

## Review Article

# School safety and emergency preparedness in Saudi Arabia: a call for effective action

Ali S. R. Alsubaie\*

College of Public Health, University of Dammam, Dammam, KSA

**Received:** 15 January 2017

**Accepted:** 23 February 2017

**\*Correspondence:**

Dr. Ali Saad R. Alsubaie,

E-mail: [asralsubaie@uod.edu.sa](mailto:asralsubaie@uod.edu.sa)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

### ABSTRACT

Accidents and injuries are a growing global public health problem. Both accidents and injuries can happen anytime and anywhere. Children and school personnel might experience medical emergency situations because of injuries, complications of chronic health conditions, or unexpected major accidents that occur in schools. A safe learning environment is essential for students, and without it they are unable to focus on learning the skills needed for a successful education and future development. There are about 6 million children younger than 18 years living in the kingdom of Saudi Arabia. Regrettably, many accidental tragedies occurred during the few last years in schools in Saudi Arabia which caused many forms of injuries and death among children and school teachers. Unfortunately, most schools lack a health care professional to respond to school medical emergencies. It is essential to believe that there is a fundamental link between emergency preparedness and disaster response. Therefore, schools that are prepared for an emergency are more likely to be prepared for complex events such as major fire, injury related accidents and natural disaster. The quality of schools about safety management and emergency preparedness is far worrying in Saudi Arabia. Thus, there is a need in creating a “culture of safety” and realize that injuries prevention and safety promotion are everybody’s business. The time has come to develop effective injury prevention strategies and promote safety that can help reduce the impact of injuries on the health of the Saudi population, economy and health care system. The issue of school safety must be a major concern at all levels of government. Efforts should be made to increase the education of school personnel in the assessment and management of safety and life-threatening emergencies, particularly head injury, cardiac arrest, suffocation and fire events.

**Keywords:** Emergency, Injuries, Safety, Public health, School health, Saudi Arabia

### INTRODUCTION

Accidents and injuries are a significant threat to public health worldwide. Injuries are one of the leading causes of hospitalization disability and death across the world. Injuries have been shown to account for a significant health burden on all populations, regardless of age, sex, income, or geographical region.<sup>1</sup> In Saudi Arabia, the annual mortality rate due to unintentional injuries were estimated at 14.8 per 100,000 people.<sup>2</sup> It has been reported that unintentional injuries are the leading cause of morbidity and mortality among children in the United

States, with an estimation of over 12,000 children died from injuries.<sup>3</sup> However, the prevalence, pattern and causes of injuries may vary significantly across countries and population groups. It has been reported that injuries are preventable, nonrandom events, and decreasing the burden of injury is among the main challenges for public health in the next century.<sup>1</sup> Prevention of injury can substantially reduce the cost burden on national economy and public healthcare system. In addition to issues involving medical services and hospital care, other significant concerns should be noted, such as the financial cost and mental health effects of exposure to

accidents, trauma and injury; and both victims and their families can be affected and suffered. Moreover, injuries create a need for rehabilitation that affects patients' productivity and well-being.

The United Nations Convention on the Rights of the Child in 1989 initiated a new understanding of respect for children and their rights, from birth up to the age of 18 years. The Convention underlines the social responsibility to protect children and to provide them with appropriate support and services. The Convention highlights that children have the right to the highest possible level of health and the right to a safe environment, free from injury and violence.

### **THE SITUATION IN SAUDI ARABIA**

There are about 6 million children younger than 18 years living in the kingdom of Saudi Arabia. Children spend quite long time in their school premises, and the average school-aged child spends 6-8 hours of his or her day in school.

Unfortunately, in Saudi Arabia many accidental tragedies occurred during the few last years in schools which caused many forms of injuries and death among children and school teachers. For instance, in Mecca/Makkah city, a holy city of Saudi Arabia during the year of 2002, at least fourteen girls have died at a primary school as they tried to flee a fire. Moreover, in Jeddah city, one of the biggest cities in Saudi Arabia another school fire tragedy occurred in 2011, which left two female teachers dead and over 60 girls' students and school personnel injured. Also, in Jeddah a six years old child was found dead when he was left asleep in a school bus when all students disembarked. On May 19, 2014 in Jazan city, fire accident was occurred inside a classroom of a school, where three girl students were suffocated and hospitalized. However, those were some accidents which have been reported in national newspapers and probably many cases happened almost every day, yet there is no national registry system with regard to accident and emergency events in schools.

In addition to injury-related emergencies, other medical emergencies can occur among students and staff at school such as asthma attack, diabetic crises, sudden cardiac attack, violence and environmental /physical hazards. Such events highlight the importance of emergency preparedness in school and the role of school personnel, the school health officer (e.g. school nurse) and safety officer in the process of managing emergencies events occurring at school. It is important to note that there is a fundamental link between emergency readiness and disaster preparedness. Therefore, schools must be recognized as a main setting for accidents and injuries intervention. Schools should be prepared for an emergency and equip their staff and children with required skills, so the individual will be more likely to be prepared for accidents events and complex events such as

community and public disasters. Saudi Ministries of health and education have a key role to play, in injury prevention. However, the prevention of accidents and children injuries in and out of schools demands a collaborative effort and the involvement of many sectors at both the national and local level.

### **THE CHALLENGES**

High proportion of school buildings are rented houses and not meeting the required safety criteria. Many schools are not in compliance with many of the recommendations for emergency preparedness; specific areas for improvement include school's staff and student's emergency training and school safety monitoring. Also, the majority of schools in Saudi Arabia lack a well-trained safety and health officer on site to respond to school emergencies. Moreover, injuries are among the most under-recognized public health problems in Saudi Arabia. As one of developing countries, Saudi Arabia lack research aim to assess accidents and trauma challenges, and interventions to reduce accidents related injuries. Accurate data reflecting incidence and prevalence of accidents and injuries are lacking, although it is essential for health care planning, intervention program and public policy. However, major knowledge gaps of these areas restrict the efficacy of interventions tackling safety, injuries and emergency issues. Efforts should be made to increase the education of school personnel in the assessment and management of safety and life-threatening emergencies, particularly head injury, cardiac arrest, suffocation and fire events. Additionally, well-trained school staff will be able to recognize problems in their school environment that may be contributing to poor health for both students and staff.

### **THE OPPORTUNITIES AND LESSONS LEARNED**

Among the important lessons learned during the past decades is surely that accidents and injuries are preventable. Many prevention strategies have already been shown to be effective. Public health also has an important role to play in continuing the research on risk and protective factors for injuries.<sup>1</sup> Public health has a significant role in designing and promoting primary prevention strategies through school health services targeting accident and injury prevention. The public health approach to accidents and injuries prevention involves the 4 key steps of an epidemiologic approach to any health problem.<sup>4</sup> The approach starts with defining the problem (e.g. magnitude, scope, and characteristics of the problem). The second step is identifying the associated risk factors and causes. The third step is to develop and evaluate interventions. The final step is to implement the interventions on a broad scale. Unlike the traditional view, nowadays, it has been recognized that most injuries, like diseases, are not accidental but predictable, preventable, and controllable.<sup>5</sup> Many public health agencies throughout the world are making large national investments in preventing injuries, whether

through research, improved road traffic safety practices, school education programs, anti-bullying campaigns, or improved trauma care systems.<sup>6</sup> Nevertheless, accidents and children injuries cannot be solved by public health only. To address the problem comprehensively, families, educators, local governments, coalitions, and nongovernmental organizations need to participate and work together.<sup>5</sup> However, tackling injuries among children must be a central part of all initiatives to improve the situation of morbidity and mortality and the general well-being of children.<sup>6</sup>

Injuries to children and youths do not occur in isolation. Therefore, society needs to partner in creating a “culture of safety”, so, child injury prevention and safety promotion are everybody’s business.<sup>5</sup> However, it has been suggested that the biggest obstacle to making fundamental societal changes in injury patterns is not a shortage of funds, but lack of political will.<sup>7</sup> The time has come to develop effective injury prevention strategies that will decrease the impact of injuries on the health of the Saudi population and the health care system in the country. Without such data, public officials cannot be expected to recognize trauma and injuries as serious public health problems. Research is needed to inform policymakers, and contribute to advances in knowledge. Yet, in low and middle-income countries the number of epidemiologists and other trained researchers who carry out injury research is extremely limited; in addition to little funding support.<sup>8</sup> Other critical gaps include the absence of trained emergency officers and organized intervention programs in schools and communities. WHO and UNICEF issued a call for a greatly expanded global effort to prevent child injury.<sup>9</sup> This was followed by WHO’s ten-year plan of action on child injury.<sup>10</sup> Many objectives, activities and expected outcomes on child injury were proposed, also the plan covered the fields of data, research, prevention, services, capacity building and advocacy.

## CONCLUSION

Nowadays, students health and schools safety are serious public health issues for governments, authorities, families and communities. Undoubtedly, student and school’s safety have several aspects, however, environmental physical safety, emergency preparedness and their related factors are considered among the most critical ones. The Ottawa Charter for Health Promotion stated that “health is created and lived by people within the settings of their everyday life; where they learn, work, play and live”.<sup>11</sup> So, schools as a social and physical environment should be secure and safe to protect school personnel and students’ lives, foster healthful behaviour and enhance better academic achievement. Therefore, schools are facing increased expectations and pressures that should be carefully addressed.

WHO defines a health-promoting school as “one that constantly strengthens its capacity as a healthy setting for

living, learning and working, which imply the protection of students and staff against accidents, injury, disease and any health hazards”.<sup>12</sup> Components of a healthy school environment involve:

### *Protection from physical threats*

- Traffic and transport
- Violence and crime
- Injuries
- Extreme heat and cold
- Radiation

### *Protection from chemical threats*

- Water pollution
- Air pollution
- Pesticides
- Hazardous waste
- Hazardous materials and finishes
- Asbestos, paint
- Cleaning agents

### *Protection from biological threats*

- Unsafe or insufficient water
- Unsafe food
- Vector-borne diseases
- Venomous animals
- Rodents and hazardous insects
- Other animals (e.g. dogs)

So, a healthy school is the one that promotes health and learning and strives to provide a healthy environment, to make the school a healthy place for children and school staff, through effective leadership, school health education, school health services and collective collaboration.

It is a hope that this paper highlighted the need for more efforts towards better healthy school environment, and can inform policy makers in Saudi Arabia to promote school health and tackle safety and emergency management in schools seriously at both local and national levels. Therefore, the issue of school safety must be a major concern at all levels of government. However, data and information about any health-related issues are important. Yet, data alone may not be enough to create change, especially if it does not get into the hands of decision makers who determine government priorities and funding.<sup>14</sup> The time has come to develop effective injury prevention strategies and promote safety that can help reduce the impact of injuries on the health of the Saudi population, economy and health care system.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Krug EG, Sharma GK, Lozano R. The global burden of injuries. *Am J Public Health.* 2000;90:523-6.
2. Unintentional Injuries in Saudi Arabia. Statistics on Overall Impact and Specific Effect on Demographic Groups. Available at: <http://global-disease-burden.healthgrove.com/1/94919/Unintentional-Injuries-in-Saudi-Arabia>. (Accessed on: 11 November, 2016)
3. Borse NN, Gilchrist J, Dellinger AM, Rudd RA, Ballesteros MF, Sleet DA. CDC Childhood Injury Report: Patterns of Unintentional Injuries among 0 - 19 Year Olds in the United States, 2000-2006. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2008.
4. Mercy JA, Rosenberg ML, Powell KE, Broome CV, Roper WL. Public health policy for preventing violence. *Health Aff (Millwood).* 1993;12(4):7-29.
5. Sleet DA, Pogostin CL, Bryn CS, Haverkos L, Spavone S, Levin R, et al. Child and Adolescent Injury Prevention: A Public Health Perspective. Injury Prevention for Children and Adolescents: Research, Practice, and Advocacy. American Public Health Association. 2012.
6. Peden M, Oyegbite K, Ozanne-Smith J, Hyder AA, Branche C, Rahman AKMF, et al. editors. World Report on Child Injury Prevention. Geneva: World Health Organization. 2008.
7. Frieden R. A framework for public health action: the health impact pyramid. *Am J Public Health,* 2010;11:590-5.
8. Hofman K, Primack A, Keusch G, Hrynkow S. Addressing the Growing Burden of Trauma and Injury in Low- and Middle-Income Countries. *Ame J Pub Health.* 2005;95:(1):13-7.
9. Child and adolescent injury prevention: a global call to action. Geneva, World Health Organization and UNICEF, 2005. Available at: [http://whqlibdoc.who.int/publications/2005/9241593415\\_eng.pdf](http://whqlibdoc.who.int/publications/2005/9241593415_eng.pdf). (Accessed on: 5 November, 2016)
10. Child and adolescent injury prevention: a WHO plan of action. Geneva, World Health Organization, 2006. Available at: [http://apps.who.int/iris/bitstream/10665/43267/1/9241593385\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/43267/1/9241593385_eng.pdf). (Accessed on: 5 November, 2016)
11. WHO. The Ottawa Charter for health promotion. Health Promotion International 1987. Available at: <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/> (Accessed on: 5 May 2016).
12. WHO. School and youth health. What is a health promoting school? Available at: [http://www.who.int/school\\_youth\\_health/gshi/hps/en/](http://www.who.int/school_youth_health/gshi/hps/en/). Accessed on: 6 November 2016
13. WHO. INFORMATION SERIES ON SCHOOL HEALTH DOCUMENT 2. The Physical School Environment: An Essential Component of a Health-Promoting School. Available at: [http://www.who.int/school\\_youth\\_health/media/en/physical\\_sch\\_environment.pdf](http://www.who.int/school_youth_health/media/en/physical_sch_environment.pdf). Accessed on: 6 November 2016
14. Currie C, Alemán-Díaz AY. Building knowledge on adolescent health: reflections on the contribution of the Health Behaviour in School-aged Children (HBSC) study. *Eur J Pub Health.* 2015;25(2):4-6.

**Cite this article as:** Alsubaie ASR. School safety and emergency preparedness in Saudi Arabia: a call for effective action. *Int J Res Med Sci* 2017;5:1176-9.