source:** VMIS (2003)

Regarding to the causes of injuries in Vietnam, figure 2.6 shows that there were no large disparities in the causes of nonfatal child injury between urban and rural areas. There were differences from sharp objects and animal bite with the predominating in the urban areas and fatal drowning rates which were higher in the rural areas.

### 2.2.3 Severity of injury

The figure below shows that for Vietnamese children, the severity of the injuries suffered did not differ significantly between the child age groups. After infancy, the risk of injury serious enough to require medical care (minor in this figure), hospitalization (moderate in Figure 2.7), major surgery (major, Figure 2.7) or death was the same for all the child age groups.

From figure 2.7, it was showed that, injury appears to be an “equal opportunity” killer and disabler of children in Vietnam, leaving no groups of children safe, no matter their age, sex, and place of residence or economic status.



**Figure 2.7** Overall injury rate by severity and age group

**Source:** VMIS (2003)

The severity of injury by age group was defined by the need of medical care, the days in hospital, school time lost, the appearance of disability or death.

In 2005 in Vietnam, about 70% of injury cases were treated at district or community health centres. 55% of the mortality cases were due to drowning and in most cases the children were dead before being discovered by adults. 70% of the injury mortality

cases occurred at the scene of accidents, 12.5% occurred at homes and only 5% of the cases occurred on the way to the health care facilities (25).

#### 2.2.4 Place of injury

In Vietnam, a study found that most of child injuries occurred at home, this below table also showed the result quiet similar indicated that home injury was accounted 33.30%, in school 7.65%, sport activities is 15-20% (26).

**Table 2.3** Place of child injury

No	Place where injury happened	Inner areas of HP City	Suburban area	Island area	Total	Percentage (%)
1	In the home	171	438	44	653	33.30
2	Outside the home	175	428	43	646	32.94
3	School	52	83	15	150	7.65
4	Others place	104	361	47	512	26.11

#### 2.2.5 Burden of injury

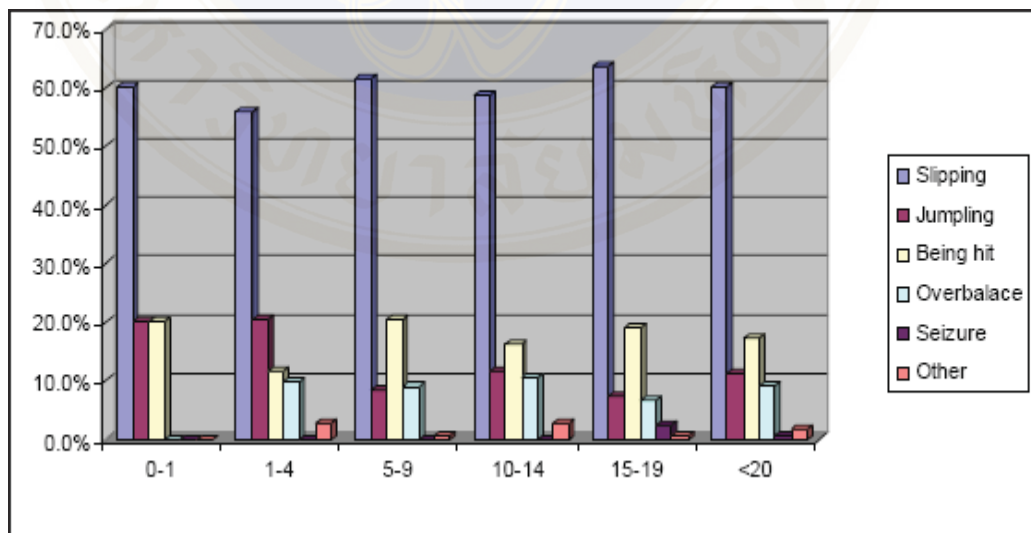
It was estimated that the burden of injury to population is very high, if we could prevent all the injury death, we would increase the life expectancy at birth of Vietnamese population by 7 years. The child injured need to treatment in the health facilities also required assistances from other family's members in doing personal activities such as having meals, baths, wearing clothes and in performing daily activities such as going to school, go to work with a quilted large number of days (16).

### 2.3 Types of home injury

In 2004, research conducted in Vietnam about risk factors to injury accidents on students at Thainguyen province showed that the four leading causes of child injury in Vietnam were: falls, animal bites, and wounds by sharp objects and burns (20).

#### Falls

Falls were a common cause and the leading cause of nonfatal child injury. All over the world, every year at least 45,000 children die because of falls. At home, children can fall from beds, fall down from stairs and even fall out of windows. In Vietnam, every year, about 430,000 children, almost 1,200 children per day fall from the same level (e.g. on ground, sport ground) or from the higher levels (e.g. down stairs or steps). Over half the fall injuries are serious injuries, resulting in 8.4 days in hospital. In 2001, over 1,500 children died by cause of falls, about four children each day (23).



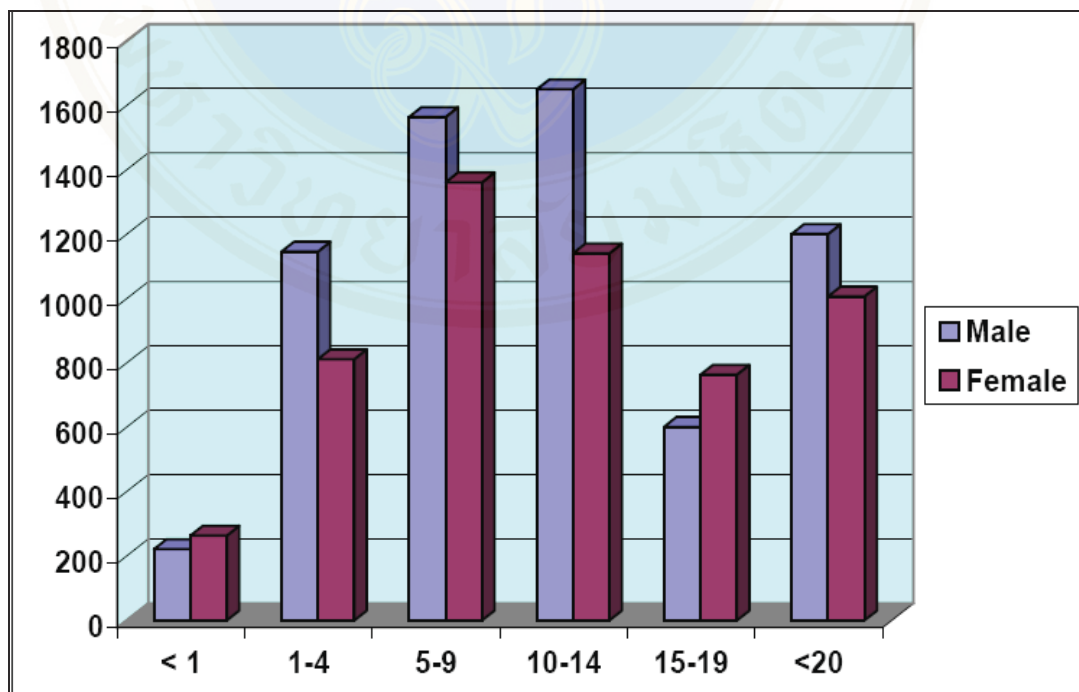
**Figure 2.8** Determinants of fall injury in Vietnam

**Source:** VMIS (2003)

For Vietnamese children aged 5 to 9 years old, figure 8 shows that almost two-thirds (60.2%) of falls happened because of slipping, followed by being hit, overbalancing and jumping. The places where falls occurred varied with where the children spent time. Children spend most of their time in or near the houses, thus most of the falls were in or near their homes. Falls had significant economic consequences for the fall victims, as well as for their families, and in the form of hospitalization and missed school days.

### Animal bites

Injuries by animal bites have become an important public health problem in Vietnam. In 2001, a community survey in Vietnam showed that around 360,000 Vietnamese children suffer animal bites each year (16). For children, the injury rate from animal bites was 1.105/ 100,000 population. One of report on injury in 2003 found that dogs caused about 79.5% of animal bite injuries. 83.3% of animal bite injuries occurred when animals were being fed (23).



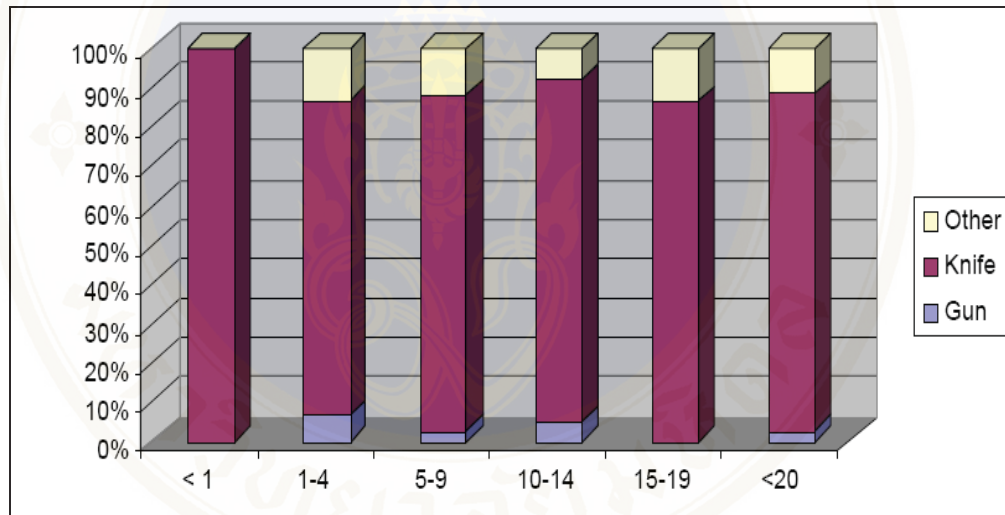
**Figure 2. 9** Animal bite injury rates (/100,000) by sex and age group.

**Source:** VMIS (2003)

Figure 2.9 shows that the children 5 to 9 aged group had the second highest rate of animal bites. This result can be explained by the fact that children aged 5 to 9 years have the highest daily exposures to animals either feeding and grooming pets.

### Sharp object

Vietnam is agriculturally oriented and people usually use knives, sickles and hoes in the home. Children often play with sharp objects. The nonfatal rate was 719.9/100,000 population and there was a significant difference between males and females (23).



**Figure 2.10** Causes of sharp objects injuries

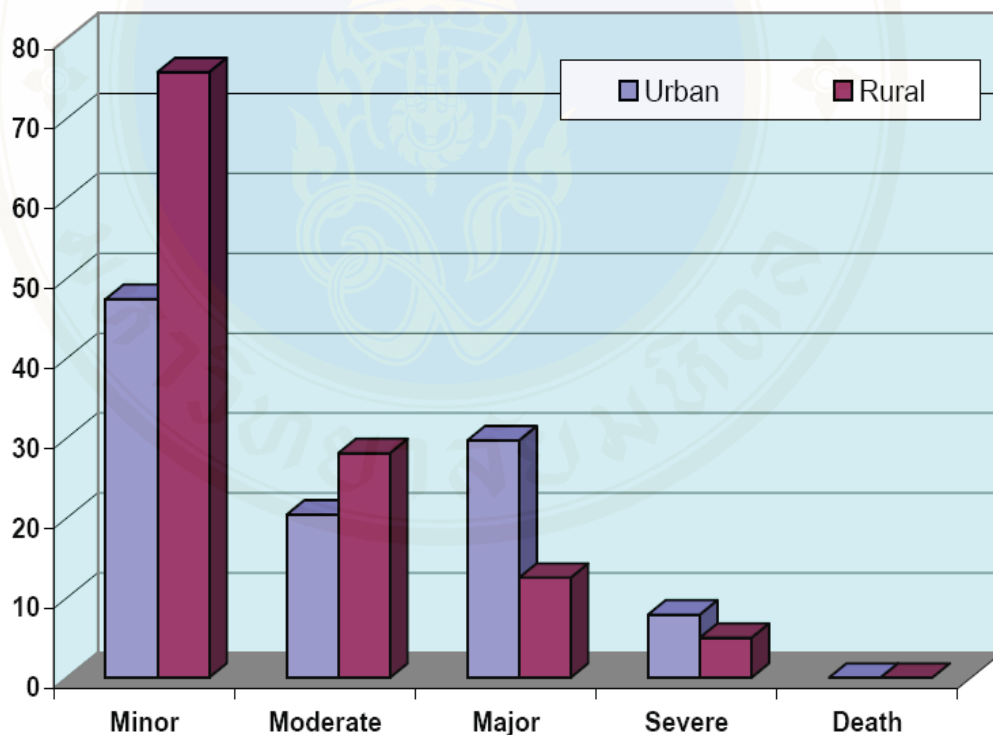
**Source:** VMIS (2003)

This figure shows that, in group of children aged 5 to 9 years, more than 90% of injury caused by knives or knife-like objects, and 2.3% was caused by guns/firearms and less than 1% of injuries were caused by explosives. The explosive injuries were caused by use of explosives in attempting to catch fish.

## Burns

According to WHO, every year, burns are responsible for 300,000 deaths. Burns occur mainly at home (27). There are many causes of burn injuries: scald burns, flames or flash burns, electrical burns, thermal burns and chemical burns. For children, hot bath water is responsible for the highest number of burn injuries.

In the year 2001 in Vietnam, over 65,000 children were burned, this is almost 180 children each day. For Vietnamese children, the burn injury rate was 201.0/ 100,000 per population. Hot water was the main cause of burn in every age group, followed by chemicals, fires and other causes (23). Burns were a major cause of permanent severe disability in children.



**Figure 2.11** Severity of child burn injury in urban and rural area

**Source:** VMIS (2003)

In Vietnam, the severity of child burns differs between urban and rural areas. Minor burns tend to be more common in rural areas, whereas major burns tend

to be more common in urban areas (23). However, statistically, children in both urban and rural areas are at a similar risk of burn injury. Most homes in the rural area in Vietnam do not have separate rooms for kitchens, thus young children are in very close proximity to cooking fires, which often have pots filled with hot or boiling water. In urban area, kitchens typically have a raised platform at one-meter height for stoves and pots, and pans and thermos jugs. This height is a deadly height as it is just at arm's length for toddlers and young children. When left unsupervised and when pots are simmering, young children often pull the contents of the pans directly on to themselves.

## **2.4 Health Belief Model**

Since the early work of Geoffrey Hochbaum (1958), several version of the health belief model (HBM) have appeared. The one that has attracted is that of Marshall Becker and Irwin Rosenstock (Becker and Rosenstock, 1984).

Knowledge and attitude play an important part in the adoption and maintenance of the specific behaviours. The Health Belief Model (HBM) is a psychological model that attempts to explain and predict health behaviours. This is done by focusing on the attitudes and beliefs of individuals (9). The HBM was spelled out in terms of five constructs representing the perceived threat and net benefits: (1) perceived susceptibility to disease or disability, (2) perceived severity of the disease or disability, (3) perceived benefits of health-enhancing behaviours, (4) perceived barriers to health-enhancing behaviours, including financial costs, and (5) cues to action. (Table 2.4).

**Table 2.4** Concepts, definitions and applications of Health Belief Model

Concept	Definition	Application
Perceived Susceptibility	One's opinion of chances of getting a condition	Define populations at risk, risk levels, personalize risk based on a person 's features or behaviour, heighten perceived susceptibility if too low
Perceived Severity	One's opinion of how serious a condition and its consequences are	Specify consequences of the risk and the condition
Perceived Benefit	One's belief in the efficacy of the advised action to reduce risk or seriousness of impact	Define action to take, how, where, when: clarify the positive effects to be expected
Perceived Barriers	One's opinion of the tangible and psychological costs of the advised action	Identify and reduce barriers through reassurance, incentives, assistance
Cues to action	Strategies to activate "readiness"	Provide how- to information, promote awareness, reminders
Self- Efficacy	Confidence in one 's ability to take action	Provide training, guidance in performing action

**Source :** A Guide for Health Promotion Practice ( 1997)

**Perceived susceptibility:** defined as one's subjective belief of the risk of contracting a health condition. In the case of medically established illness, the dimension has been reformulated to include acceptance of the diagnosis, personal estimates of susceptibility and susceptibility to illness in general. It is applied to

define population at risk or risk levels, to personalize risk based on a person's characteristic or behaviour.

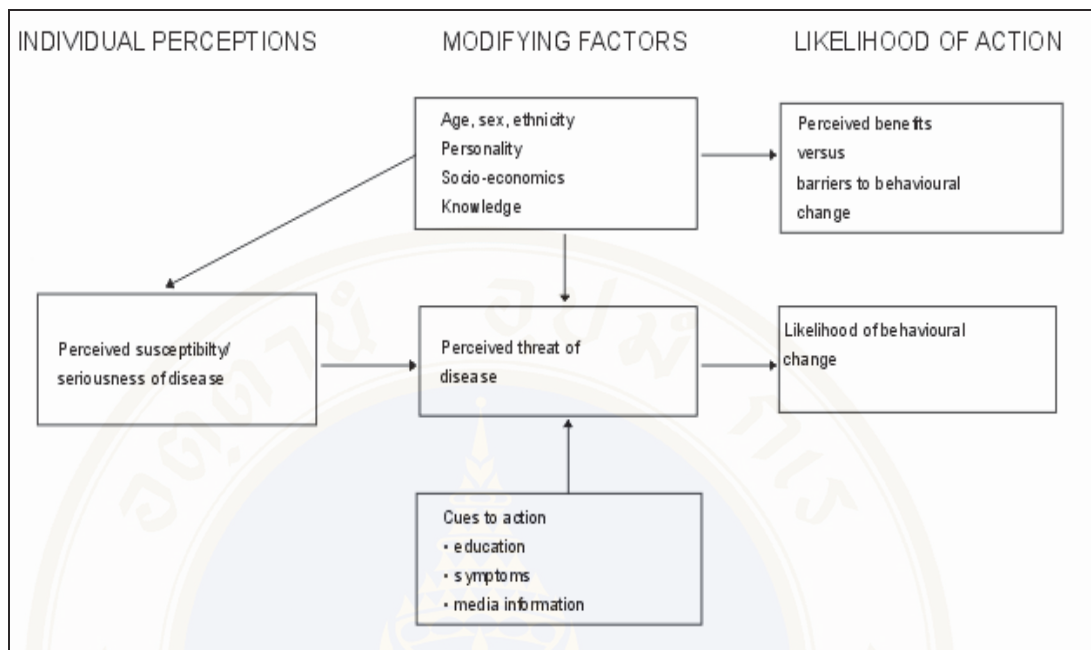
**Perceived severity:** refers to one's subjective belief of the seriousness of contracting an illness or of leaving it untreated, including evaluations of both medical and clinical consequences (e.g. death, disability and pain) and possible social consequences (such as effect of the conditions on work, family life and social relations). It is applied to specify consequences of the risk.

**Perceived benefits:** defined as one's subjective belief of the effectiveness of the various available and advised to reduce the risk of seriousness of disease impact, to clarify the positive effects to be expected.

**Perceived barriers:** refers to one's subjective belief of potential negative aspects of the advises. The potential negative aspects of a particular health action, may act as impediments to undertaking the recommended behaviour. The individual engages in a cost-benefits analysis where in the weight action's effectiveness against perceptions that maybe expensive, dangerous (having negative side effects or iatrogenic outcomes), unpleasant (painful, difficult, upsetting, inconvenient) time-consuming and so forth.

**Cues to action:** in various early formulation of the HBM, the concepts of clues which trigger action were discussed and may ultimately prove to be important. In the health area, such events or cues might be internal (e.g. perception of bodily states) or external (e.g. interpersonal interactions, the impact of media of communication).

**Other variables:** Socio-demographic factors, particularly educational attainment, are believed to have an effect on knowledge and attitude of the respondents.



**Figure 2.12** Conceptual model of Health Belief Model

**Source:** Glanz et al, 2002, p.52

### **The application of the HBM for this study**

The factors of socio-demographic of the mothers was selected as the key factors, that may effect to the mothers' knowledge and attitude. These socio-demographic factors were age of the mothers, marital status, education, occupation, income, type of family; number of the children in the family, etc... In this study, the knowledge of the mothers was mentioned on the types of home injury and environment factors. The attitude of the mothers was mentioned on aspects of susceptibility, severe, benefits and barriers that related to injury prevention. An added concept, cues to action in this study mentioned about where the mothers of children get the information of home child injury.

## **2.5 Relevant researches**

-In 2004, a study conducted on factors related to child injuries in urban and rural area, in Thainguyen Province (the north-eastern part of Vietnam) showed that the

rate of injuries accidents of students in urban (4.8%) was higher than that in rural area (3.8%). The highest rate of injuries was at aged 12 years (7.2%). Reasons patterns of child injuries in these areas were: falls (41%), animal bites (9.8%), 10.8% of urban students and 4.2% of rural students suffered wound by sharp objects. Injuries occur mainly in the morning and in the afternoon when children finish class (29).

-In 2007, a study was conducted in the rural area of Vietnam, about the factors related to preventive behaviour on home injury among mothers with children under 5 years old at communes of Hungyen province. This study showed that 16.6% of the mothers had good knowledge level, 63.4% had moderate knowledge and 20% had low knowledge level (30).

-Van DK conducted a survey on people's KAP in community on children injury and injury prevention in the rural area of Vietnam showed that, 49% of the respondents said, the main cause of fall in children was slipping (9).

-Thang NV conducted a study on epidemiological factors of child injuries in National Hospital of Pediatrics within 2 years: 2002-2003. The results of this study showed that, 48.6% of the children in the rural area and 38.3% of the children in the urban area suffered falls (5).

-In Iraq, a survey of causes and differentials of childhood mortality in rural and urban areas found that, due to accidents, deaths were more common in rural areas (5%) than in urban areas (3.2%) (3).

-In 2005, Thein M M conducted a study on childhood injuries in Singapore. The study found that the percentages of child injuries occurring at different places were: 54.7% of children got home injury in the living room, 17.7% in the kitchen and 13.8% in the bedroom (21).

-A report in USA about trends in unintentional childhood injury mortality and parental view on child safety found that, the 58% of parents are aware that

unintentional injury is the number one killer of children ages 1 to 14, parents in low-income households are more concerned than parents in higher-income households and 77% of parents think that they need to learn more about child safety. About resource of information, this study showed that 55% of parents often look to doctors (31).

-A study in Vietnam on child injury prevention and communication models in 2004 showed that, the proportion of television in mountainous low but higher proportion of radio (37).

-In 14 European countries in 2005, a study on parents' perceptions, attitudes and behaviours towards child safety showed that, the most common response, when asked why some parents find it difficult to protect their children from injury, was not being able to watch their children constantly. Lack of awareness or knowledge about the causes of accidents was the second response. Two-thirds of parents would like to see more help from the government to prevent childhood injuries. Three-quarters of parents agreed that child injuries can be avoided (38).

-In London 2003, a report on parental knowledge and attitudes found that, less than half of parents are aware that falls are the most common cause of injury in children, and nearly a third of parents still feel that injuries are only "somewhat" preventable (39).

-Regarding the role of supervision in prevention child injury, a research in American showed that, the lower levels of supervision on home injury prevention, the higher risk of children got injured at home (40).

From the above literature review related to the mother's knowledge and attitude regarding the prevention of child injuries at home, hopefully this information will provide some useful insights as to encourage parents, caregivers and supervisors to appreciate the causes of injuries to children, and to better manage the home environment to prevent child injuries at home.

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **3.1 Study design**

The study design is a cross-sectional descriptive study, which aims to reveal the knowledge and attitudes of mothers regarding the prevention of child injuries at home with children 5 to 9 years old.

#### **3.2 Study site and population**

This study was conducted in two comparative settings in Hoankiem District and Donganh District, Hanoi City. Hanoi is the capital of Vietnam, situated in Red River Delta. It is the political, economic and cultural centre of the country. All government offices and ministries are located in Hanoi. Hoankiem District is in the northeast quadrant. In the last 10 years globalization, urbanization and industrialization has speeded up in Hoankiem District very fast. The population of Hoankiem District is 173,000 with an area 924 km<sup>2</sup>. Density is 32,703 persons per km<sup>2</sup>. Donganh district is a rural district, located in the North of Vietnam, with a population of 0.3 million, of which 255,228 people (90.10%) depend on agriculture and the rest work in industrial zones (9.9%). Its density is 1481 persons per km<sup>2</sup>. In this area, unemployment is still a considerable social problem (14,700 people). The area is 18,230ha (182,300 square km<sup>2</sup>). Donganh used to be an agriculture farming and fishing area where people grew rice and vegetables. Donganh is famous for providing fresh vegetables and fresh water fish to urban areas. The population of the study were mothers with children aged 5 to 9 years old attending Tienduong Primary School - Donganh District, and Thanglong Primary school - Hoankiem District.

### **Inclusion criteria**

Vietnamese mothers of children aged 5 to 9 years old, and the children are studying in Tienduong Primary school children- Donganh District and Thanglong Primary School Children- Hoankiem District. Mothers of children who consented to participate in this research, and who agreed to sign a participation information sheet and consent form.

### **Exclusion criteria**

Mothers of adopted children.

Mothers who did not understand Vietnamese language.

### **3.3 Sample size**

The sample size for this study was determined with a 95% confidence interval. A study conducted in Vietnam on knowledge of parents about preventing injury to children at home, showed that 40% of mothers thought that falls were the most common cause of home injury (9). Based on the formula developed by Cochran (32), the sample size was computed by using the following statistical formula:

$$n = \frac{Z_{\alpha/2}^2 pq}{d^2}$$

$n$  = the desirable calculated sample size

$Z$  = Standard normal deviation set at 1, 96 corresponding 95 % confidence interval

$p$  = anticipated proportion of individual in population possessing the characteristic of the study interest (=0, 4)

$q = 1 - p$

= 1 - 0.4

= 0.6

d= degree of accuracy desired, setting at 6%

$$n = \frac{(1.96)^2 \cdot (0.4) \cdot (1 - 0.4)}{(0.06)^2}$$

$$= 256$$

The sample size was increased by 10% in this study, to prevent information loss from incomplete data, or withdrawal of participants. Therefore, the sample size in this study was 282 mothers, 141 from each school.

### 3.4 Data collection procedure and sampling technique

After receiving permissions from the research ethic committee for the study, data collection was undertaken as follows:

1. The directors of Thanglong primary school and Tienduong primary school were requested for co-operation and permission, and 4 research assistants were trained by the researcher to collect the data consistently. Self administered questionnaires were not used in this study, because it was anticipated that mothers might not have been able to read or write. Accordingly, a face to face interview with a structured questionnaire was used to collect the data with confidence to the mothers. After getting permission to collect data from the directors, the number of classes in each grade in each school was ascertained.
2. In each grade of two primary schools, simple random sampling selects one class. Students in selected class with eligible mothers were chosen to include in this study.
3. A written information sheet was given to the invited mothers.
4. When visited the mothers, the researcher explained the purposes and processes of the study, and the protection of their legal and ethical rights. Mothers who participated in this study were asked to sign a written consent form.
5. Using a constructed- questionnaire, the mothers were interviewed. It took about 60 minutes to complete the questionnaires.
6. The participants were assured that all information would be confidential, and that their answers would not be linked to any particular.

7. The participants were assured that they had the right to withdraw from this study at any time, and that their decision would not affect the care given to their children.

8. Upon the completion of the questionnaire, each respondent was thanked for her cooperation.

### **3.5 Research instruments for data collection**

For data collection, a structured questionnaire was used. The questionnaire was prepared in English and translated into Vietnamese. The questionnaire used in this study consisted of four parts:

Part 1: Socio- demographic data questionnaire.

Part 2: Knowledge of mothers regarding the prevention of child injuries in the home in Hoankem and Donganh District- Hanoi

Part 3: Attitudes regarding the benefit of implementing preventive behaviour by mothers.

Part 4: Sources of information (cues to action).

#### **Part 1 Socio-demographics of the mothers**

The questionnaire was used to record information regarding the mothers of primary school children. Respondents' socio-demographics included - age, marital status, education, occupation, family income, type of family and number of children in the family

Age of mothers could be divided into 3 groups: 20-29 years old, 30-39 years old and 40 years old and above.

Education of parents could be divided as follows: no formal education, primary school, secondary school, high school, Diploma, Bachelor's degree, Master's degree.

Occupation of mothers: housewife, farmer, labourer, business, teacher, or government officer.

Family income in this study categorized into three groups:

Group 1: Less than 1,000,000 VND per month

Group 2: 1,000,000 – 2,000,000 VND per month

Group 3: more than 2,000,000 VND per month

## **Part 2 Knowledge of mothers regarding prevention of home injuries**

Multiple choice questions were used for knowledge of mothers regarding prevention of home injuries. The scores were categorized into 2 levels:

Correct answer            1 point

Incorrect answer        0 point

According to Benjamin S Bloom criteria (33):

Group 1: Good if score more than 80% total of score.

Group 2: Moderate if score from 60% to 80% total of score.

Group 3: Low if score less than 60% total of score.

Totals knowledge scores of the respondents regarding prevention of home child injuries were calculated from 14 items. Thus, scores were categorized into three levels:

Good                    : if score equal or more than 11

Moderate            : if score from                    8 to 10

Low                    : if score equal or less than 7

## **Part 3 Attitude towards home child injury**

Attitude in this study divided into attitude regarding the hazards of home injuries, benefits and barriers to implementing home injury prevention. This part consisted of 34 questions. These questions were answered by Best Rating Criteria with agree, disagree or not sure (34). The scoring was categorized as follow:

For positive attitude	Agree	3 points
	Not sure	2 points
	Disagree	1 point
For negative attitude		
	Agree	1 point
	Not sure	2 points
	Disagree	3 points

Thus, the classification of score level of attitude will categorized into

High score: Greater or equal mean

Low score: Less than mean

#### **Part 4 Sources of information on home child injuries**

This part about sources of information, information from health personnel, family members or friends, or which channel are most effect to mother's knowledge, attitude regarding the prevention of child injury at home. These questions in this part were multi choice question.

### **3.6 Validity and Reliability**

Regarding the validity and reliability of the questionnaire, it was corrected based on suggestions of the researcher's major academic advisor and co-advisor, and translated from English into Vietnamese.

With regard to the reliability of the questionnaire, a pre-test was conducted to the mothers with children aged 5 to 9 years old in one primary school, randomly selected. The knowledge part was analyzed by using KR20 and the attitude part was analyzed using Cronbach's Alpha. KR20 and Cronbach's Alpha were calculated by using the Minitab software program, and the results were 0.68 and 0.7 respectively.

### **3.7 Ethical issues**

Privacy, anonymity and confidentiality will be major ethical issues of concern of this study. The survey team members will be trained on importance of ethical issues, how to seek informed consent and how to safe the anonymity and confidentiality. Before start the interview, a language statement was read to the mothers. The statement will be outlined the objectives of the study, risks involved in this study, types of information and reasons for seeking such information.

### **3.8 Data analysis**

Epidata was used for data entry while Minitab 13 version program used to analyze the data. Frequency and percentage were calculated for age, family income, knowledge, attitude and sources of information groups. Minima, maxima, mean and standard deviation were also calculated for quantitative data. Chi-square test was performed to determine the difference of the knowledge and attitudes of mothers on preventive home child injuries between urban and rural districts.

## **CHAPTER IV**

### **RESEARCH RESULTS**

This research was conducted to describe maternal knowledge and attitude regarding the prevention of home child injuries between urban and rural districts. Questionnaire interviews were conducted of 283 respondents consisting of 142 respondents in an urban district (Hoankiem district) and 141 respondents in rural district (Donganh district). The overall goal of this study was to determine the personal characteristics, knowledge and attitude of the mothers regarding the prevention of child injuries at home for children aged 5 to 9 years, and the difference in maternal knowledge and attitude regarding the prevention of child injuries at home between the urban and rural districts.

This is a cross-sectional study. Most of the results have been summarized in the form of frequency and percentage tables. The difference in knowledge and attitude of mothers in the urban and rural districts was compared by using the Chi-square test. P-value less than 0.05 was considered a statistically significant difference. The study results are presented in the following 7 parts:

- 4.1 Socio-demographics of mothers in the urban and rural districts.
- 4.2 Knowledge of mothers regarding the prevention of child injuries at home in the urban and rural districts.
- 4.3 Mothers' attitude towards prevention of child injuries at home in the urban and rural districts.
- 4.4 Sources of information on home child injury in the urban and rural districts.
- 4.5 Comparison of socio-demographics of mothers in the urban and rural districts.
- 4.6 Comparison of mother's knowledge regarding the prevention of child injuries at home in the urban and rural districts.

4.7 Comparison of mother's attitude towards prevention of child injuries at home in the urban and rural districts

4.8 Comparison of sources of information on home child injuries in the urban and rural districts.

**Table 4.1** Frequency distribution of socio-demographics of mothers in the urban and rural districts

Characteristic	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
<b>Age</b>						
20-29 years old	24	16.90	30	21.28	54	19.08
30-39 years old	84	59.15	89	63.12	173	61.13
40 and above	34	23.94	22	15.60	56	19.79
Mean= 34.23	SD = 5.09					
Min = 24	Max = 47					
<b>Marital status</b>						
Married	102	71.83	94	66.67	196	69.26
Separated/ divorced, widow	40	28.17	47	33.33	87	30.74
<b>Education</b>						
Illiterate, primary school	4	2.82	3	2.13	7	2.47
Secondary school	14	9.86	29	20.57	43	15.20
High school	26	18.31	45	31.91	71	25.09
Above high school	98	69.01	64	45.39	162	57.24
<b>Occupation</b>						
Housewife	8	5.63	4	2.84	12	4.24
Laborer	31	21.83	47	33.33	78	27.56
Farmer	0	0	33	23.40	33	11.66
Others (government officer, teacher, doctor, public servant)	103	72.54	57	40.43	160	56.54

**Table 4.1** Frequency distribution of socio-demographics of mothers in the urban and rural districts. (cont.)

Characteristic	Urban district (N = 142)		Rural district ( N = 141 )		Total ( N = 283 )	
	N	%	N	%	N	%
	<b>Family income</b>					
< 100,000- 990,000	8	5.63	43	30.50	51	18.02
1,000,000- 1,990,000	53	37.33	63	44.68	116	40.99
More than 2,000,000	81	57.04	35	24.82	116	40.99
<b>Type of family</b>						
Nuclear family	96	67.61	51	36.17	147	51.94
Extended family	46	32.39	90	63.83	136	48.06
<b>Number of living children</b>						
1	78	54.93	74	52.48	152	53.71
2	64	45.07	67	47.52	131	46.29
Mean = 1.46	SD = 0.49					
Min = 1.00	Max = 2.00					
<b>Number of children aged 5 to 9</b>						
1	136	95.77	129	91.49	265	93.64
2	6	4.23	12	8.51	18	6.36
Mean = 1.06	SD = 0.24					
Min = 1.00	Max = 2.00					
<b>The place that children aged 5 to 9 were born (Children number 1)</b>						
In the hospital	141	99.30	125	88.65	266	93.99
At home	1	0.70	16	11.35	17	6.01
<b>The place that children aged 5 to 9 were born (Children number 2)</b>						
In the hospital	4	80.00	9	90.00	13	86.67
At home	1	20.00	1	10.00	2	13.33

#### 4.1 Socio-demographics of mothers in the urban and rural districts

The respondents were categorized into 3 age groups. Table 4.1 shows that the majority were aged 30-39 years. In the urban district, 59.15% of the mothers were aged 30-39 years, and in the rural district, 63.12% of the mothers were in this group. The second group was the age group above 40 years old. In this study, the minimum age was 24 years old, and maximum age was 47 years old.

For the marital status of the mothers, the married group was largest. In the urban district, 71.83% of the mothers were married and this rate in the rural district was 66.67%. Education of the mothers: in the urban district, 69.01% of the mothers had had above high school education and 18.31% had had high school education. In the rural district, 45.39% of the mothers had had above high school education, whereas 31.91% had had high school education. Occupation of the mothers: 72.54% of the mothers in the urban district and 40.43% of the mothers in the rural district were government officer, teacher, doctor or public servant. The 23.40% of the mothers in the rural district were farmers.

Family income: 57.04% of the families in the urban district and 24.82% of the families in the rural district had high monthly incomes (more than 2,000,000 VND). 37.33% of the families in the urban and 44.68% of the families in the rural district had monthly incomes of 1,000,000 to 2,000,000 VND. Regarding family type, 67.61% of the mothers in the urban district and 36.17% of the mothers in the rural district lived in nuclear families. Table 4.1 shows that, 54.93% of the urban mothers and 52.48% of the rural mothers had one child. The 45.07% of the mothers in the urban district and 47.52% of the mothers in rural district had two children.

The number of children aged 5 to 9 years is presented in table 4.1. The 95.77% of the mothers in the urban district and 91.49% of the mothers in the rural district had one child aged 5 to 9 years. Only 4.23% of the urban mothers and 8.51% of the rural mothers had two children aged 5 to 9 years. The result found that 99.30%

of first children aged 5 to 9 years in the urban district and 88.65% of first children aged 5 to 9 years in the rural district were born in a hospital.

**Table 4.2** Frequency distribution of mothers by child status on home injury within six months prior to the study

<b>Children got home injury within six months prior to the study</b>	<b>Urban district (N = 142)</b>		<b>Rural district (N = 141)</b>		<b>Total (N = 283)</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Children got home injury within six months prior to the study</b>						
Yes	66	46.48	69	48.94	135	47.70
No	76	53.52	72	51.06	148	52.30
<b>Your children seen a doctor because of home injury</b>						
Yes	11	16.42	20	28.99	31	22.79
No	56	83.58	49	71.01	105	77.21
<b>Type of injury that children aged 5 to 9 years suffered</b>						
Falls	24	36.36	13	18.84	37	27.41
Animal bite	13	19.70	19	27.54	32	23.70
Wound by sharp objects	7	10.61	14	20.29	21	15.56
Burn	22	33.33	22	31.88	44	32.59
Electricity	0	0	1	1.45	1	0.74

**Table 4.2** Frequency distribution of mothers by child status on home injury within six months prior to the study. (cont.)

Children got home injury within six months prior to the study	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
	<b>The place that children injured within last six months</b>					
In the living room	17	25.76	10	14.49	27	20.00
In the kitchen	22	18.18	18	26.09	30	22.22
In the bedroom	12	18.18	20	28.99	32	23.70
In the bathroom	25	37.88	21	30.43	46	34.08
<b>The main reasons for the children injured</b>						
Children left at home alone	14	21.21	12	17.39	26	19.26
Caregivers were too young	14	21.21	18	26.09	32	23.70
Caregivers were careless	23	34.85	27	39.13	50	37.04
Other	15	22.73	12	17.39	27	20.00

Table 4.2 shows that 46.48% of the mothers in the urban district and 48.94% of the mothers in the rural district reported their children had been injured at home within six months prior to the study. The 16.42% of the urban mothers and 28.99% of the rural mothers reported that their children had seen a doctor because of injuries incurred at home. Regarding the types of home injury, it was found that children aged 5 to 9 years in this study had suffered from various types of causes. In the urban district 36.36% of the children experienced falls, 19.70% experienced animal bites and 10.61% experienced wounds by sharp objects, 33.33% experienced burns. In the rural district, 18.84% of the children suffered falls, 27.54% suffered

animal bites. 20.29% of the children suffered wound by sharp objects, 31.88% suffered burns and 1.45% suffered electrical injuries.

In this study, the places where the home injuries occurred to children aged 5 to 9 years were divided into four areas: living room, kitchen, bedroom, and bathroom. Table 4.2 shows that in the urban district, the area where most home child injuries occurred was in the bathroom (37.88%), followed by the living room (25.76%). Similarly, in the rural district, the highest number of home injuries occurred in the bathroom (30.43%), followed by the bedroom (28.99%).

When asked about the main reasons for the child injuries, 34.85% of the children were injured because the caregivers were careless, 21.21% were left at home alone, 21.21% because caregivers were too young. In the rural district, 17.39% of the children were injured because left at home alone, 26.09% because caregivers were too young and 39.13% because caregivers were careless.

#### **4.2 Knowledge of mothers regarding the prevention of child injuries at home in the urban and rural districts**

In this part, the mothers were asked about their knowledge of home injury types and environment factors. Types of home injury included main cause of death in children, most common cause of home injuries, where do home injuries occur, most common causation of falls, main cause of injury by sharp objects, behavior most likely to make an animal cause injury, cause of burn injuries. Environment factors which were included the type of home area where injuries occur, such as: type of window, type of front door, type of light, type of table, type of room and type of stair ways.

**Table 4.3** Frequency distribution of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts (types of injury)

Knowledge on home injury causation (types of injury)	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
	<b>Main cause of death in children aged 5 to 9 years old</b>					
Injury	97	68.31	108	76.60	205	72.44
Others	45	31.69	33	23.40	78	27.56
<b>Most common cause of home injuries to children aged 5 to 9 years</b>						
Falls	79	55.63	72	51.06	151	53.36
Others	63	44.37	69	48.94	132	46.64
<b>The place that home injuries occur most at home</b>						
In the living room	50	35.21	79	56.03	129	45.58
Others	92	64.79	62	43.97	154	54.42
<b>Most common causation of falls by children aged 5 to 9 years</b>						
Slipping	43	30.28	72	51.06	115	40.64
Others	99	69.72	69	48.94	168	59.36
<b>Main cause of injury by sharp objects to children aged 5 to 9</b>						
Knives, scissors	76	53.52	95	67.38	171	60.42
Others	66	46.48	46	32.62	112	39.58

**Table 4.3** Frequency distribution of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts (types of injury).  
(cont.)

Knowledge on home injury causation (types of injury)	Urban district		Rural district		Total	
	(N = 142)		(N = 141)		(N = 283)	
	N	%	N	%	N	%
<b>Behavior is most likely to make an animal cause injured</b>						
Disturbing the animal while eating	67	47.18	76	53.90	143	50.53
Others	75	52.82	65	46.10	140	49.47
<b>Cause of burn injuries</b>						
Hot water	78	54.93	99	70.21	177	62.54
Others	64	45.07	42	29.79	106	37.46

Table 4.3 shows that in the urban district, 68.31% of the mothers knew that injuries were the main cause of death in children aged 5 to 9, while in the rural district 76.60% of mothers knew that. Regarding to the most common cause of home child injuries, 55.63% of the mothers in the urban district and 51.06% in the rural district understood that falls were the most common cause of home injuries. Regarding the mothers' knowledge on the place where most home injuries occurred, more than a half (56.03%) of the mothers in the rural district and 35.21% of the mothers in the urban district said home injuries occur most often in the living room. The 30.28% of the urban mothers and 51.06% of the rural mothers said "slipping" was the main cause of falls.

The 53.52% of the urban mothers and 53.90% of the rural mothers answered that knives and scissors were cause of wound by sharp objects. This study found that 47.18% of the mothers in the urban district and 53.90% of the mothers in the rural district knew that "disturbing the animal while eating" was the main cause of

animal bites. Regarding the causes of burn injuries, 54.93% of the urban mothers and 70.21% of the rural mothers said hot water was the main cause of burn injuries in children.

**Table 4.4** Frequency distribution of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts (environment factors)

Knowledge on home injury causation (environment factors)	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
<b>Type of window is not a cause of home injury in children</b>						
Having good condition iron bars on all windows	86	60.56	107	75.89	193	68.20
Others	56	39.44	34	24.11	90	31.80
<b>Type of front door is not the cause of home injuries</b>						
Having front door with lock	84	59.15	111	78.72	195	68.90
Others	58	40.85	30	21.28	88	31.10
<b>Type of light is not a cause of home injuries</b>						
Enough bright light	81	57.04	110	78.01	191	67.49
Others	61	42.96	31	21.99	92	32.51
<b>Type of table is not a cause of home injury</b>						
Table in good condition	82	57.75	106	75.18	188	66.43
Others	60	42.25	35	24.82	95	33.57

**Table 4.4** Frequency distribution of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts (environment factors) (cont.)

Knowledge on home injury causation (environment factors)	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
<b>The place where serious injuries are most likely to happen</b>						
Falling from the stairs	74	52.11	93	65.96	167	59.01
Others	68	47.89	48	34.04	116	40.99
<b>Type of room is not cause of home injuries</b>						
Partitions for different purposes in good condition	74	52.11	94	66.67	168	59.36
Others	68	47.89	47	33.33	115	40.64
<b>Type of stairway is not cause of home injuries</b>						
Stairways have stair rails	86	60.56	101	71.63	187	66.08
Others	56	39.44	40	28.37	96	33.92

Table 4.4 shows that 60.56% of the urban mothers and 75.89% of the rural mothers said that windows in good condition iron bars were not a cause of home injuries. Regarding the type of front door, 59.15% of the mothers in the urban district and 78.72% of the mothers in the rural district agreed that having front door with lock was not the cause of home injuries. When asked about the type of light, 57.04% of the urban mothers and 78.01% of the rural mothers said enough bright light is not the cause of home injuries. The 57.75% of the urban mothers and 75.18% of the rural mothers agreed that table in good condition is not a cause of child injury at home.

Regarding where serious injuries are most likely to happen, 52.11% of the mothers in the urban district and 65.96% of the mothers in the rural district said falling from the stair is the main cause of serious injuries.

About type of room, 52.11% of the urban mothers and 66.67% of the rural mothers agreed that have partitions for different purposes in good condition is not cause of home injuries. The 60.56% of the mothers in the urban district and 71.63% of the mothers in the rural district said that stairways have stair rails is not a cause of child injury at home.

**Table 4.5** Frequency distribution of mothers' knowledge levels regarding the prevention of child injuries at home in the urban and rural districts (types of injury and environment factors)

Level	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
Good	40	28.17	53	37.59	93	32.86
Moderate	27	19.01	57	40.43	84	29.68
Low	75	52.82	31	21.99	106	37.46
Mean = 8.41	SD = 3.32					
Min = 1.00	Max = 14.00					

The mothers' knowledge was categorized into three levels. The knowledge level was good if the score was equal to or more than 11; the knowledge level was moderate if score from 8 to 10, and if score less than or equal 7 was the low knowledge level.

Table 4.5 shows that in the urban district, 28.17% of the mothers had good knowledge level, 19.01% had moderate knowledge level, and 52.82% had low knowledge level. However, in the rural district, 37.59% of the mothers had good knowledge level, 40.43% had moderate knowledge level, and 21.99% of the mothers had low knowledge level. The mean of score was 8.41; minimum 1.0, and the maximum 14.00.

### **4.3 Mother's attitude towards prevention of child injuries at home in the urban and rural districts**

This study focused on attitude of the mothers regarding preventing injuries to children at home. This part was divided into three types of attitude: attitude on hazards of home injury; attitude on the benefits of home injury prevention; and attitude on barriers to preventing injuries to children at home. Attitude on home injury hazard, mentioned to the severity and susceptibility of home injuries of children aged 5 to 9 years. The attitude on benefits of home injury prevention, related keeping children safe at home. The attitude on barriers to preventing injuries to children at home concerned the burden and non profit received by home injuries. All items in the attitude part allowed mothers to respond such as: agree, not sure or disagree.

**Table 4.6** Frequency distribution of mothers' attitude on hazards of home injury in the urban district

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude on hazards of home injury</b>						
Home injury is common in life, it can always happen	41	28.87	75	52.82	26	18.31
Home injury is a public health problem	59	41.55	41	28.87	42	29.58
Children have a greater of getting injured at home	78	54.93	27	19.01	37	26.06
Children can be injured several times at home	53	37.32	51	35.92	38	26.76
Children may suffered disability and pain because of home injuries	49	34.51	53	37.32	40	28.17
Children in rich family never have a problem with home injuries	31	21.83	37	26.06	74	52.11
Poor families can't protect their children from home injuries because they don't have enough time to take care of their children	33	23.24	34	23.94	75	52.82
Home injury is a cause of long-term absence from school	64	45.07	49	34.51	29	20.42
Children injuries have an impact health care services and costs of providing rehabilitation	59	41.55	42	29.58	41	28.87
Boys are more likely to act in ways that cause injuries than girls	65	45.77	41	28.88	36	25.35

For the mothers' attitude on hazards of home injury, table 4.6 shows that the urban mothers agreed toward to item "children have a greater of getting injured at home" was highest (54.93%). However, there was contrary on the mother's attitude on "poor families can't protect their children from home injuries because they don't have enough time to take care of their children" was accepted by mothers as disagreement was highest (52.82%).

**Table 4.7** Frequency distribution of mothers' attitude on hazards of home injury in the rural district

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude on hazards of home injury</b>						
Home injury is common in life, it can always happen	25	17.73	78	55.32	38	26.95
Home injury is a public health problem	40	28.37	51	36.17	50	35.46
Children have a greater of getting injured at home	66	46.81	37	26.24	38	26.95
Children can be injured several times at home	73	51.78	35	24.82	33	23.40
Children may suffered disability and pain because of home injuries	48	34.04	62	43.97	31	21.99
Children in rich family never have a problem with home injuries	32	22.70	36	25.53	73	51.77

**Table 4.7** Frequency distribution of mothers' attitude on hazards of home injury in the rural district. (cont.)

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude on hazards of home injury</b>						
Poor families can't protect their children from home injuries because they don't have enough time to take care of their children	36	25.53	44	31.21	61	43.26
Home injury is a cause of long-term absence from school	61	43.26	34	24.11	46	32.62
Children injuries have an impact health care services and costs of providing rehabilitation	41	29.08	68	48.22	32	22.70
Boys are more likely to act in ways that cause injuries than girls	61	43.26	40	28.37	40	28.37

For the mothers' attitude on hazards of home injury in the rural district, table 4.7 shows that the mother agreed toward to item "children have a greater of getting injured at home" was highest (51.77%). The item "children in rich family never have a problem with home injuries" with the mother's disagreement was high (51.77%).

**Table 4.8** Frequency distribution of mothers' attitude on benefits of home injury prevention in the urban district

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude of mothers on benefits of home injury prevention</b>						
Most home injuries could be prevented	47	33.10	40	28.17	55	38.73
Put hot objects out of reach of children can prevent burn for children	66	46.48	38	26.76	38	26.76
Having caregivers can not reduce the risk of home injuries in children	46	32.39	26	18.31	70	49.30
Home injury prevention save money for treatment of injuries	60	42.25	61	42.96	21	14.79
Keep animal at home can prevent animal bite for children	39	27.46	22	15.50	81	57.04
A good condition of house can reduce rate of home injuries in children	73	51.41	32	22.53	37	26.06
Keep knives and other sharp objects out of reach of children can not prevent home injuries by sharp objects	54	38.04	55	38.62	33	23.34

**Table 4.8** Frequency distribution of mothers' attitude on benefits of home injury prevention in the urban district. (cont.)

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude of mothers on benefits of home injury prevention</b>						
Home injury prevention can protect children from pain and disability	48	33.80	53	37.33	41	28.87
Home injury prevention avoid children getting hurt, fear and mental shock	60	42.25	45	31.69	37	26.06
Remove hazards on the floor or wherever possible can prevent falls children	72	50.70	30	21.13	40	28.17

Regarding to the mothers' attitude on benefits of home injury prevention in the urban district, table 4.8 shows that the percentage of the mothers agreed toward to item "a good condition of house can reduce rate of home injuries in children" was highest (51.41%). The 57.04% of the urban mothers disagreed to item "keep animal at home can prevent animal bite for children".

**Table 4.9** Frequency distribution of mothers' attitude on benefits of home injury prevention in the rural district

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude of mothers on benefits of home injury prevention</b>						
Most home injuries could be prevented	43	30.50	53	37.59	45	31.91
Put hot objects out of reach of children can prevent burn for children	49	34.75	55	39.01	37	26.24
Having caregivers can not reduce the risk of home injuries in children	35	24.82	45	31.92	61	43.26
Home injury prevention save money for treatment of injuries	49	34.75	48	34.04	44	31.21

**Table 4.9** Frequency distribution of mothers’ attitude on benefits of home injury prevention in the rural district. (cont.)

<b>Mothers’ attitude</b>	<b>Agree</b>		<b>Not sure</b>		<b>Disagree</b>	
	N	%	N	%	N	%
<b>Attitude of mothers on benefits of home injury prevention</b>						
A good condition of house can reduce rate of home injuries in children	60	42.55	45	31.92	36	25.53
Keep knives and other sharp objects out of reach of children can not prevent home injuries by sharp objects	49	34.75	50	35.46	42	29.79
Home injury prevention can protect children from pain and disability	40	28.37	52	36.88	49	34.75
Home injury prevention avoid children getting hurt, fear and mental shock	59	41.84	55	39.01	27	19.15
Remove hazards on the floor or wherever possible can prevent falls children	74	52.48	31	22.17	36	25.35

In the rural district, table 4.9 shows that 52.48% of the mothers agreed to item “remove hazards on the floors or wherever possible can prevent falls for children” was highest (52.48%), however, 43.26% of the mothers disagreed toward to item “having caregiver can not reduce the risk of home injuries in children”.

**Table 4.10** Frequency distribution of mothers' attitude on barriers to prevent injuries to children at home in the urban district

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude of mothers on barriers to prevent injuries to children</b>						
Prevent children from injuries needs more time	85	59.86	28	19.72	29	20.42
Children can play alone, don't need parent's supervision	44	30.99	31	21.83	67	47.18
I don't need to teach my children how to avoid home injury	33	23.24	34	23.94	75	52.82
Children injuries always occur at home	67	47.18	37	26.06	38	26.76
Children aged 5 to 9 years old can do any housework in bad condition of house	36	25.36	36	25.34	70	49.30
It is difficult to do everything possible to make home safe for children	60	42.25	38	26.76	44	30.99
It is easy to know where the children are, but difficult to see or reach the children	60	42.25	39	27.47	43	30.28

**Table 4.10** Frequency distribution of mothers' attitude on barriers to prevent injuries to children at home in the urban district.(cont.)

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude of mothers on benefits of home injury prevention</b>						
It is not necessary to learn about children safety	40	28.17	27	19.01	75	52.82
Children are less likely to be injured at home than those who play on street	35	24.65	30	21.12	77	54.23
Prevention of home injuries may require spending money, time and labor	36	25.35	40	28.17	66	46.48

With regard to the attitude of mothers on barriers to prevent injuries to children in the urban district, table 4.10 shows that, 59.86% agreed that prevent children from injuries needs more time, and "it is not necessary to learn about children safety" with 52.82% of the mothers disagreed.

**Table 4.11** Frequency distribution of mothers' attitude on barriers to prevent injuries to children at home in the rural district

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude of mothers on barriers to prevent injuries to children</b>						
Prevent children from injuries needs more time	67	47.52	40	28.37	34	24.11
Children can play alone, don't need parent's supervision	26	18.44	51	36.17	64	45.39
I don't need to teach my children how to avoid home injury	32	22.70	39	27.65	70	49.65
Children injuries always occur at home	51	36.17	56	39.72	34	24.11
Children aged 5 to 9 years old can do any housework in bad condition of house	41	29.08	35	24.82	65	46.10
It is difficult to do everything possible to make home safe for children	53	37.59	57	40.42	31	21.99
It is easy to know where the children are, but difficult to see or reach the children	54	38.30	52	36.88	35	24.82

**Table 4.11** Frequency distribution of mothers' attitude on barriers to prevent injuries to children at home in the rural district.(cont.)

Mothers' attitude	Agree		Not sure		Disagree	
	N	%	N	%	N	%
<b>Attitude of mothers on barriers to prevent injuries to children</b>						
It is not necessary to learn about children safety	31	21.99	38	26.95	72	51.06
Children are less likely to be injured at home than those who play on street	38	26.95	42	29.79	61	43.26
Prevention of home injuries may require spending money, time and labor	39	27.66	39	27.66	63	44.68

The mothers' attitude on barriers to prevent injuries to children at home, in the rural district, table 4.11 shows that the mothers disagreed toward to item "it is not necessary to learn about children safety" was highest (51.06%). However, there was contrary on the mother's attitude on "prevent children from injuries needs more time" was accepted by mothers as agreement was highest (47.52%).

**Table 4.12** Frequency distribution of mothers' attitude levels toward prevention of child injury in the urban and rural districts (hazards of home injury, benefits of home injury prevention and barriers to prevent injuries to children at home)

Level	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
High	62	43.66	61	43.26	123	43.46
Low	80	56.34	80	56.74	160	56.54
Mean = 63.75	SD = 7.204					
Min = 50	Max = 84					

Regarding to the mothers' attitude level, these were assigned into two levels of attitude, high attitude level was a mean and above, negative attitude was assigned less than mean of attitude score. Table 4.12 shows that the frequency distribution of high and low attitude levels were not different between rural and urban districts. It shows that, in the urban district, the high attitude level was 43.66%, low attitude level was 56.34%. In the rural district, the percentage was 43.26% and 56.54% respectively.

**Table 4.13** Sources of information on home child injuries in the urban and rural districts

Sources of information	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
<b>Media that mothers generally receive information (*multi choice)</b>						
Newspaper	107	75.35	109	77.30	216	76.33
Television	121	85.21	137	97.16	258	91.17
Posters	43	30.28	51	36.17	94	33.22
Handout	35	24.65	20	14.18	55	19.43
Magazines	38	26.76	25	17.73	63	22.26
Radio	15	10.56	52	36.88	67	23.67
<b>Personal that mothers generally receive information (*multi choice)</b>						
Friends	100	70.42	97	68.79	197	69.61
Family members	100	70.42	109	77.30	209	73.85
Health personal	71	50.00	83	58.87	154	54.52
Health volunteer	42	29.58	18	12.77	60	21.20

**Table 4.13** Sources of information on home child injuries in the urban and rural districts. (cont.)

Sources of information	Urban district (N = 142)		Rural district (N = 141)		Total (N = 283)	
	N	%	N	%	N	%
<b>Sources of information that you believe the most (*multi choice)</b>						
Newspaper	28	19.72	64	45.39	92	32.51
Television	73	51.41	112	79.43	185	65.37
Posters	36	25.35	69	48.94	105	37.10
Handout	28	19.72	41	29.08	69	24.38
Magazines	35	24.65	41	29.08	76	26.86
Radio	25	17.61	53	37.59	78	27.56
Friends	17	11.97	27	19.15	44	15.55
Family members	17	11.97	55	39.01	72	25.44
Health personal	12	8.45	41	29.08	53	18.73
Health volunteer	10	7.04	2	1.42	12	4.21
<b>Type of information about preventing injuries to children (*multi choice)</b>						
Causes	108	76.06	118	83.69	226	79.86
Treatment	98	69.01	102	72.34	200	70.67
Prevention	77	54.23	76	53.90	153	54.06
None	7	4.93	0	0	276	2.47

#### **4.4 Sources of information on home child injuries in the urban and rural districts**

Table 4.13 shows that 85.21% of the mothers in the urban district and 97.16% in the rural district generally receive information by television rather than from other forms of media. In term of individual, the 73.85% of the mothers also generally received information from family members. 4.23% of the mothers in the urban district and 53.90% of the mothers in the rural district said they received information about prevention of home child injuries.

When asked about which source that mothers believe the most, 51.41% in the urban district and 79.43% in the rural district said they believed the television most. About type of information on preventing injuries to children, 76.06% of the mothers in the urban district and 83.69% of the mothers in the rural district said that they received information about causes of injury. 69.01% of the urban mothers and 72.34% of the rural mothers said they received information how to respond when home injuries happen. The 54.23% of the mothers in the urban district and 53.90% of the mothers in the rural district said they received information about prevention of home child injuries.

**Table 4.14** Comparison of socio- demographics of mothers in the urban and rural districts

Characteristic	Urban	Rural	Total	$\chi^2$ (df)	P-value
	district	district			
	%	%	%		
<b>Education</b>					
Illiterate, primary school	2.82	2.13	2.47	17.59(3)	0.001**
Secondary school	9.86	20.57	15.20		
High school	18.31	31.91	25.09		
Above high school	69.01	45.39	57.24		
<b>Occupation</b>					
Housewife	5.63	2.84	4.24	50.83(3)	0.000**
Laborer	21.83	33.33	27.56		
Farmer	0	23.40	11.66		
Others (Government officer, teacher, doctor, public servant)	72.54	40.43	56.54		
<b>Family income</b>					
< 100,000- 990,000	5.63	30.50	18.02	43.12(2)	0.000**
1,000,000- 1,990,000	37.33	44.68	40.99		
More than 2,000,000	57.04	24.82	40.99		
<b>Type of family</b>					
Nuclear family	67.61	36.17	51.94	28.00(1)	0.000**
Extended family	32.39	63.83	48.06		
<b>The place that children aged 5 to 9 were born (Children number 1)</b>					
In the hospital	99.30	88.65	93.99	14.19(1)	0.000**
At home	0.70	11.35	6.01		

\*\* Significant at P-value &lt; 0.01

#### **4.5 Comparison of socio-demographics of mothers in the urban and rural districts**

Table 4.14 shows that more mothers (69.01%) in the urban district had above high school level of education than mothers in the rural district (45.39%). In the urban district a higher percentage of mothers (72.54%) were government officer, doctor, teacher or public servant than in the rural district (40.43%). It was found that there was a significant difference in income groups in the two districts,  $P$ -value = 0.000. In the urban district, 57.04% of mothers received more than 2,000,000 VND per month, but in the rural district, the percentage was 24.82%.

Mothers living in the urban district were more likely to have a nuclear family than those living in the rural district. The 63.83% of the mothers who lived in the rural district had extended families as opposed to 32.39% in the urban district ( $P = 0.000$ ). Considering where children aged 5 to 9 were born, 99.30% of the children in the urban district were born in a hospital, which was significantly higher than in the rural district ( $P = 0.000$ ).

**Table 4.15** Comparison of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts (types of injury)

<b>Knowledge on home injury causation (types of injury)</b>	<b>Urban district</b>	<b>Rural district</b>	<b>Total</b>	<b><math>\chi^2</math> (df)</b>	<b>P-value</b>
	%	%	%		
<b>The place that home injuries occur most at home</b>					
In the living room	35.21	56.03	45.58	12.36(1)	0.000**
Others	64.79	43.97	54.42		
<b>Most common causation of falls by children aged 5 to 9</b>					
Slipping	30.28	51.06	40.64	12.66(1)	0.000**
Others	69.72	48.94	59.36		
<b>Main cause of injury by sharp objects to children aged 5 to 9</b>					
Knives, scissors	53.52	67.38	60.42	5.67(1)	0.017*
Others	46.48	32.62	39.58		
<b>Causes of burn injuries</b>					
Hot water	54.93	70.21	62.54	7.05(1)	0.008**
Others	45.07	29.79	37.46		

\* Significant at P-value &lt; 0.05

\*\* Significant at P-value &lt; 0.01

## **4.6 Comparison of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts**

The knowledge of mothers was considered under two headings: knowledge of mothers on types of injury, and knowledge of mothers on environment factors.

### **4.6.1 Comparison mothers' knowledge regarding the prevention of child injuries at home in the urban and rural district (types of injury)**

Table 4.15 was formed by comparison between the mothers' knowledge on types of injuries in the rural and urban districts. There were significant differences between the two districts in four variables, the place where home injuries occur, most common causation of falls, main cause of home injuries by sharp objects, and cause of burn injuries. The percentage of the mothers in the rural district who knew that injuries occurred most in the living room was significantly higher than the percentage of the mothers in the urban district, 56.03% and 35.21% respectively (P-value= 0.000). Similarly, when asked about the most common cause of falls, 51.06% of the mothers in the rural district chose "slipping" as the most common cause, significantly higher than in the urban district, 51.06% and 30.28% respectively (P-value=0.000). For the main cause of injury by sharp objects, 67.38% of the rural mothers and 53.52% of the urban mothers chose "knives, scissors" as the main cause (P-value=0.017). Considering the causes of burn injuries, there was also a difference between the urban and rural districts, 70.21% of the mothers in the rural district and 54.39% of the mothers in the urban district chose "hot water" (P- value = 0.008).

**Table 4.16** Comparison of mothers' knowledge levels regarding the prevention of child injuries at home in the urban and rural districts (types of injury)

Item	Urban district	Rural district	Total	$\chi^2$ (df)	P-value
	%	%	%		
Good	13.38	21.28	17.31	6.89(2)	0.032*
Moderate	18.31	25.53	21.20		
Low	68.31	53.19	60.78		

\* Significant at P-value < 0.05

Regarding to the level of mothers' knowledge, table 4.16 shows that there was a significant difference between urban and rural district. In the rural district, a higher percentage of mothers (21.28%) had good knowledge than in the urban district (13.38%).

**Table 4.17** Comparison of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts (environment factors)

Knowledge on home injury causation (environment factors)	Urban district	Rural district	Total	$\chi^2$ (df)	P-value
	%	%	%		
<b>Type of window is not a cause of home injury</b>					
Having good condition iron bars on all windows	60.56	75.89	68.20	7.65(1)	0.006**
Others	39.44	24.11	31.80		
<b>Type of front door is not the cause of home injury</b>					
Having front door with lock	59.15	78.72	68.90	12.64(1)	0.000**
Others	40.85	21.28	31.10		
<b>Type of light is not a cause of home injury</b>					
Enough bright light	57.04	78.01	67.49	14.18(1)	0.000**
Others	42.96	21.99	32.51		
<b>Type of table is not a cause of home injury</b>					
Table in good condition	57.75	75.18	66.43	9.63(1)	0.002**
Others	42.25	24.82	33.57		
<b>The place where serious injuries are most likely to happen</b>					
Falling from the stairs	52.11	65.96	59.01	5.60(1)	0.018*
Others	47.89	34.04	40.99		

**Table 4.17** Comparison of mothers' knowledge regarding the prevention of child injury at home in the urban and rural districts (environment factors).  
(cont.)

<b>Knowledge on home injury causation (environment factors)</b>			<b>Urban district</b>	<b>Rural district</b>	<b>Total</b>	<b><math>\chi^2</math> (df)</b>	<b>P-value</b>
			%	%	%		
<b>Type of room is not cause of home injury</b>							
Partitions for different purposes in good condition			52.11	66.67	59.36	6.21(1)	0.013*
Others			47.89	33.33	40.64		
<b>Type of stairway is not a cause of home injury</b>							
Stairways have stair rails			60.56	71.63	66.08	3.86(1)	0.049*
Others			39.44	28.37	33.92		

\* Significant at P-value < 0.05

#### **4.6.2 Comparison of mothers' knowledge regarding the prevention of child injuries at home in the urban and rural districts (environment factors)**

Table 4.17 showed that percentage of the mothers in the rural district, who thought that "having good condition iron bars on all windows" was significantly higher than the percentage of the mothers in the urban district (75.89% and 60.56% respectively, which P-value=0.006). Considering "type of front door is not a cause of home injuries", 78.72% of the rural mothers chose "front door with lock" as not the cause, significantly higher than in the urban district (P-value=0.000).

For the type of light is not a cause of home injuries, there was also a difference between the urban and rural districts, 78.01% of the mothers in the rural and

57.04% of the mothers in the urban district chose “enough bright light” as not a cause (P-value=0.000).

For the item “type of table is not a cause of home injuries”, 75.18% of the rural mothers chose “table in good condition” as not a cause, significantly higher than in the urban district (P-value=0.000). Similarly, when asked about the place where serious injuries are most likely to happen, there was a significant difference between the rural and urban district: 65.89% of the rural mothers and 52.11% of the urban mothers chose “falling from the stairs” (P-value=0.018). Regarding “type of room is not cause of home injury”, 66.67% of the rural mothers and 52.11% of the urban mothers chose “partitions for different purposes in good condition”. The percentage of the mothers who chose “stairways have stair rails” as not a cause of home injuries significantly different in two districts, the percentage was 71.63% in the rural district, it was 60.56% in the urban district.

**Table 4.18** Comparison of mothers’ knowledge levels regarding the prevention of child injuries at home in the urban and rural districts (environment factors)

Item	Urban	Rural	Total	$\chi^2$	P-value
	district	district			
	%	%	%	(df)	
Good	36.62	50.35	43.46	18.63(2)	0.000*
Moderate	9.86	20.57	15.20		
Low	53.52	29.08	41.34		

\* Significant at P-value < 0.01

Table 4.18 shows that in the rural district, 50.35% of the mothers had good knowledge level, the mothers’ knowledge moderate level was 20.57%, not so quiet different with the proportion low knowledge level (29.08%). However, in the urban district, the mothers’ knowledge moderate level was lowest proportion (9.86%),

36.62% of the mothers had good knowledge level and 53.52% had low knowledge level.

**Table 4.19** Comparison of mothers' knowledge levels in the urban and rural districts (types of injury and environment factors)

Item	Urban district	Rural district	Total	$\chi^2$ (df)	P-value
	%	%	%		
Good	28.17	37.59	32.86	30.79(2)	0.000*
Moderate	19.01	40.42	29.68		
Low	52.82	21.99	37.46		

\* Significant at P-value < 0.01

Table 4.19 shows that there was a significant difference between the mothers' knowledge on home injuries in the rural and urban districts. In the rural district, there was higher percentage of mothers with good knowledge level than in the urban district, which 37.59% in the rural district and 28.17% in the urban district (P-value= 0.000).

**Table 4.20** Comparison of mothers' attitude on hazards of home injury in the urban and rural districts

Mother's attitude	Agree	Not sure	Disagree	$\chi^2$ (df)	P-value
	%	%	%		
<b>Attitude on hazards of home injury in the urban district</b>					
Home injury is common in life, it can always happen	28.87	52.82	18.31	6.18(2)	0.045*
Children can be injured several times at home	37.32	35.92	26.76	6.50(2)	0.039*
Home injury is a cause of long-term absence from school	45.07	34.51	20.42	6.63(2)	0.036*
Children injuries have an impact health care services and costs of providing rehabilitation	41.55	29.58	28.87	10.49(2)	0.005**
<b>Attitude on hazards of home injury in the rural district</b>					
Home injury is common in life, it can always happen	17.73	55.32	26.95	6.18(2)	0.045*
Children can be injured several times at home	51.77	24.83	23.40	6.50(2)	0.039*
Home injury is a cause of long-term absence from school	43.26	24.12	32.62	6.63(2)	0.036*
Children injuries have an impact health care services and costs of providing rehabilitation	29.08	48.22	22.70	10.49(2)	0.005**

\* Significant at P- value &lt;0.05

\*\* Significant at P- value &lt; 0.01

## **4.7 Comparison of mothers' attitude towards prevention of child injuries at home in the urban and rural districts**

The attitude of mothers were considered into three headings: attitude on hazards of home injury, attitude on benefits on home injury prevention and attitude on barriers to preventing injuries to children at home.

### **4.7.1 Comparison of mothers' attitude on hazards of home injury the urban and rural districts**

Few mothers disagreed that home injury is common in life and can always happen (18.31% of mothers in the rural district and 26.95% of the mothers in the urban district), P-value=0.045.

Table 4.20 shows that 37.32% of the urban mothers and 51.77% of the rural mothers agreed that children can be injured several times at home, P-value=0.039. Considering "home injury is a cause of long-term absence from school", 45.07% of the mothers in the urban district and 43.26% of the mothers in the rural district agreed. The result was significantly difference between the two districts, P-value= 0.036. The percentage of the mothers who agreed "child injuries have an impact health care services and costs of providing rehabilitation" significantly different in the urban and rural district. In the urban district, the percentage was 41.55%, in the rural district, it was 29.08%, P-value=0.045.

**Table 4.21** Comparison of mothers' attitude levels on hazards of home injury in the urban and rural districts

Item	Urban district	Rural district	Total	$\chi^2$	P-value
	%	%	%	(df)	
High	50.00	48.23	49.12	0.08(1)	0.765
Low	50.00	51.77	50.88		

Table 4.21 shows that there was no significant difference on mothers' attitude level on hazard of home injury in urban and rural districts, in which P-value=0.765. Regarding the high attitude level, it was equal among mothers of both districts.

**Table 4.22** Comparison of mothers' attitude on benefits of home injury prevention in the urban and rural districts

Mothers' attitude	Agree	Not sure	Disagree	$\chi^2$	P-value
	%	%	%	(df)	
<b>Attitude on benefits of home injury prevention in urban district</b>					
Having caregiver can not reduce the risk of home injuries in children	32.39	18.31	49.30	7.19(2)	0.027*
Home injury prevention save money for treatment of injuries	42.25	42.96	14.79	10.79(2)	0.005**
<b>Attitude on benefits of home injury prevention in rural district</b>					
Having caregiver can not reduce the risk of home injuries in children	24.82	31.92	43.26	7.19(2)	0.027*
Home injury prevention save money for treatment of injuries	34.75	34.04	31.21	10.79(2)	0.005**

\* Significant at P-value < 0.05

\*\* Significant at P-value < 0.01

#### 4.7.2 Comparison of mothers' attitude on benefits on home injury prevention in the urban and rural districts

Table 4.22 shows that 49.30% of the urban mothers and 43.26% of the rural mothers disagreed that item caregivers cannot reduce the risk of home injuries in children, P-value=0.027. The percentage of the mothers who agreed that preventing home injuries saves money for treatment of injuries was significantly different in the urban and rural districts, (42.25% of the mothers in the urban district and 34.75% in the rural district, which P-value=0.005).

**Table 4.23** Comparison of mothers' attitude levels on benefits of home injury prevention in the urban and rural districts

Item	Urban district	Rural district	Total	$\chi^2$	P-value
	%	%	%	(df)	
High	45.77	43.97	44.88	0.09(1)	0.76
Low	54.23	56.03	55.12		

Regarding to mothers' attitude level on benefits of home injury prevention, table 4.23 shows that there was not significant difference between rural and urban districts, P-value=0.76. In the rural and urban districts, more than a half of the mothers had low attitude level (56.03% and 54.23%, respectively).

**Table 4.24** Comparison of mothers' attitude on barriers to prevent injuries to children at home in the urban and rural districts

Mothers' attitude	Agree	Not sure	Disagree	$\chi^2$	P-value
	%	%	%	(df)	
<b>Attitude on barriers to prevent injuries to children at home in the urban district</b>					
Children can play alone, don't need parent's supervision	30.99	21.83	47.18	9.57(2)	0.008**
Children injuries always occur at home	47.18	26.06	26.76	6.27(2)	0.044*
<b>Attitude on barriers to prevent injuries to children at home in the rural district</b>					
Children can play alone, don't need parent's supervision	18.44	36.17	45.39	9.57(2)	0.008**
Children injuries always occur at home	36.17	39.72	24.11	6.27(2)	0.044*

\* Significant at P- value < 0.05

\*\* Significant at P- value < 0.01

Table 4.24 shows that 47.18% of the urban mothers and 45.39% of the rural mothers disagreed that "children can play alone, don't need parent's supervision" P-value= 0.008. In the urban district, a higher percentage of mothers agreed that children injuries always occur at home than in the rural district (47.18% and 36.17% respectively).

**Table 4.25** Comparison of mothers' attitude levels on barriers to prevent injuries to children at home in the urban and rural districts

Item	Urban district	Rural district	Total	$\chi^2$ (df)	P-value
	%	%	%		
High	46.48	43.26	44.88	0.29(1)	0.58
Low	53.52	56.74	55.12		

Regarding to the mothers' attitude level on barriers to prevent injuries to children at home, table 4.25 shows that there was no significant difference between the two districts on mothers' attitude level on barriers to practice preventive behaviours toward to home injury prevention, in which P-value=0.58.

**Table 4.26** Comparison of mothers' attitude levels on hazards of home injury, benefits of home injury prevention and barriers to prevent injuries to children at home in the urban and rural districts

Item	Urban district	Rural district	Total	$\chi^2$ (df)	P-value
	%	%	%		
High	43.66	43.26	43.46	0.19(2)	0.946
Low	56.34	56.74	56.54		

In table 4.26, high and low attitude level of the mothers in both the two districts were not difference, the 43.66% of mothers in the urban district and 43.26% of mothers in the rural district had high attitude level.

**Table 4.27** Comparison of sources of information on home child injuries in the urban and rural districts

Item	Urban	Rural	Total	$\chi^2$ (df)	P-value
	district	district			
	%	%	%		
<b>Media that mothers generally receive information (*multi choices)</b>					
Television	85.21	97.16	91.17	12.54(1)	0.000**
Handout	24.65	14.18	19.43	4.94(1)	0.026*
Radio	10.56	36.88	23.67	27.11(1)	0.000**
<b>Personal that mothers generally receive information (*multi choices)</b>					
Health volunteer	29.58	12.77	21.20	11.96(1)	0.001**
<b>Sources of information that you believe the most (*multi choices)</b>					
Newspaper	19.72	45.39	32.51	21.25(1)	0.000**
Television	51.41	79.43	65.37	24.54(1)	0.000**
Posters	25.35	48.94	37.10	16.86(1)	0.000**
Radio	17.61	37.59	27.56	14.15(1)	0.000**
Family members	11.97	39.01	25.44	27.26(1)	0.000**
Health personal	8.45	29.08	18.73	19.77(1)	0.000**
Health volunteer	7.04	1.42	4.24	5.51(1)	0.019*

\* Significant at P-value &lt; 0.05

\*\* Significant at P-value &lt; 0.01

#### **4.8 Comparison of sources of information on home child injuries in the urban and rural districts**

Table 4.27 shows that there were significant differences between the two districts when comparing the three variables, media from which mothers generally receive information, individuals from whom mothers generally receive information, and the sources which mothers believed the most. In both the two areas, television was the most frequent source of information about home child injuries (85.21% in the urban district and 97.16% in the rural district, in which  $P\text{-value}=0.000$ ). On the other hand, when asked about individuals from whom they generally received information, 12.77% of the mothers in the rural district and 29.58% of the mothers in the urban district said that they information from health volunteers,  $P\text{-value}=0.001$ . In the rural district, a higher percentage of mothers (79.43%) said they believed information from television most, than in urban district (51.41%),  $P\text{-value}=0.000$ .

## CHAPTER V

### DISCUSSION

#### 5.1 Socio-demographic factors

This was a cross-sectional study to describe the knowledge and attitude of mothers with children aged 5 to 9 years old regarding the prevention of child injuries at home in Hoankiem district (urban district) and Donganh district (rural district) in Vietnam, with respect to the socio-demographic characteristics, knowledge, attitude and cues to action. This study contributes to the understanding of home injuries in terms of mothers' knowledge and attitudes. The data was collected by structured questionnaire and was analyzed based on the study objectives.

Unsurprisingly there were differences between the rural district and the urban district in many characteristics, such as education of the mothers, occupation, family income and type of family. There were significant differences of the place where was children born and characteristics of the children. The results reflect the predictable differences of these two comparative districts. Generally, in the rural district, the type of family was an extended family and relatives preferred living together in a house. By contrast, in the urban district, there were only nuclear families and only parents and their children in one house. The number of mothers in the rural district who had had secondary school education level was more than twice that in the urban district. A higher percentage of mothers living in the rural district were 20-29 years old than in the urban district. Similarly, the percentage of mothers in the rural district who were agriculturalists was higher than in the urban district. The percentage of government officer, doctor, teacher and public servant in the urban district were higher than in the rural district. Similarly, in the urban district, twice as many mothers had high incomes (> 2,000,000 VND) than in the rural district.

Ideally, for academic research, groups being compared should be identical in all respects, except for the particular characteristic under investigation. In this cross-sectional study, there were differences in the distribution of variables, especially socio-demographic characteristics and knowledge of mothers regarding the prevention of child injuries at home, between the rural and urban districts. Accordingly, the results should be interpreted carefully.

In this study, in the urban district, 46.48% of children in the urban district and 48.94% in the rural district had been injured at home. In one study conducted by Dan TX in Thainguyen Province (29), the proportions of children injured at home in the urban district was 53.20% and 30.40% in the rural district. The proportion of children with fall injuries in this research was 36.36% and 18.84%, in the urban and rural district respectively. This can be compared to the study of Thang NV in Vietnam (5), in which 48.60% of the children in a rural area and 38.30% in an urban area suffered falls.

This study shows that 19.70% of children in the urban district were injured by animal bites, whereas the proportion of those in the rural district was 27.54%. It was similar to the study of Anh LV et al (24) about the risk factors of child injury, which found that 22.64% of children were injured by animals.

In this study, the percentage of children injured by sharp objects in the urban district was lower than in the rural district (10.61% and 20.29% respectively). By contrast, another study conducted in 2004 by Dan TX (29) showed that 10.8% of children in an urban area and 4.2% of the children in a rural area were wounded by sharp objects. 16.42% of the urban mothers and 28.99% of the rural mothers reported that their children had seen a doctor because of home injuries. Gilbride SJ et al (35) in their study about childhood injuries, which found that children living in rural area had significantly higher rates of hospitalization for injuries than those living in the rural area.

With regard to injury by electricity, 0.74% of the children were injured this way in this study. This is consistent with a WHO study (20), which found that 0.80% of the children were injured by electricity.

Regarding the place of child injury in this study, 18.18% of the children in the urban district and 26.09% of the children in the rural district were injured at home in the kitchen. It was similar to the result of a study conducted by Thein MM in Singapore, which showed that 17.70% of children got home injury in the kitchen. Similarly, in this study, the 18.18% of children in the urban district and 28.09% of children in the rural district were injured at home in the bedroom. This compares with a study conducted in 2005 by Lee BW (19), which showed that 13.80% of the children were injured in the bedroom.

Surprisingly, compared with other places at home such as the living room, kitchen and bedroom, in this study the highest proportion of child injuries occurred in the bathroom (37.88% in the urban district and 30.43% in the rural district). The result was not similar to the study conducted on knowledge, attitude and practices of childhood injuries (19), which found that most children were injured in the living room (54.70%). The difference explained by differences in the condition of houses in Vietnam and in Singapore, and in the characteristics of the children.

## **5.2 Knowledge of mothers regarding the prevention of child injuries at home**

The difference of mother's knowledge level on home injury between two districts (28.17% of the urban mothers in compare to 37.59% of rural mothers had good knowledge on home injury) might be because, the rural mothers had more experiences of home child injury prevention than the urban mothers did. Children in the rural district could spent time with the mothers than children in the urban district. However, in Vietnam, the urban mothers usually leave their children to the caregivers. In the same way, this study found that 32.39% of the mothers in the urban district,

63.83% of the mothers in the rural district lived in extended families. In extended families, mothers had more opportunity of learning on home child injury from the other family members. In this study, 57.04% of the mothers in the urban district had high incomes (more than 2,000,000 VND), while in the rural district, the high-income group of mothers compared only 24.82%. Similarly, a study about unintentional childhood injury-child safety concerns and beliefs showed that parents in low-income households showed more concern than parents in higher-income households (31).

In this study, in the rural district, the knowledge level of mothers was 37.59% good, 40.43% moderate and 21.99% low. Compared with a study about factors related to preventive behavior on home injury, by Anh T T, in 2007, the results were: 16.6% for good knowledge, 63.4% moderate and 20.0% low knowledge level. (30). The reasons for result difference might be the difference of the area .

The percentage of urban mothers said that injury is the main cause of death in children was 68.31%. Another report on childhood injury in USA showed that 58% of the parents were aware that unintentional injury is the number one killer of children (31).

### **5.3 Attitude of mothers towards preventing injuries to children at home**

This study found that in the urban district, the percentage of mothers who had high attitude level towards prevention of child injuries at home was 43.66%, the proportion of those in the rural district was 43.26%. The percentage of mothers who had low attitude level in the urban district was 56.34%, and 56.74% of those in rural district had low attitude level. The result was not much different from a previous study, which found that, in a rural area, 52.7% of the mothers had high attitude level (30).

## 5.4 Comparison of mothers' knowledge in the urban and rural districts

There were significant differences in mothers' knowledge on preventive home child injuries.

Regarding to item "where do home injuries occur most at home", 35.21% of the mothers in the urban district had correct answer (living room), the proportion of mothers had correct answer in the rural district was higher (56.03%). It is because, in the rural district, some houses not have partitions for different purposes, such as: walls, doors or wooden frames between the living room and bedroom. However, in the urban district, most of the houses had room borders with partitions.

Similarly, a higher percentage of mothers in the rural district said that slipping was the main cause of falls than in the urban district (51.06% and 30.28% respectively). The reason for this difference between the two districts is that, in the urban district, some of the houses use wood floors, or cover the floor with rugs, so that children may fall with differently (e.g. jumping or overbalancing, rather than slipping).

The percentage of the mothers in the rural district said "knives and scissors" were the main cause of injury by sharp object was 67.38%, and in the urban district, it was 53.52%. This is because in the rural district, they use knives and scissors for agriculture work, and not keep far away from the children, so that the percentage of mothers in the rural district said knives and scissors are the main cause of injury by sharp objects was higher than in the urban district.

The percentage of the mothers in the urban district said that hot water is the cause of burn injuries was also lower than the percentage of the mothers in the rural district (54.93% and 70.12% respectively). This difference result explained by the fact that, in the rural district, the condition of the houses also was not very good,

and people don't care much about where they put hot water. However, in the urban district, people keep hot water properly.

### **5.5 Comparison of mothers' attitude towards prevention of child injuries at home in the urban and rural districts**

Attitude of mothers was considered under three headings: hazards of home injury, benefits of mothers implementing preventive behavior and barriers to implementation.

In this study, 42.25% of urban mothers and 30.28% of rural mothers said that it is easy to know where the children are, but difficult to see or reach the children. This is consistent with the result of a study conducted by Thein MM, which showed that 38% of mothers said they usually know where their children are but are not always able to see or reach them. Surprisingly, 41.55% of the mothers in the urban district agreed that child injuries have an impact health care services and costs of providing rehabilitation", as opposed to 29.08% of the mothers in the rural district. This due to the difference in the cost of health care service in urban and rural districts.

46.48% of the mothers in the urban district and 34.75% in the rural district agreed that putting hot objects out of reach of children could prevent burns for children. There might be the difference of condition of the houses in the urban and rural districts. Some houses in the rural district do not have partitions for different purposes, such as a kitchen for cooking.

The result of this study shows that a higher percentage of mothers in the urban district agreed that having a caregiver could not reduce the risk of home injuries for children than in the rural district (49.30% and 43.26% respectively). This might be due to the education level of the caregivers. Most of the caregivers in Vietnam, such as domestic helps and servants are not educated about how to take care of children. Even though there are many caregivers, the rate of home child injury in Vietnam is

still high. Similarly, a study in American about the role of supervision in prevention (31) showed that, level of supervision (or caregiver) affect to injury risk, supervision or caregivers level decreased, there was an increase in the frequency of children's injuries.

The 42.25% of the mothers in the urban district and 34.75% of the mothers in rural district agreed that home injury prevention saves money for treatment of injuries. The significant difference between the two districts maybe because the mothers thought that preventing home injury can reduce the rate of child injuries, but when the children are injured, the treatment cost is high.

Interestingly, 47.18% of the mothers in the urban district and 45.39% in the rural district disagreed that children playing alone, do not need parental supervision. This is because, most mothers in both districts think that they can leave their five to nine years old children alone. In Vietnam, children aged 5 to 9 can also help their parents do housework, and the mothers in rural districts let children aged 5 to 9 years old take care of younger children. In the USA, one report conducted in 2008 on child safety showed that only 39% of the parents said that should not let children should not be allowed to play alone at home (31).

Surprisingly, 47.18% of the mothers in the urban district but only 36.17% in the rural district agreed that child injuries always occur at home. The result showed a significant difference between the two districts. This because of different house conditions in the urban district and rural district. Most of the families in the urban district let their children stay and play inside the house, whereas in the rural district, house conditions are not very good and some houses have no partitions for different purposes in good condition, so that the mothers let their children play in the garden, playground or nearby the house. In this study, 52.82% of the urban mothers and 51.05% of the rural mothers said that it was necessary to learn about child safety. A study in the USA showed that 77% of parents think they need to learn more about child safety (31). It maybe the difference on knowledge of mothers in difference area: in Europe and in Asia area.

## 5.6 Sources of information on home child injuries (cue to action)

Sources of information about home child injury were considered under the following headings: media from which mothers generally receive information; individuals from whom mothers generally receive information; the sources, which the mothers believed the most; and the type of information about preventing injuries to children that they received.

According to this study, television was the most frequent source of information about home child injury (85.21% in the urban district and 97.16% in the rural district). This is consistent with a previous study in Vietnam conducted by Anh TT, which showed that 98.1% of the mothers received information from television (30). The second leading source of information about home child injury was newspapers (75.35% in the urban district and 77.30% in the rural district). There was a significant difference between the two districts. Nowadays, urban districts may have more sources of information than rural districts, such as the internet. This may also explain why the proportion of the mothers who received information from radio in the rural district was higher than in the urban district.

The percentage of the mothers in the urban district replying that they received information about home child injury from family members was 70.42%, similar to a study conducted by Bun PY et al in Singapore (21), which showed that 66.7% of the mothers received information about child safety from relatives. This study showed that 50.00% of urban mothers and 58.87% of rural mothers said that they generally receive information from health personal (doctors, nurses). Similarly, one report in the USA showed that to learn more about preventing injuries to children, 55.00% of the parents often look to doctors (31). There was also a significant difference between the urban and rural districts about the source that mothers believed the most. The difference due to the difference in condition between the two districts, and the difference of knowledge and attitude regarding preventing injuries to children at home between the rural and urban districts.

## CHAPTER VI

### CONCLUSION AND RECOMMENDATION

#### 6.1 Conclusion

This cross sectional study aimed to reveal the knowledge regarding the prevention of injuries to children aged between 5 to 9 years old at home in Hoankiem district (urban district) and Donganh district (rural district), Vietnam during January, 2010. 283 mothers of primary school children in 2 primary schools were selected by the simple random sampling technique. Details of related factors were obtained by face to face-structured questionnaire. The questionnaire interviews covered a total 283 mothers (142 in Hoankiem district-urban district, and 141 mothers in Donganh district-rural district). Using a chi- square test performed comparisons of categorical variables between the two districts.

These two districts (urban and rural district) differed in many characteristics such as: education, occupation, family income, type of family, place that children were born.

This study found that the mothers in the rural district had better knowledge on home injury than those in the urban district. There was a significantly difference of level of mother's knowledge on home injury between the urban district and rural district ( $P$ -value= 0.000). In the urban district, 28.17% of the mothers had good knowledge level, 19.01% got moderate knowledge level and 52.82% got low knowledge level on home injury. In the rural district, 37.59% got good knowledge level, 40.43% got moderate knowledge level and 37.46% got low knowledge level.

Attitude towards prevention of child injuries at home did not significantly differ by urban and rural district ( $P$ -value = 0.905). The frequency distribution of high

attitude level of mothers in the urban district was 43.66% and low attitude level was 56.34%. In the rural district, the frequency distribution of high attitude level of mothers was 43.26%, low attitude level was 56.74%.

Regarding the mass media from which mothers generally receive information, there was a significant difference between the two districts. In the urban district, 85.21% of the mothers received information from television, 24.65% received information from handouts and 10.56% receive information from the radio. In the rural district, the proportion of mothers receiving information from television was 97.16%, from handouts 14.18% and from the radio 36.88%. There was a significant difference in individual from who mothers generally received information. 29.58% of the mothers in the urban district said they received information from health volunteers; the proportion of those in the rural district was 12.77%. In both the rural and urban districts, television was the source that mothers believed the most, and family members were the persons that mothers believed most.

According to the variety of community's characteristics, the result of this study should not be generalized throughout all districts in the country. The findings from the two districts may not represent all areas in the city.

## **6.2 Recommendation**

### **6.2.1 Knowledge and attitude of mothers regarding the prevention on home child injury**

1. In both districts, the mothers' knowledge on home injury prevention was low. Mothers' knowledge should be improved about home injury hazard, types of home injury, where home injuries occur, and how to prevent home injuries. Every health worker should help mothers improve their knowledge and skills of home injury prevention; and help educate mothers and caregivers about home safety and first aid. To be effective, educational aids should be in the form of videos, posters or pamphlets. Mothers' groups might be organized to exchange experiences and find appropriate local solutions for prevention and control of home child injuries.

Mothers should be encouraged to arrange and proud for a safe home environment. They need to be aware of roofs or stairs without railings, broken stairs or unsafe floors, unsafe electricity wires, unsafe cooking places, fires or stoves, keeping sharp instrument (knives, scissors) safely out of children's reach, the need to supervise small children and babies carefully.

2. In both the urban and rural districts, the mothers had high attitude level towards prevention of child injury at home still low. We should help mothers to change their attitude, encourage them to share their good experiences on home injury prevention to others by difference ways, such as: group discussion, demonstration, or through activities. Health workers and local administrators should inform and encourage mothers to attend a national safe house program "child –safe home". Later, the community health workers might take over the training on an individual basis and according to need.

3. There needs to be integrated and developed guidelines between school and home. Children may profit from educational games, learning songs, role-playing or learning through activities. With the aimed of decreasing the rate of home child injuries, children should be involved in finding out which are the most common dangers at their home. They also should consider how potential accident places can be prevented, and should know what they can do if an injuries happens at home.

### **6.2.2 Mass media and communication products**

This study found that television was the source that mothers believed the most. So it can be used as a reminder of to draw attention to the home child injury problem. Also, engineers should be engaged to help improve the safety of the indoor environment.

### **6.2.3 Health workers and health volunteers**

Health professionals can train paramedical, volunteer workers, teachers, nursery staff, caregivers and community health workers about home injury prevention and control.

#### **6.2.4 National programs and projects**

1. At the national level, the ministries of health can train professionals and paramedical to educate people about the prevention of home child injuries. Ministries of education can incorporate safety and injury prevention into the curriculum for primary school children, and train teachers in communicating this material to the children. Ministries of communications and information can use the mass media to increase the awareness of parents about prevention of home injuries, and can supply educational and informational materials.

2. In hospitals or primary health care centers, rooms or even a corner is needed for education of parents on home child injuries.

#### **6.2.5 Recommendations for future research**

This study was performed by using knowledge and attitude investigation and observation presence of home child injuries at home. There were two main topics in questionnaire, knowledge of mothers regarding the prevention of child injuries at home, and attitude towards prevention of child injuries at home. But for a more completed explanation in one comprehensive model, the knowledge and attitude towards unintentional injuries at home, preventive behavior on home injury, and other involved environment variables are required. So that for in depth information, a qualitative study should be performed parallel to the quantitative study.

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## QUESTIONNAIRES

### MATERNAL KNOWLEDGE AND ATTITUDE REGARDING THE PREVENTION OF CHILD INJURIES AT HOME IN HOANKIEM DISTRICT AND DONGANH DISTRICT, VIETNAM

#### Background information

Hoankiem District [  ]      Donganh District [  ]

Date of interview ..... /...../.....

#### Part 1 : Socio- Demographic Factors

Instruction: Please fill in the blank or tick ✓ in the appropriate box [  ] to answer the questions

1. Mother's age.....years old

2. Marital status :

1 [  ] Married

2 [  ] Widow

3 [  ] Separated/ Divorced

4 [  ] Single

3. Highest education level of mother

1 [  ] Uneducated

2 [  ] Primary school

3 [  ] Secondary school

4 [  ] High school

5 [  ] Diploma

6 [  ] Bachelor

7 [  ] Higher than Bachelor's degree

8 [  ] Other, please specify.....



18. Where were your children injured within last six months ?

- |                          |                                  |
|--------------------------|----------------------------------|
| 1 [ ] In the living room | 4 [ ] In the kitchen             |
| 2 [ ] In the bedroom     | 5 [ ] Other, please specify..... |
| 3 [ ] In the bathroom    |                                  |

19. What were the main reasons for your children's injuries ?

- 1 [ ] Children left at home alone
- 2 [ ] Caregivers were too young (less than 10 years old)
- 3 [ ] Caregivers were careless
- 4 [ ] Other ( specify).....

Part 2 : Knowledge of mothers regarding the prevention of child injuries at home

Instruction: Please fill in the blank or tick ✓ in the appropriate box [ ] to answer the questions.

**Type of injury questionnaires**

20. What is the main cause of death in children aged 5 to 9 years ?

1. [ ] Diabetes
2. [ ] Injury
3. [ ] Cancer
4. [ ] Diarrhea

21. Which is the most common cause of home injuries to children aged 5 to 9 years?

- 1 [ ] Falls
- 2 [ ] Machines
- 3 [ ] Drowning
- 4 [ ] Suffocation

22. Where do the home injuries occur most at home?

- 1 [ ] In the living room
- 2 [ ] In the football ground
- 3 [ ] In the bath room
- 4 [ ] At school

23. Which is the most common causation of falls by children aged 5 to 9 years?
- 1 [ ] Jumping
  - 2 [ ] Slipping
  - 3 [ ] Being hit
  - 4 [ ] Overbalancing
24. What is the main cause of injury by sharp objects to children aged 5 to 9 years?
- 1 [ ] Knives, scissors
  - 2 [ ] Nail clippers
  - 3 [ ] Vases
  - 4 [ ] Nail
25. Which behaviour is most likely to make an animal cause injury ?
1. [ ] Disturbing the animal while eating
  2. [ ] Playing with or near the animal
  3. [ ] Passing the animal
  4. [ ] Cuddling the animal
26. Which of the following is most likely to cause burn injuries ?
1. [ ] Electricity
  2. [ ] Chemical
  3. [ ] Hot water
  4. [ ] Fire in the kitchen

#### **Environment questionnaires**

27. What type of windows is not a cause of home injuries in children ?
1. [ ] Having good condition iron bars on all windows
  2. [ ] Having iron bars on some windows
  3. [ ] Having no iron bars on windows
  4. [ ] Having broken iron bars
28. What type of front door is not the cause of home injuries in children ?
1. [ ] Having a front door
  2. [ ] Having no front door
  3. [ ] Having front door but no lock
  4. [ ] Having front door with lock

29. Which of the following is not a cause of home injuries in children?
1.  No light
  2.  Enough bright light
  3.  Not enough bright light
  4.  Broken lights
30. What type of tables is not a cause of home injuries in children?
1.  Broken tables
  2.  Tables not kept properly or tidily with hot objects
  3.  Tables in good condition
  4.  Tables not kept tidily with breakable objects
31. Which of the following is the place where serious injuries are most likely to happen?
- 1  Falling from the stairs
  - 2  Falling from the bed
  - 3  Falling from the chair
  - 4  Falling from the table
32. What type of room is not a cause of home injuries in children ?
1.  Untidy or messy rooms with objects all over the place
  2.  No partitions for different purposes
  3.  Partitions for different purposes in good condition
  4.  Partitions for different purposes in bad condition
33. Which the following is not a cause of home injuries in children?
1.  Stairway has stair rail
  2.  Stairway has no stair rail
  3.  Stairway has broken stair rail
  4.  Some stairways have stair rail

Part 3 : Attitude of mothers towards prevention of child injuries at home

Instruction : Please put the symbol ✓ in the column that you agree with, you have 3 choices, they are agree, not sure and disagree, you choose only one of them.

**Attitude of mothers on hazards of home injury**

	Statement	Agree	Not sure	Disagree
34	Home injury is common in life, it can always happen			
35	Home injury is a public health problem			
36	Children have a greater of getting injured at home			
37	Children can be injured several times at home			
38	Children may suffered disability and pain because of home injuries			
39	Children in rich families never have a problem with home injuries			
40	Poor families can't protect their children from home injuries because they don't have enough time to take care of their children			
41	Home injury is a cause of long-term absence from school			
42	Children injuries have an impact health care services and costs of providing rehabilitation			
43	Boys are more likely to act in ways that cause injuries than girls			

**Attitudes of mothers regarding benefits of home injury prevention**

	Statement	Agree	Not sure	Disagree
44	Most home injuries could be prevented			
45	Put hot objects out of reach of children can prevent burn for children			
46	Having caregiver can not reduce the risk of home injuries in children			
47	Home injury prevention save money for treatment of injuries			
48	Keep animal at home can prevent animal bite for children			
49	A good condition of house can reduce rate of home injuries in children			
50	Keep knives and other sharp objects out of reach of children can not prevent home injuries by sharp objects			
51	Home injury prevention can protect children from pain and disability			
52	Home injury prevention avoid children getting hurt, fear and mental shock			
53	Remove hazards on the floors or wherever possible can prevent falls for children			

**Attitudes of mothers regarding barriers to prevent injuries to children at home**

	Statement	Agree	Not sure	Disagree
54	Prevent children from injuries needs more time			
55	Children can play alone, don't need parent's supervision			
56	I don't need to teach my children how to avoid home injury			
57	Children injuries always occur at home			
58	Children aged 5 to 9 years old can do any housework in bad condition of house			
59	It is difficult to do everything possible to make home safe for children			
60	It is easy to know where the children are, but difficult to see or reach the children			
61	It is not necessary to learn about children safety			
62	Children are less likely to be injured than other ones of his/her age			
63	Prevention of home injuries may require spending money, time and labour			

Part 4: Source of information

Instruction: Please put the symbol ✓ in the appropriate box [ ] that you agree

64. From which of the following media do you generally receive information concerning preventing injuries to children at home ? (More than one answer is possible)

1. [ ] Newspapers
2. [ ] Television
3. [ ] Posters
4. [ ] Handouts
5. [ ] Magazines
6. [ ] Radio
7. [ ] Others ( specify).....

65. From which of the following personnel did you generally receive information concerning preventing injuries to children at home ? ( More than one answer is possible)

1. [ ] Friends
2. [ ] Family members
3. [ ] Health personal
4. [ ] Health volunteer
5. [ ] Others ( specify).....

66. According to item 64, 65 which source that you believe the most?

- 1 [ ] Newspapers
- 2 [ ] Television
3. [ ] Posters
4. [ ] Handouts
5. [ ] Magazines
6. [ ] Radio
7. [ ] Friends
8. [ ] Family members
9. [ ] Health personal

10.  Health volunteer

11.  Others (specify).....

67. What types of information about preventing injuries to children at home did you receive?

1  Causes

2.  Treatment

3.  Prevention

4.  None

5.  Others (specify).....

**Thank you for your kind cooperation!**

## **BIOGRAPHY**

<b>NAME</b>	Cao Thanh Tu
<b>DATE OF BIRTH</b>	03 February 1982
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<b>INSTITUTION ATTENDED</b>	Moscow Medical Academy, 2002-2007 Doctor of Stomatology  Mahidol University, Thailand Master of Primary Health Care Management ASEAN Institute for Health Development
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