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Children Domestic Accidents Profile in Jazan Region, a call for new policies to improve safety of home environment

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ABSTRACT

High-frequency home accidents draw more attention to the protection of our home environment. WHO has reported that home deaths were among the first 20 causes of death in the 0–14 age group worldwide in 2012. This innovative research was designed to examine children under 15 years of age at home, in 2018 in the Jazan area of Saudi Arabia. Data were collected retrospectively from 19 hospitals in the Jazan area of southern Saudi Arabia during the period from September to December 2019. Data showed that, for the first time, the incidence rate of child home incidents in the Jazan area was 7.4 per 100 children in 2018. Falling, burning, swallowing foreign bodies, and domestic violence were among the most common types of injuries recorded. Home safety continued to be one of the main public health issues in the area with 29,812 home injuries in 1 year, 36.8% bone fractures, 31.6% body distortions, 9.2% distortion fractures and 5.3% child impairment. This study is a crucial step towards addressing the severity of home accidents in Saudi Arabia; troubling figures need further analysis, regular registry, informed policies and well-planned action to avoid these types of accidents.

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1. Introduction

This study focuses on domestic/home accidents in children younger than 15 years in Jazan region and how much our children are safe in their home environment. In this research, we define “home accident” as the accident that occurs either “in” or “around” a residence. This definition includes the inside of the residence, the yard, the garden, and the nearby driveways, but it excludes road traffic accidents. Unintentional injuries have been recognized as one of the leading causes of death and disability. Globally, more than 700,000 children die every year due to injuries, especially in

the developing countries. Unintentional fall injuries are the most common injuries in children (Al-Abed et al., 2014). Childhood injuries account for a substantial health care burden in Egypt according to a community-based cross-sectional study conducted in 27 Egyptian governorates from June to October 2011. This study showed that burn injuries (20.3%) and falls (25%) were the most common home accidental injuries. The incidence was significantly higher in boys (57.2%) as compared to girls and in the age group 2–6 years (70%) as compared to older and younger age groups (Halawa et al., 2015).

A recent study in Norway showed that lower socioeconomic status of families is associated with symptoms of emotional conduct, hyperactivity/inattention, and problems with peers. This association (10–29% of the effects) can be explained by the exposure to life events and family stress (Boe et al., 2018). In Saudi Arabia, a cohort study was conducted in King Abdul Aziz Medical City (KAMC) in Riyadh which showed that a total of 1639 children were treated in the KAMC ED for fall-related injuries. Boys experienced significantly higher fall rates than girls. Upper limb fracture was the most common type of injury overall (40.6%). In males, the skull and the face were the most commonly affected (80.6%); in females,

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the neck and the vertebra were the most frequently injured (40.0%). Middle childhood was the most common age group that experienced fall-related injuries (Goraini et al., 2015). To prevent morbidity, mortality, and long-term disability, home injuries due to falls in children younger than 15 years, uncontrolled hazardous materials, and many other factors need to be studied and root causes shall be identified (WHO, 2005). In a young population like in Saudi Arabia researches in various areas related to children health should be prioritized. In a tropical area like Jazan region, focus is always diverted toward tropical diseases; however, Jazan population is now falling into a rapid transition toward modern life complexity. Lack of research and publication in this important preventable health problem is very much unjustifiable. Potentially, this research could provide baseline data for future accidents to children in this region.

This study aimed to assess home accidents among children younger than 15 years in Jazan region, with specific objectives including the magnitude of home accidents among children younger than 15 years in Jazan region and to identify the risk factors associated with accidents to children in the home.

2. Methodology

This retrospective study design consists of two separate sections. Part one focuses on data on children under 15 years of age in the emergency department of 19 public hospitals in the Jazan area of southern Saudi Arabia in 2018, looking at the extent of the issue and the major types of injuries. Data were collected during the period from September to December 2019. All types of home accidents that occurred in younger children than 15 years of age between January and December 2018 and registered in public hospitals in the Jazan area were included. Bone fractures, swallowing of a foreign body, falling, burning, and others have been registered. The second part was performed in a referral hospital in the Jazan area named Prince Mohamed Bin Naser Hospital (PMBN Hospital) to collect primary data from patient records. The sample was selected randomly from all children, both boys and girls, younger than 15 years of age registered to the Emergency Department of PMBN Hospital in the Jazan Region in 2018. Consideration was given to demographic characteristics, time, effect of an accident on children and other predictors.

2.1. Statistical analysis

The statistical analysis was performed with the frequencies and the percentages as per the previous studies (Khan et al., 2019; Khan et al., 2014).

3. Results

In this study, the prevalence rate of childhood accidents in the Jazan area was reported to be 9.3% in 2018. The incidence rate of children arriving at the hospital after motor vehicle incidents was 1.4%, while the incidence rate of accidents in children at home was documented to be 7.9% in the same year.

4. Discussion

This empirical data showed that the incidence rate of accidents to children in the home was reported to be 7.9/100 children in Jazan region in the year 2018, and this is a very alarming figure.

Domestic accidents in children is clearly neglected preventable public health issue. Despite the high incidence rate of home accidents to children in Jazan region, there is no single publication

written to describe the epidemiological profile of home accidents or to call for serious intervention.

Most common types of accidents to children in the region appeared to be falls, cut with sharp materials, foreign body in ears and nose, shotgun, swallowing a foreign body, domestic violence, and rape. The ratio of road traffic accidents to various types of home accidents is 1:5, respectively.

Fig. 1 sheds light on 120 cases of domestic violence in the year 2018 and is just the tip of iceberg because most of these cases are normally not disclosed. Fig. 2 shows that children are more vulnerable to most types of accidents except for shotgun, which remains higher in the adult group (see Fig. 3, Tables 1 and 2).

In this study, determinants of childhood accidents include time when most of the accidents happened, i.e., in the evening or night

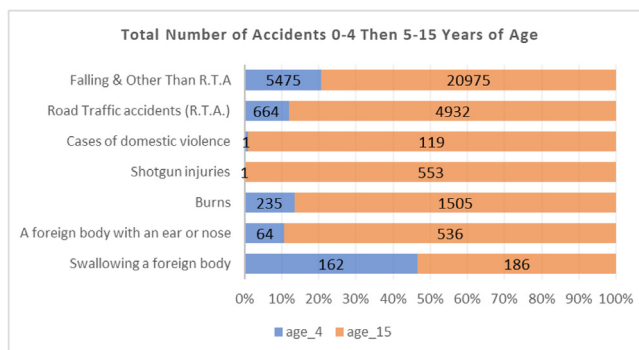


Fig. 1. Total number of accidents in 0–4 and 5–15 years old.

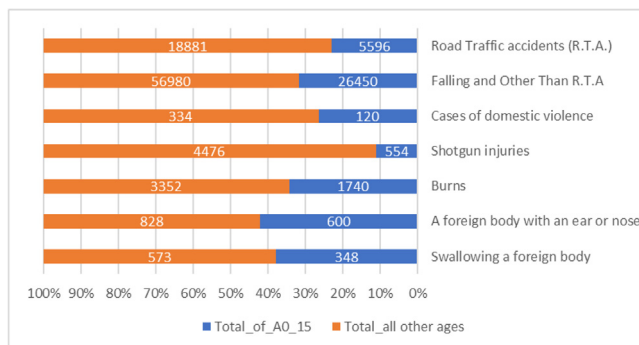


Fig. 2. Total number of accidents in 0–15 years and adults age groups in 2018.

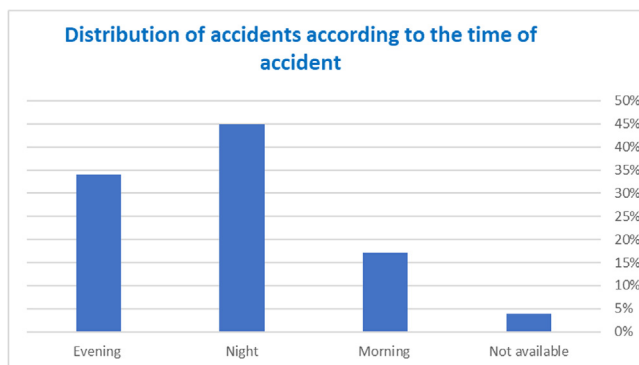


Fig. 3. Distribution of accidents according to the time of accidents.

Table 1
Total number of accidents in 0–15 years old children.

Type of accident	No. of children Acc.	Percentage%
RTA	5596	16
Falling, cut with sharp materials	26,450	75
Violence	153	0.4
Shotgun	554	2
Burn	1740	5
Foreign body in ear or nose	600	2
Swallowing a foreign body	348	1
Total	35,408	100

Table 2
Distribution of accidents according to the impacts of accidents.

Impacts of accidents	Percent%
Bone fractures	36.8
Distortion in a body	31.6
Fractures and distortion	9.2
Physical disability	5.3
Other impacts	15.8
Not available	1.3
Total	100.0

time, and males were more vulnerable than females. These determinants and others should be considered while designing community interventions.

Home accidents appeared to be one of the major causes of morbidity and disability. A total of 29,812 accidents occurred in 1 year, resulting in 36.8% bone fractures, 31.6% with body distortion, 9.2 fractures with distortion, and 5.3% with child disability.

5. Conclusion

People always discuss about infectious diseases in Jazan region; less focus is given to modern life threats and almost complete negligence to child safety in the home/domestic accidents, although these appear to be one of the major causes of morbidity and contributing factor to disability. About 35,408 child accidents occur in one year, resulting in 36.8% bone fractures, 31.6% body distortion, and 5.3% child disability. These figures are alarming and acci-

dents to children in the home need to be registered in the Kingdom of Saudi Arabia as soon as possible. This study highlights the need for further studies focusing on determinants of childhood accidents in this region and other regions in KSA. Well-designed interventions need to be initiated, including raising awareness and focused health education programs on the causes of childhood accidents and home safety enhancement for parents and teachers. Data collection format by the Ministry of Health needs to be improved to include all types of accidents and potential risk factors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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