

## Investigation of Home Accidents Based on Location and Type of Incidence in Studied Population

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### Abstract

**Introduction and goal:** damages resulting from accidents are main and avoidable causes, non-communicable diseases, and death in most countries of the world. Awareness of the different dimensions of accidents is important for health planning and educational interventions timely. To reduce the amount of household accidents, training based on needs should be provided for target groups that prerequisite of such trainings is to determine the incidence of accidents in society. Therefore, this study was conducted to determine the incidence of household accidents.

**Materials and Methods:** This is a cross-sectional descriptive-analytical study conducted in the period between 2013 and 2014. Using census method of sampling, all injured people (916 cases) who were admitted to health centers due to home accidents were studied. Tools of the study were according to relevant checklist and forms. Data were analyzed using SPSS 21 software at the level of 5 percent and Chi-square test was used to determine the relationship between variables.

**Results:** in total, 916 injured people were recorded during this period. Based on the results obtained among people examined in this study, 46.8% of them were men and 53.2 percent of them were women. Significant relationship ( $p < 0.05$ ) was found between age, gender, and type and location of accidents. Among different types of accidents, burn had the highest frequency of accidents with 61.1 percent and in terms of location of accidents, most of accidents happened in kitchen with 51.4 percent. In terms of result of the treatment, 82.4% were recovered injured people, 16.3 percent were under treatment, 0.04 percent was disabled, and 1.2 percent of them were died.

**Discussion and conclusion:** based on the results obtained, a significant percentage of household accidents related to the burn at home, which in this case it is recommended that preventive policies and training plan to be adopted to reduce the incidence of this type of accidents and its consequences. Additionally, these plans are recommended to focus age groups under 20 years and young and mothers based on frequency of incidence of cases.

**Keywords:** home accidents, accidents, damage, home health.

### **Introduction:**

One of the main dangers threatening the health of humans in regions and countries of the world is increased rate of accidents and their consequences, including various damages that affect people's health (Moradi and Rahmani, 2014). Accidents are unforeseen events by an individual that their consequences are recognizable losses. In other words, accident is an unexpected event created by man and its consequence is detectable or recognizable damage. Accident refers generally to incidence of emerging and sudden phenomenon (Kang et al., 2015). Accidents are main and avoidable causes of death and disease in most countries of the world. The consequences and damage resulting from accidents will be the second cause of disability in the developing countries and the third leading cause of death and disability in the world by 2020 (Maracy and Isfahani, 2013). Accidents distribute millions of lives of people and their families annually. The World Health Organization estimates that more than 16,000 children die as result of unintentional injuries caused by accidents (Organization, 2014). Community-based studies conducted recently by UNICEF indicate that this number of deaths could be much higher. Tens of millions of children suffer from non-fatal injuries that many of them require hospital care imposing higher economic burden on society and family. Those who survive suffer the consequences caused by damage, necessary care and rehabilitation works on the future of many children in terms of health, education, acceptance in society and family life (Organization, 2013). Advent of the industrial revolution and the arrival of industry and new technology to human life have led to control of communicable diseases due to primary health services and higher levels of life expectancy on one hand and increasing prevalence of non-communicable diseases that is direct and indirect result of these development on the other hand. In this group of diseases, one of the most important health and social problems and home accidents affecting nowadays the health of human beings (Stanhope and Lancaster, 2015). Based on research done, accidents are the third leading cause of death at all ages and the first cause of death at ages under 40 years. Total active years of life lost due to injuries and other factors are causes of morbidity and mortality in the different countries so that in a country like the United States, this rate is more than 4.1 million years (Harper et al., 2015). The results of some studies show that the annual growth rate of accidents in Iran is approximately 8-10 percent. According to some studies, accidents after cardiovascular disease are the largest cause of death in Iran (Barry et al., 2009). The results of other studies indicate that about 44% of deaths are due to home burns and 15% of them are due to suffocation and 8% of them are due to poisoning (Mazloumi and Fallahzadeh, 2002). Another study conducted by Mohammadi et al in Iran in 2005 showed that the incidence of burn was 19 per 10000 persons in the village and 13 per 10000 thousand people in the city. The highest frequency related to burn. In addition, 30 percent of the cases have been caused by sharp tools, that it has been reported that the incidence of 8.4 per 10000 was in the village and 11 per 10000 was in city. The highest cases in terms of age was at the age of 0-4, and burn has been the main cause of death (Mohammadi et al., 2005). To prevent any injury (accident), there are a lot of opportunities and the best and the most important method of prevention of injuries and accidents in the first stage is to acquire information regarding the causes of the damage and the second stage is to know about the ways to prevent it (Peden, 2008). According to the consequences and impact of home accidents and domestic accidents on the number of years of life lost, the awareness of the different dimensions of these accidents and related variables is valuable for planning at different levels of prevention, health

policy-making, and educational interventions. Therefore, this study aims to determine the occurrence of damage caused by accidents in this area.

### **Materials and methods**

This is a cross-sectional descriptive - analytical study in which data obtained about statistics on victims of home injuries were analyzed to determine the incidence of accidents based on location, type and to determine its epidemiological index during 2013 and 2014. Using census method of sampling, all injured people (916 cases) admitted to health centers due to home accidents was studied. Data required by researcher were used based on checklist and forms confirmed already by experts of Health Ministry. Data were analyzed using SPSS 21 software at the level of 5 percent and Chi-square test was used to determine the relationship between variables. In this checklist, variables such as presence or absence of protective fences on the roofs, balconies, stairs, window, dock, well, and pool, safety of heating devices, the whereabouts of drugs, poisons, flammable liquids and materials, safety of electrical equipment, electrical wires and height of installed sockets, the lighting status of the various parts of the building, safety of kitchen appliances, the presence or absence of first aid kits, and safety training to households were used. Personnel involved in the project were justified during several training sessions, required data were collected in accordance with the checklist and related forms from health centers, and finally collected data were analyzed using SPSS 21 and descriptive and analytical tests, and  $P < 0.05$  was considered as significant level.

### **Results:**

In terms of time of accidents incidence during this study, 412 people (45%) of home accidents happened in 2013, 504 people (55%) happened in 2014. Out of total 916 people affected with accident, 429 of them were male (46.8%) and 487 of them (53.2%) were female. The statistical test showed significant relationship between gender and time of accidents ( $p < 0.002$ ). In terms of result of treatment, 82.4 percent were recovered, 16.3 percent of were under treatment, 0.04 percent of them were disabled, and 1.2 percent of them were died.

Frequency distribution of home accidents in terms of occupation has been shown in Table 1. This table also shows that the percentage of injuries in occupations such as housekeeping (30.2 percent) and students (25%) has the highest frequency than other occupations, and statistical analysis showed significant relationship between occupations and accidents ( $p=0.001$ ).

**Table 2: frequency distribution of home accidents in terms of type of accident**

Frequency distribution of home accidents in terms of type of accident has been shown in

row	Type of accident	Number	percentage
1	Burn	560	61.1
2	Poisoning	47	5.1
3	Cuts caused by sharp objects	224	24.4
4	Suffocation	5	0.6
5	Fracture	38	4.2
6	Collapse	21	2.3
7	Drowning	5	0.5
8	Dislocation	16	1.8
	Total	916	100

Table 2. This table also shows that burn with 61.1 percent and injuries caused by in cut due to sharp objects with 24.4 percent are the most common injuries in home accidents. Statistical tests showed significant relationship between various types of injuries statistically ( $p=0.001$ ).

**Table 3: frequency distribution of home accidents in terms of location of accident**

	Location of accident	Number	percentage
row			
1	Kitchen	471	51.4
2	bedroom	123	13.4
3	Yard	268	29.3
4	Bathroom	13	1.4
5	Stairs and roofs	31	3.4
6	Water well at home	10	1.1
	Total	916	100

The frequency of occurrence of the accidents in terms of location of accident is shown in Table 3. As it can be seen, a large percentage of home accidents in terms of location happened in the kitchen with 51.4 percent, followed by yard with 29.3 percent. Consequences of injuries cause by home accidents among the 916 people injured, 755 cases (82.4%) are fully recovered, 149 cases (16.3%) are under treatment, and 11 (1.2%) led to death, and one case (0.04) led to inability.

### Discussion

In this study, the highest injury caused by home-accidents belonged to housekeeping occupation with 30.2 percent and students with 25 percent of total cases. This finding is consistent with results of 5-year study conducted in Turkey (Evcı et al., 2006). Higher frequency of accidents in housekeeping occupations in this study is consistent with studies conducted in Ankara (Hamzaoglu et al., 2002). This result is due fact that people who work at home more at higher risk of injuries caused by contact with hot liquids, hot dishes, cooking,

flame lights or stoves. This shows the need for accurate health training in housekeeping occupations and authorities of schools to make work and education environment safe (Hu et al., 2015).

In the present study, it was found that burn is the most common home accident with 61.1 percent. This result is consistent findings of studies conducted in India in which burn accident was reported in 56.8 % of home accidents (Sudhir et al., 2014). Higher frequency in incidence of burn caused by heating devices in the winter season and using unsafe devices or improper use of heating devices and being exposed at injuries caused by hot liquids suggest the necessity of accurate training among all members of family. Unlike developing countries, accidents in industrial countries reflects the fact that more than 50 percent of the causes of home accidents is collapse (Phelan et al., 2005). It seems that increased awareness of people and development of other sectors involved in health in these countries caused this difference. Accidents such cuts caused by sharp objects after burn were one of the most common causes of home accidents with 24.4%. In a study conducted by Neghab et al. (Neghab et al., 2008), damage caused by sharp objects with 11.3% was responsible for more than of 77.8% of accidents. Results of study conducted by Fazel et al. are (Fazel et al., 2012) are also in line with the results of this study.

Additionally, results of Prahlow et al. showed that the accident due to collapse with 42.8% was the main cause for referring, and in terms of type of injury, cut, tearing and abrasion with 49.5% were the most common home accidents (Prahlow et al., 2001). This reflects the importance of providing effective training for on safety while working with sharp tools and correct way of keeping them in the kitchen (Altundağ and Oztürk, 2007). Education may enhance the performance (Nazemzadeh et al., 2013). Self-care education is emphasized because it leads in active role in treatment process and accepting responsibility for individual health (Raufmehrpoor and Arbabisarjou, 2005). Social networks are used for behavior improvement, educational performance and other self-care education (Arbabisarjou et al., 2015).

The results showed that in terms of location most of home accidents happened at kitchen with 51.4%, followed by yard with 29.3%. In a study conducted by Sudhir et al (Sudhir et al., 2014), it was found that the most common place for accidents was homes with 57%, followed by yard with 49.7%. Therefore, results of their study are consistent with results of current study. This reflects the greater activity in areas such as kitchen and yard, which entails the risk of damage in the kitchen and yard. Holding training courses in free time on observing the safety in kitchen and yard, and providing pamphlets stating the risks of home injuries and damages and ways to reduce these accidents are not only cost-effective solutions but also they are useful and effective in reducing these events (Vahdaninya et al., 2015). The results of a study focused that the most causes of mortality and morbidity are preventable in the children under five years old with some policies such as education (Nassiri et al., 2016).

To prevent home accidents is a difficult task. Strategies to reduce home accidents should focus on a safe environment with trained people. However, prevention plans should be implemented at the level of society and family and the most important strategies that should be considered is training the health for society, eliminating environmental risks, and monitoring activities on the first level of service delivery. Integration of the projects on time accidents in health network system of country has very important and useful consequences for society and they should be associated with continuous training for families and follow-up. If

similarly effective interventions to prevent child injuries are implemented in the world, many deaths would not happen and life expectancy will increase .

### **Conclusion**

As burns are the most common injuries in the home accidents in the current study, health authorities must consider intervention plans considering the fact that most of home accidents happen in age group under 20 years and young groups and mothers. Additionally, using mass media especially, TV and radio, training opportunities should be provided and training plan appropriate with age and gender of audiences should be provided. In line with enhancing the health level of society, health planners, authorities, and other relevant sectors must develop and implement plans in this regard.

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