

Epidemiology of injuries in children under five years old in Qazvin, Iran

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ABSTRACT

Background and aims: In Iran, according to the available data on health statistics, injuries are the as the common cause of death in different age groups after chronic heart diseases. The aim of this study was to present detailed information on eight common injuries.

Methods: This study is an analysis on existing data (secondary study on recorded data) in Health Informatics System (HIS) available in Qazvin Health Management Office (QHMO), Iran. Permission to use these data was provided by researchers and the Health Research Ethics Board at the Qazvin University of Medical Sciences and also approved this analysis. Eight categories of injuries were derived from HIS and analyzed in SPSS software.

Results: The total registered injuries in the whole population of Qazvin province was 22,821 (30% in females) from March 2014 to March 2015. From this, 1688 (7.3%) occurred in children under five years old. The rate of falling, violence, traffic and burns related injuries were in the top. About 69% of total injuries were in urban, and near 13% in villages.

Conclusion: Children are the main victims of adults' car crashes. Most of the children's injuries take place at homes and roads. Some educational programs in order to increase children's safety are in progress. There is not a good system to evaluate these interventions' outcomes, and as such doing more study in this field is needed.

Keywords: Injury, Children, Falling, Violence, Traffic injuries.

INTRODUCTION

In Iran, according to the available data on health statistics, injuries are the common cause of death in different age groups after chronic heart diseases. Injuries account for more than 60% of all injury deaths in children younger than 19 years.¹ Various factors influence

children's injuries like as; age, gender, behavior, and environmental agents, meanwhile age and sex are the most important agents suffering the patterns of injuries. Injuries are the major causes of childhood's mortality and morbidity in the United States, too.¹⁻³ Injuries represent one

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of the most important public health problems facing both developing and industrialized countries today.⁴ A one-year study in an Iranian province, revealed that about 5% of injured children in urban and sub-urban areas referred to emergency departments were pedal cyclists, of whom, 55% had head injuries.⁵ Due to the lack of responsible agency and funding, the data capture systems in Iran are inadequate, and few studies have investigated the epidemiological patterns of injuries in children under five years old.^{1,6,7} There was no age-specific study done in Iran.^{4,8,9} Qazvin is in central region of Iran. In spite of the higher prevalence of some injuries (Traffic accidents; Motorbike specifically) in Qazvin than the other provinces of Iran, little researches have been conducted to aim all the injuries in a specific age group. The aim of this study was to present detailed information on 8 common injuries (Falling, Violence and attack, Traffic injuries, Burns, Poisoning, Wild animals' attacks and snakebites, Electrocutation and

Drowning) in children under the age of 5 years.

METHODS

This study is an analysis on existing data (secondary study on recorded data) in Health Informatics System (HIS) available in Qazvin Health Management Office (QHMO), Iran. Permission to use these data was provided by researchers and the Health Research Ethics Board at the Qazvin University of Medical Sciences also approved this analysis. Eight categories of injuries were derived from HIS and analyzed in SPSS software.

RESULTS

Total registered injuries in whole population of Qazvin province were 22,821 (30% in females) from March 2014 to March 2015. From this, 1688 (7.3%) occurred in children under five years old. Distributions of injury are shown in Table 1 and Figure 1.

Table 1: Distribution of injuries type in children under 5 years

Type of injuries	Girls		Boys		Total	
	n	%	n	%	n	%
Falling	155	24	220	0.21	375	22.2
Violence and attack	121	18.7	214	20.5	335	20.0
Traffic injuries	101	15.6	150	14.5	251	15.0
Burns	53	8.1	98	9.5	151	9.0
Poisoning	18	2.8	18	1.7	36	2.1
Wild animals attack and snakebites	2	0.3	2	0.19	4	0.23
Electrocutation	3	0.4	5	0.48	8	0.5
Drowning	0	0.0	2	0.19	2	0.11
Others (unspecified)	194	30	332	32	426	25.2
Total	647	100	1041	100	1688	100

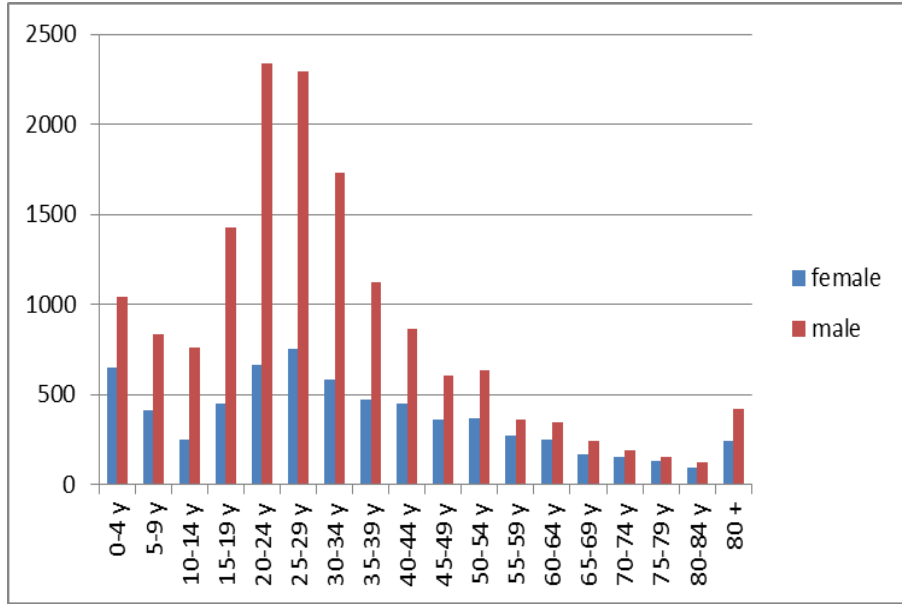


Figure 1: Gender-based distribution of injuries in Qazvin population

The rate of falling, violence, traffic and burns related injuries were in the top. There was no detailed information about

these, except for the traffic injuries. Types of traffic injuries are shown in Figure 2.

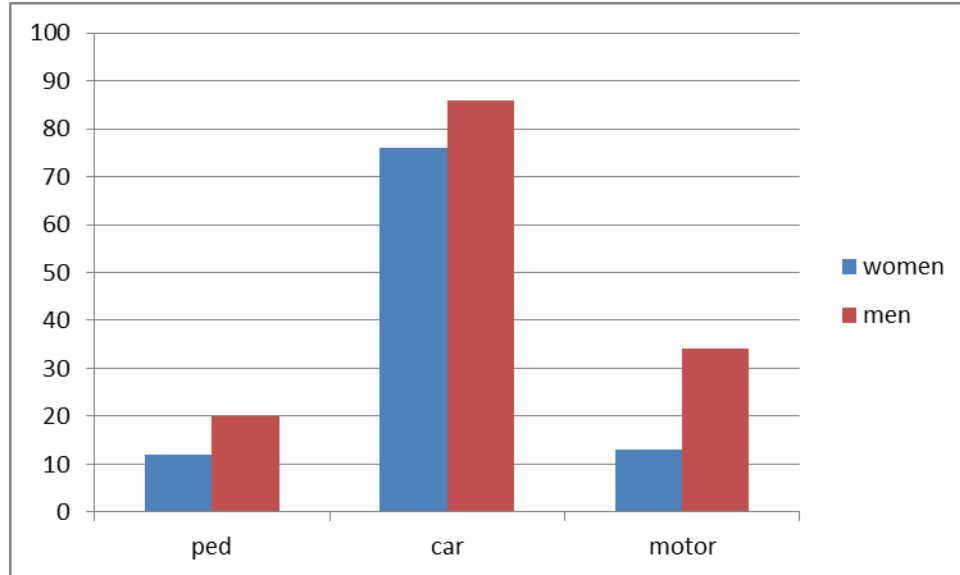


Figure 2: Type of traffic injuries in children under 5 years old

As shown in this figure, car injuries have the most prevalence related to other traffic injuries. Home and the roads were the most

common places for these injuries as shown in Table 2. About 69% of total injuries were in urban, and nearly 13% in villages (Table 3).

Table 2: Distribution of injuries' places in children under 5 years

Scene of injuries	Girls		Boys		Total	
	n	%	n	%	n	%
Home	294	45.0	434	41.5	728	43.0
Roads	111	17.0	183	17.5	294	17.4
Public recreational places	8	1.2	17	1.6	25	1.5
Kindergarten	1	0.15	1	0.09	2	0.11
Others (unspecified)	233	36.0	639	61.3	872	51.6
Total	647	100	1041	100	1688	100

Table 3: Geographical points of injuries in children under 5 years

Geographical points	Girls		Boys		Total	
	n	%	n	%	n	%
Urban	444	68.5	724	69.5	1168	69.0
Villages	83	12.3	139	13.3	222	13.0
Others (unspecified)	119	18.3	176	17.0	301	18.0
Total	647	100	1041	100	1688	100

DISCUSSION

Based on the last census in 2011, Iran's population was over than 75 million (nearly six millions were under five years old), and about 1,201,565 are living in Qazvin province (little more than 80,000 are under five years old).⁷ The most causes of injuries in this study were falling, violence, traffic injuries and burns with prevalence rate, 22.2%, 20.0%, 15.0%, respectively. Unfortunately, there is no reliable data about falling and violence distribution, but national and international figures shows that

traffic injuries in Iran are higher than the rate estimated for the Eastern Mediterranean countries.⁵ The rate of road accidents in Iran is twenty times more than the world's average. In Iran, among all unintentional fatal injuries inflicted on children under five, traffic-related fatalities are the leading cause of death.¹⁰ Although some interventions like as legislation, education, and the roads safety enhancement, have been handled.^{6,8} It is noteworthy that, none of these interventions have been focused on children.

Basically, children under five years old are a common high risk population, and some of the traffic injuries reduction intervention must be done on this group. The high rate of falling, violence and traffic injuries in children under five years, suggests a hidden neglect or abuse against children.^{4,5,8} However, it seems necessary to make some specific interventions to reduce these injuries. Some of these interventions should be oriented toward parents or child's guardians. Road traffic crashes are predictable and can be prevented. Many countries have achieved sharp reductions in the number of crashes and the frequency and severity of traffic-related injuries by addressing key issues. Interventions that have been proven to be effective include those that deal with: speeding, seat belt, child restraints, helmet, road design and infrastructure, and emergency services.¹⁰

Traffic injuries are categorized into pedestrians, car accidents and motorbikes. Each year, road traffic crashes kill nearly 28,000 people in Iran, and injure or disable 300,000 more. Traffic fatalities cost Iran's economy six billion US dollar every year, which amounts to more than 5% of the country's Gross National Product.^{3,10} This study revealed that car accident injuries are obviously more than the other two (Figure 2), so children are the main victims of adults' car crashes. Most of the children's injuries take place at homes and on roads (Table 2). It is because of the parental neglect and unsafe environments. Now, some educational programs with respect to increasing children's safety are in process. There is not a good system to evaluate these

interventions' outcomes, yet doing more study in this field is needed.

CONCLUSION

Children are the main victims of adults' car crashes. Most of the children's injuries take place at homes and roads. Some educational programs in order to increase children's safety are in progress. There is not a good system to evaluate these interventions' outcomes, and as such doing more study in this field is needed.

CONFLICT OF INTEREST

The authors declared no conflicts of interest.

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