

# **Environmental Health Hazards Among Primary Schools Children**

## **Thesis**

**Submitted for Partial Fulfillment of the  
Requirements  
of the Master Degree in Nursing Science in  
(Community Health Nursing)**

**By**

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2014**

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**Faculty of Nursing  
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2014**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَقَدْ إِنْ عَمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ  
وَرَسُولُهُ وَالْمُؤْمِنُونَ

( )



*First and foremost, I feel always indebted to **ALLAH**, the kindest and the most merciful for the all his blessings and for giving me the will and strength for completion of this work.*

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
*Last but not least, my deep appreciation and thanks to all schools administrators and every-one cooperate and permitted to me to collect my data in this study.*

*Safaa Mohamed Elsaid*

# *Dedication*

 To my father. رحمه الله

 To my mother.

 To my sister *Ghada*

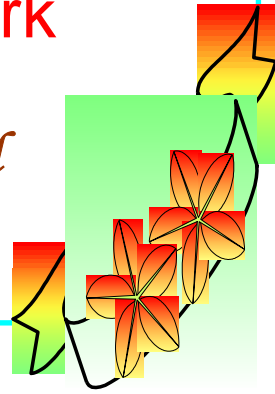
 To my sisters and brothers.

 To my husband

 To my kids "*Radwa & Abd Alla*

I dedicate this work

*Safaa Mohamed Elsaid*



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## **LIST OF ABBREVIATIONS**

3D	:	Three dimension.
BLS	:	Basic life support.
CMMS	:	Computerized maintenance management system.
CPR	:	Cardiopulmonary resuscitation.
EDs	:	Emergency departments.
EPA	:	Environmental protection agency.
HIC	:	High income countries.
HVAC	:	Heating, ventilation, and air conditioning system.
IAQ	:	Indoor Air Quality.
IPM	:	Integrated pest management.
LMIC	:	Low and middle income countries.
NHTSA	:	National high way traffic safety administration.
PALS	:	Pediatric advanced life support.
SEAT	:	School environments assessment tool.
SHS	:	School health services.

## ABSTRACT

A healthy school environment supports learning and contributes to students' health by minimizing distractions that either threatens their mental or physical wellbeing. Children can be particularly susceptible to harm from environmental hazards. This is because their bodies are still developing and they may have relatively higher exposures to environmental hazards. **Aim:** This study was aimed to assess the environmental health hazards among primary school children. **Subject & methods:** It was a descriptive correlational study. The study was conducted to 157 primary schools (64 governmental primary schools and 93 private primary schools). A stratified random sample was selected from the total primary schools in Giza Governorate. **Tools:** Two tools were used for data collection, 1) School assessment sheet was used to assess school environment of primary school, assessment of school health services, disaster plan checklist, & chronic diseases among school children. 2) School environment medical health record to assess the health hazards and injuries among primary school children. **Results:** The most common health hazards among the primary school children, ecchymosis and abrasion (100.0%), cut wounds (96.2%). The causes or risk factors from the primary schools environment included are fall-down and slips (99.2%), and impulsive play (87.8%) in the study sample. The primary schools action to dealing with the accidents is referral to hospital (98.5%), and the first aid through the nurse or trained teacher is (96.9%). **Conclusion:** there's statistical significant differences between the governmental and the private schools related to the air ventilation of classroom, according to water supply and highly statistical significant differences related to refuse disposed and cleanliness, related to painting room, music room, computer lap, and science lap are highly statistical significant differences, regarding causes of health hazards are highly statistical significant differences, and in types of hazards sprain joints, fracture bones, and infectious diseases are highly statistical significant differences. This study **recommends** the importance of making and maintains reports and medical records about school accidents by the school health nurse, training programs about first aid and safety in school environment for school staff especially schools without school health nurse, training of school staff and teachers on issues related to health education, accidents and violence prevention, and maintain continuous health education sessions for primary school children about safety, simple health information, and personal hygiene.

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**Keywords:** School health environment – School health hazards – School age.

## INTRODUCTION

A healthy school environment supports learning and contributes to students' health by minimizing distractions that either threatens their mental or physical wellbeing. The environment should also promote expectations that all students can succeed. Policies and programs to meet the needs of students and staff must support these environments **(Frumkin and Dannenberg, 2013)**.

School health deals with a very important sector of the population; they are the children passing a stage of rapid growth and development. Supportive school environment addresses the physical, psychological, and social environment. The physical environment deals with school premises, the school surrounding, and school policies e.g. anti smoking, and tobacco free schools; in addition to the supportive psychological environment, which is reflected on mental health. Social environment can be supported through different social activities carried by the schools e.g. school picnics and school parties, which also support the psychological environment. The school environment is the responsibility of the Ministry of Education and the school staff. Monitoring the school environment is the responsibility of the school physician and nurse. The school surrounding is the responsibility of the community **(Ministry of Health and Population MOHP, 2012)**.

School sitting and design are examples of how the built environment can influence children's health. When new schools are built a long distance from where families live, then children need to be driven to school, depriving them of an opportunity for physical activity, and contributing to air pollution and risk for automobile crashes. On the other hand, if schools are located within walking or biking distance of where people live, and if safe routes to school are provided,

then children can make walking or biking a part of their daily lives, establishing healthy habits that can last a lifetime **(Centers for Disease Control and Prevention CDC, 2011).**

Healthy schools provide plenty of light and fresh air, and use building materials that do not pose hazards to children. Parks and green spaces are another example of the built environment that contributes to the health of children. Research increasingly suggests that children benefit from the opportunity to play outdoors, where they can explore and enjoy natural environments. Planning parks near residential areas and making sure that the parks include attractive landscaping, well-designed amenities such as playgrounds and sports facilities, and safe routes leading to and from them – is an invaluable strategy of community design that is healthy and nurturing for children **(CDC, 2010).**

A healthy and safe school environment includes the physical and aesthetic surroundings and the psychosocial climate and culture of the school. Factors that influence the physical environment include the school building and the area surrounding it, any biological or chemical agents that are detrimental to health, and physical conditions such as temperature, noise, and lighting. The psychosocial environment includes the physical, emotional, and social conditions that affect the well-being of students and staff **(CDC, 2013).**

The physical environment Behavior is strongly affected by the environment. A well-planned environment encourages positive behaviors; children need a physical environment that matches their size, energy, and ability. Importantly, the environment must facilitate the supervision of children **(Foletta & Geno, 2012).**

Increased indoor air quality results in better health, decreased absenteeism and occurrence of asthma, respiratory

infection, and fatigue. Proper ventilation in schools can lead to better concentration and health of the children and staff as well as decreased occurrence of headaches and drowsiness ([www.healthyschools.org](http://www.healthyschools.org), 2013).

Children can be particularly susceptible to harm from environmental hazards. This is because their bodies are still developing and they may have relatively higher exposures to environmental hazards than adults. There are still many unknown factors, especially about cumulative effects and long-term impacts of environmental hazards (**Cracken, 2014**).

"A safe, clean, and well-maintained school with a positive psychosocial climate and culture is boost student and staff self-esteem and health as well as students' educational achievement.

The physical and aesthetic surroundings and the psychosocial climate and culture of the school can affect student and staff self-esteem and health as well as students' academic achievement (**Barrett & Zhang, 2014**).

### **Significance of the study:**

Unintentional injuries are a leading cause of death among children. Over 875 000 children less than 18 years of age die annually in the world as a result of injuries, mostly in low- and middle-income countries (LMIC), where injuries account for 13% of the total burden of morbidity among children less than 15 years of age. According to a report from the United Nations Children's Fund, childhood injuries declined by 50% in high-income countries (HIC). Unfortunately, several reports from low-income countries have shown the opposite trend. The study sample consisted of 1559 children less than 12 years of age who were seen in hospital from emergency departments EDs in four urban

centers in developing countries. Of these children, **32% were in Egypt**, 28% in Pakistan, 25% in Bangladesh and 15% in Colombia. 63% of injuries occurred mainly while children were at play, while only 7% took place during school (**El-Sayed et al., 2010**).

The physical environment of school buildings and school grounds is a key factor in the overall health and safety of students, staff, and visitors. School buildings and grounds must be designed and maintained to be free of health and safety hazards, and to promote learning. Studies have shown that student achievement can be affected either positively or negatively by the school environment. Policies and protocols must be in place to ensure food protection, sanitation, safe water supply, healthy air quality, good lighting, safe playgrounds, violence prevention, and emergency response, among other issues that relate to the physical environment of schools (**New Hampshire Department of Education, 2012**).

School health nurses at the heart of the school health practice is the belief that all children have the ability to learn, right to an education and society is best served when its young people are educated. Each one has responsibility in molding the future of this country Health (**Health Authority of Abu Dhabi, 2010**).