

**Epidemiology of Injuries among Secondary School
Students and Assessment of their Knowledge about
Injuries and its Prevention**

Thesis Submitted for Partial Fulfillment of MD Degree in Epidemiology

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ABSTRACT

Background: Injury is the leading cause of death and long term disability and a significant contributor to healthcare costs among children worldwide especially who aged 15 - 19 years. **Objectives:** To determine the prevalence of injuries among secondary school students in Cairo, Egypt and to explore the associated risk factors for sustaining injury and to explore the knowledge, attitude and practice of students towards injuries and its prevention. **Methodology:** cross-sectional study was conducted on secondary school students in eastern and western part of Cairo; self-administered questionnaire was used for assessing injuries sustained in previous 12 months and the associated risk factors for injury and the students' knowledge, attitude and practice towards injury and its prevention. **Results:** The overall prevalence of injuries was 68.5%. Unintentional injuries were the most common injuries occurred as falls (50%) and burn (38.6%). Significant factors associated with sustaining injury were truancy, smoking, alcohol use, quarreling behavior, carrying weapon, threatened by weapon and verbal bullying. There was statistical difference in risk score in relation to gender and exposure to injury. There was statistical significant difference between males and female, where knowledge score was higher in males and attitude score was found higher in females. But, there was no difference between them in practice score.

Practice score was significantly lower among injured students than those not injured. **Conclusion:** study showed higher prevalence of injuries among adolescents. There is lack of awareness about injuries stressed the need for development of injury prevention program.

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LIST OF ABBREVIATIONS

CDC	Centers of Diseases Control and Prevention
ICD-10	International Classification of Diseases 10 th version
RTI	Road Traffic Injuries
WHO	World Health Organization

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INTRODUCTION

Childhood injury is a major public health problem that requires urgent attention. Injury is defined as “unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, chemical energy or from the absence of such essentials as heat or oxygen (**Baker et.al, 1992**). Injuries were classified into intentional and unintentional (**WHO, 2010a**).

Injury and violence is a major killer of children throughout the world, responsible for about 950 000 deaths in children and young people under the age of 18 years each year. Unintentional injuries account for almost 90% of these cases. They are the leading cause of death for children aged 10–19 years and it represents more than 95% of all injury deaths in children occur in low-income and middle-income countries. In developed countries, the child injury death rate is much lower, but, they still a major cause of death, accounting for about 40% of all child deaths In addition to the deaths, their impact includes disability and the costs of treatment, rehabilitation, and lost productivity (**WHO, 2008**).

In Egypt, 1999, an injury surveillance system was implemented to assess the contribution of injuries in general to the overall burden of disease in Egypt; to determine the incidence and characteristics of a

particular type of injury; to identify populations at high risk from injuries; to identify areas where intervention is needed; and to provide data that are critical in making good management decisions. But, this surveillance system is decentralized means that Injuries are reported by the reporting facilities (hospitals, health centers, health groups and health units) covering only one third of institutions (mainly government institutions). The ratio of deaths: serious injuries: hospitalizations were 1:7:46. Review of some independent studies, discussions with authorities and researchers, and the burden of injury report for Egypt reveal that the injury burden is several times higher due to underreporting and misclassification. Injury surveillance programs revealed that injuries accounted for only 3.7% of total deaths. Young adults and men accounted for three quarters of injuries. Nearly 20% of injured persons were hospitalized and deaths in the emergency room accounted for 1–2% of total deaths (WHO, 2010b).

Therefore, population-based household survey was conducted in Egypt 2009 to understand the burden of injury:

The survey revealed that injury represents 20% of total deaths. For every injury death, nearly 15 injured persons require hospital admission and 48 require emergency care services (ratio 1:15:50) which means that 20% of injured persons require hospital admission and one in four of these returns home with varying levels of disabilities. A total of 21.7% of injuries occurred in age group 10 -19. The survey did not capture intentional injuries such as assaults and

suicides in direct interviews with respondents but they are frequent (as reported in other studies and focus group discussions) (**WHO, 2010b**).

Little studies were carried out in Egypt to describe injuries among specific groups as students in schools and universities. Two studies carried out in Ismailia; one study aimed to determine the frequency, nature and risk factors of childhood injuries in the Suez Canal University Hospital Emergency Department. Another study was done to investigate the pattern and the possible risk factors of injuries among school children in Ismailia Governorate. Another study was done in Cairo through focus group discussion to evaluate young Egyptians knowledge, attitude and practice towards injuries (**Hannah et. al, 2010 and Hesham et. al, 2012a & b**).

The etiology of youth injury involves a complex interplay between behavioral and environmental factors. Injury is affected by demographic factors, as age, sex, residence, and socioeconomic status; but, all of them are difficult to modify. While, behavioral factors such as smoking, drinking, drug use, and sports behavior, are modifiable; that is because behavior is constructed from behavioral intentions, attitude and knowledge (**Pickett et. al, 2002**).

Risky behaviors had relationship with injury occurrence and engaging in one form of risk behavior may indicate an increased likelihood to engage in others and the likelihood of youth injury increased in

accordance with the number of risk behaviors reported (**Pickett et. al, 2002 and Peden et.al, 2008**).

Injuries are not inevitable; they can be prevented or controlled through interventions in terms of the “three E’s”: education, enforcement and engineering. These are proven ways to reduce both the likelihood and severity of injury – Education helps build community awareness and influence behavior by informing people about hazardous situations with risk of injury. But, the awareness of the problem and its preventability, as well as political commitment to act to prevent child injury, remains low (**Reyna and Farley, 2006 and Peden et.al, 2008**).

So, in order to cover all these issues related to injury among adolescents; this study was carried out to measure magnitude, describe the pattern, and identify risk factors associated of sustained injury occurred among secondary school students; and assessment of their knowledge, attitude and practice towards injury and its prevention.

GOAL & OBJECTIVES

GOAL:

Reduction of the incidence of injuries among adolescents.

OBJECTIVES:

- 1) To determine the prevalence of injuries (unintentional and intentional) among secondary school students in Cairo, Egypt,
- 2) To assess risk factors associated with injuries among secondary school students,
- 3) To assess the knowledge, attitude and practice of students towards injuries and its prevention.