

# Home Accidents Rate Among Under-Five Children and Predisposing Factors in Khartoum

Waled Amen Mohammed Ahmed<sup>1, \*</sup>, Sawsan Mustafa Abdalla<sup>2</sup>,  
Elsadig Yousif Mohamed<sup>2</sup>, Osman Babiker Osman<sup>3</sup>,  
Hamdi Nouri Najeeb Alnsairat<sup>4</sup>

<sup>1</sup>Nursing Department, Faculty of Applied Medical Sciences, Albaha University, Al-Baha, Kingdom of Saudi Arabia

<sup>2</sup>Community Medicine, Faculty of Medicine, Majmaah University, Majmah, Kingdom of Saudi Arabia

<sup>3</sup>Public Health, Faculty of Applied Medical Sciences, Albaha University, Al-Baha, Kingdom of Saudi Arabia

<sup>4</sup>Basic Medical Sciences Department, Faculty of Applied Medical Sciences, Albaha University, Al-Baha, Kingdom of Saudi Arabia

## Abstract

*Objective:* This study aimed to assess rate of under-five children home accidents and to determine its risk factors predisposing them in Khartoum. *Methods:* This is a descriptive cross-sectional study which was conducted in Khartoum State, Sudan, 2011. The sample size was calculated as 300 households including mothers and their under-five children. This study used randomized sampling technique. The data was collected by a questionnaire. The data was analysed by using Statistical (SPSS) version 20. *Results:* The results showed that most of the mothers are not workers. They are mainly primary or secondary educated. Home accidents rate in Khartoum is 10.3%, which occur among both sexes, within ages between 1-4 years (mainly three years). The most frequently risk factor of under-five home accidents was the area of fall in the home and mainly happened in the rooms. *Conclusion:* Home accidents rate among under-five children in Sudan is common and have been related to area and rooms in which the accidents happened.

## Keywords

Home Accidents, Rate, Under-Five Children, and Risk Factors

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## 1. Introduction

Children have a very limited ability to react quickly and properly in an emergency situation as well as they acquire little control over their environment, which increase the risk of accidents and death [1].

Under-five children are at high risk for many accidents such as burn and fall [1]. Studies in four low-income countries found that 65% of childhood burns had occurred in and around home [2]. WHO's report about childhood injuries stated that, injuries among under-five children increase with age between one to five years [2].

As child mortality rates fall in some countries of the Eastern Mediterranean Region, accidents are increasingly being reported among the leading causes of death and illness in children, especially in the age group 1 to 4 years old. Furthermore, national statistics on accidents in children are often partial and fragmented, when available: many accidents often go unreported and the real burden of disease in children is therefore largely underestimated. It is expected that for every death from accidents in children, a substantial number of non-fatal accidents, outpatient visits and hospital admissions are likely to occur [3]. Unless, all causes of under-five mortality and morbidity have been identified;

\* Corresponding author

E-mail address: [weliameen1980@yahoo.com](mailto:weliameen1980@yahoo.com) (W. A. M. Ahmed)

minimizing under-five mortality rate is difficult to be achieved.

Although the causes of child mortality have changed over the last few decades but still the magnitude of the problem is overwhelming. While deaths due to common childhood diseases such as diarrhea, pneumonia continue to decline; accidents are emerging as the leading causes of childhood mortality [4]. In recent years, WHO, has worked on several initiatives to document the problem, and moreover, to increase the knowledge of household in dealing with childhood accidents and implementing home safety advices [5].

Despite several studies have been conducted, under-five home accidents in developing countries has not been adequately investigated [6]. The current study aimed to assess the rate of under-five children home accidents and to determine the risk factors predisposing them.

## 2. Methods

This is a descriptive cross-sectional study by design to assess the effects rate of under-five children and its associated risk factors in Khartoum State, 2011.

The population of this study were mothers who have under-five children. Sample size was based on the primary outcome of home accident rate. Calculations were based on the equations of Hayes and Bennett, 1999. A value of  $k$  – between-cluster coefficient of variation, and the addition of 2 to the estimated cluster number to account for loss of degrees of freedom consequent on stratification. The value of  $k$  was set at 0.30. A sample size of 10 clusters in Khartoum [7]. Total sample size was calculated as 300 households including mothers and their under-five children. Five localities were selected and two administrative units were chosen randomly from each locality. From each administrative unit 30 households with under-five children were selected as clusters. The data was collected by a questionnaire. The data was analysed by using Statistical package for social sciences (SPSS) version 20. Descriptive analysis and Chi square test were used to find out the rate of under-five home accidents in Khartoum and its related risk factors.

## 3. Results Summary

Descriptive analysis was conducted to find out the percentages and frequencies of demographic characteristics of mothers participated in the study. The age of mothers under study ranged between 19 years and 46 years with mean age  $31 \pm 6$  years. Most of the mothers are not workers. They are mainly primary or secondary educated, Table (1).

A descriptive analysis was conducted to assess the risk

factors of under-five home accidents. Table (2) reflects the percentages of risk factors of under-five home accidents. Home accidents occur among both sexes, within ages between 1-4 years (mainly three years). The most frequently risk factor of under-five home accidents was the area of fall in the home and mainly happened in the rooms.

The table (3) showed that; home accidents rate in Khartoum is 10.3% (31 accidents reported among 300 under-five children).

**Table (1).** Demographic characteristics of mothers under study in Khartoum.

Variable	Total (n=300)
	n (%)
Occupation of mothers	
Worker outside home	80 (26.6)
Not worker outside home	220 (73.6)
Level of mothers' education	
Illiterate	17 (5.7)
Primary	80 (26.6)
Secondary	108 (36)
University	95 (31.6)
Age	
Mean	31
Std. Deviation	6
Minimum	19
Maximum	46

**Table (2).** Risk factors of under-five home accidents in Khartoum.

	n (%)
	n = 31
Sex of under-five	
Male	13 (41.9)
Female	18 (58.1)
Age of under-five.	
One	7 (22.6)
Two	5 (16.1)
Three	13 (41.9)
Four	6 (19.4)
Cause of under-five accidents	
Fall	19 (61.2)
Fire	6 (19.4)
Contact with hot objects	6 (19.4)
Type of under-five accidents	
Burn	12 (38.7)
Fracture	1 (3.2)
Injuries	18 (58.1)
Place of under-five accidents	
Hall	14 (45.2)
Room	10 (32.2)
Yard	6 (19.4)
Kitchen	1 (3.2)

**Table (3).** Home accidents rate among under-five children in Khartoum.

Home accidents rate in Khartoum	31/300 (10.3%)
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## 4. Discussion

The present study revealed that; the vast majority of mothers were not working outside their houses. This result is the same as study conducted in Assiut University in 2003, to assess knowledge and practice of mothers toward home accidents among children under-six years in rural areas, which reported that most of mothers are not working for Cash [8].

The present study revealed that; most of the mothers have either primary or secondary education (60% or more) that is similar to findings of a retrospective study conducted in Arizona State in United State of America to identify scald demographic which mentioned that; 78% of mothers are primary educated [9].

Furthermore, the age of mothers in this present study ranged between 19-46 years old with the mean age  $31\pm 6$  years. Mothers in the present study live with their children in rented or owner occupier houses as almost as equal percentages and the same thing is for type of their families, which was either extended or nuclear as almost as equal.

Further investigations for under-five home accidents risk factors had taken place; the present study showed that; under-five home accidents occur among both sexes with different age from 1 to 5 years and mainly occur among three years old children who may be due to their impulsiveness and curiosity at this age.

The most common reported cause of under-five home accidents was playing. The most frequently reported home accidents, among under-five, were falls and burns. The places of occurrences in the home are many but the under-five home accidents mainly happened in the room. Hadd also reported that accidents among under-five mainly happened in the living room [10]. Othman reported that ninety-one percent of accidents occur in the home [11].

The present study also revealed that the rate of home accidents was high it was 10.3%. A study conducted by Michigan Health Department mentioned that; home accidents rate dropped by 50.4% after intervention by educating mothers. In another evaluation of a large scale, educational programme by the Michigan Health Department, it was found that 27% of the households surveyed stated that they had followed some of the safety advice given [12].

## 5. Conclusion

Home accidents rate among under-five children in Khartoum rate was 10.3%. The most frequently risk factor of under-five home accidents was the area of fall in the home and mainly happened in the rooms.

## Authors' Contribution

The main investigator of this study is Waled Amen Mohammed Ahmed. All other authors contributed equally in this work.

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