Zahedan School Fire: Endless Fire Incidents in Iranian Schools

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ABSTRACT

Emergencies frequently happen and sometimes their victims are school students. School age children and adolescents may be more vulnerable to life events and require more attention than adults, depending on the stage of their growth. The private elementary school of Osveh Hasaneh in Zahedan, Iran, caught fire on December 18, 2018, at 9:00 AM, where 4 students were killed. This school fire is the highest rate of mortality in Iran in terms of the number of student deaths. Considering the repeated nature of such incidents in Iranian schools, it is necessary to increase the awareness of risk of fire in schools to promote a culture of fire prevention in society.

Key Words: incidents, Iranian schools, school fire, students

A negative incident, such as a school fire during an individual's lifetime can affect her or his physical, psychological, social, and even spiritual health. Such an impact is not only dependent on the nature of the incident, but also is related to the individual's perception of the incident and its causes. In addition, the person's age and stage of growth; past life events and the time of their occurrence, their number, and nature; the person's strength of personality, sources of stress in life, defense mechanisms, and ability to adapt to stress; supporting sources; and so forth are all considered critical factors.[1] In this regard, school children and adolescents may be more vulnerable to negative life events than adults, depending on their stage of growth, and thus require more attention by parents, physicians, school personnel, policy-makers, and local government authorities to address the problem and provide appropriate treatment.[2]

An estimated 4000 school building fires were reported by US fire departments each year and caused an estimated 75 injuries and US $66.1 million in property loss. The three leading causes of school building fires are cooking (42%), intentional action (24%), and heating (10%). At 41%, intentional action was the leading cause of non-confined school building fires.[3]

Iran is an ancient country located in the Middle East, a region between Asia, Europe, and Africa. Iran with a population of almost 80 million, of which more than 65% are urban dwellers, stands as the 17th populous country in the world. Iran's population is young; almost one-third of the population is less than 15 years old and only almost 5% is over 60 years.[4] According to the head of the Organization for Development, Renovation and Equipping Schools (ODRES) of Iran, 40% of Iranian schools are not equipped with a standard heating system, where the tools for fire prevention and emergency exit placement are not predicted in terms of safety. Despite the efforts made in recent years, there is no strong impetus for standardizing school heating systems in schools (Iranian school building heating standards) and renovating the 30% of Iranian schools.[5] This low level of attention has caused school fire to be one of the frequent incidents with unpleasant consequences, as school fire incidents have led to over 50 deaths and injured people during the recent years (Table 1).

Although the incidents occurring for students may vary, there are many similarities with respect to individual disaster responses among them. Therefore, the pains of children and adolescents may be relieved by understanding the responses and symptoms that children and adolescents may exhibit, and then planning for them.

ZAHEDAN SCHOOL FIRE

The private elementary school of Osveh Hasaneh in Zahedan caught fire on Tuesday, December 18, 2018, at 9:00 AM. When the teachers noticed the incident, they evacuated the students from the school and informed the firefighters and the emergency department. When the rest of the students were in the school yard, 4 students entered the classroom where an oil heater caught fire and the floor carpet flared up for unknown reasons. Nobody knew about the presence of 4 students in the classroom who were hiding

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TABLE 1

School Fire in Iran During the Recent 20 Years

No.	Incident	Date	Cause of Fire	Injury		Death	
				Student (#)	Teacher (#)	Student (#)	Teacher (#)
1	School fire in Shaft village	1997	Oil heater	11	1	–	–
2	School fire in Safilan village	2004	Oil heater	13	–	–	1
3	School fire in DeRozan village	2006	Oil heater	8	–	–	–
4	Fire at Zahedan school dormitory	2010	Unspecified cause	14	–	1	–
5	Fire at Chabahar school dormitory	2011	Electrical wiring	2	–	3	–
7	School fire in Shinabad village	2013	Oil heater	29	–	2	–
8	School fire in Zahedan city	2018	Oil heater	–	–	4	–

FIGURE 1

Zahedan School Fire.

under the desks instead of running out of the classroom. The 4 students suffered severe burns leading to their deaths.

This incident can be considered the school fire with a high rate of mortality in Iran in terms of the number of student deaths. After the preliminary investigations of the firefighters, an oil heater was found to be the cause of the fire in the classroom[5,6] (Figure 1). The heating system of this school was an oil heater, and, despite the previous warnings of the inspectors, the school authorities did not take any measures to enhance the school's heating system.

It should be noted that such similar events had been reported in other countries as well; on March 11, 2002, a fire at a girls' school in Mecca, Saudi Arabia, killed 15 people, all young girls.[7]

DISCUSSION

Irrespective of who is responsible for this incident, our question is what kind of preparedness and knowledge could have saved the lives of these students. Based on the evidence, equipping all schools with standard heating systems, especially in deprived areas, is not possible in the short term. In many of the past incidents, the underestimation of risks by teachers has increased the deaths and consequences of the incidents. For example, in the Shinabad incident, the teacher's inability to estimate the potential risk caused her to underestimate the problem and not to exit the students from the classroom.[5]

Investigating the recent incidents indicated that certain factors such as lack of the appropriate training or inadequate training of school staff; lack of students' knowledge about risks and appropriate responses after a fire occurs; lack of school standardization and compliance with structural and nonstructural safety principles; lack of appropriate monitoring and control of the design, construction, and exploitation of schools; the shortage of heating facilities; lack of heat early warning systems; and lack of emergency exit routes were reported to be the causes of these incidents.[2,8]

In Iran, new public and private buildings are built based on safety standards, and the Fire Department is held accountable for monitoring schools' fire alarm and extinguishing systems. The ODRES is responsible for the construction, development, restoration, and renovation of school buildings and the procurement of the instruments and equipment they need, as well as for the determination of appropriate safety criteria and standards for educational settings. According to the law, the Organization of Non-governmental Schools, a subdivision of the Education Organization, is held accountable for the task of supervision on the performance private schools and educational centers.[9]

Regarding the recent fire that occurred in a private school, the Zahedan Organization of Non-governmental Schools should have monitored the status of the school's safety and heating system. According to reviews, to reduce costs, some private schools use non-standard buildings and equipment that are not appropriate to serve the functions of educational centers, leading to increased risk of school incidents, including fire.

In this regard, it is necessary to consider various factors for school safety in the cycle of studies, design, implementation,

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and exploitation of schools. For example, selecting the appropriate site where the school is not at risk of natural disasters, such as earthquakes and floods, is of great significance.[10,11] In addition, structural design based on minimum structural vulnerability to disasters, the use of standard and robust materials, observance of safety standards in the design, manufacturing, and procurement of safety equipment, as well as the design and implementation of fire detection and fire warning systems are the significant safety principles in schools, which should be addressed according to clearly predetermined criteria.

The Ministry of Education, with the assistance of relief organizations, will provide educational content with emphasis on the measures of prevention, preparedness, and response for teachers and students. All schools should have a prevention and response plan according to their structures that should be enhanced annually.[12] By designing different scenario drills and practices, school preparedness should be evaluated to identify and resolve the weaknesses of the plan (at least 2 table-tops, drills or exercises per year).[13] Equipping schools with standard heating systems and a periodic inspection by the firefighter department are essential for the appropriate functioning of the fire equipment.

Preventive and protective measures, such as limiting the use of flammable materials, using fire resistant materials to prevent smoke and fire from spreading in the building, launching a heat early warning system, and teaching appropriate immediate reactions to the people potentially involved in a fire, are considered to be important steps for timely notification of the individuals at schools.[12] Determining the emergency exit routes, especially in classrooms and halls, is one of the main principles of school safety.[11]

The notable point about the school safety program is that this program can be operationalized with the cooperation of school staff, students, parents, and communities.[12,14,15]

The purpose in considering and observing the fire safety principles in the design and construction of schools is to achieve optimal school safety in order to reduce the risk factors for fire and other negative incidents in schools. By observing and implementing the prevention and protection standards for prevention of fire and incidents, as well as predicting and preparing for incidents, the loss caused by fire and incidents can be effectively reduced. Optimal results can be obtained when the selection of school location and all essential criteria for architectural plans, mechanical installations, electrical installations and building structures are in accordance with the rules and regulations.[11]

The measures that should be taken at different stages after an incident occurs require a well-thought and operational plan to prevent the occurrence of similar events in the future. All schools should follow such plans in order to provide the most support for students and school staff when an incident occurs, because studies have indicated that schools can reduce the problems and sufferings of people involved in incidents and disasters by developing an appropriate plan.[16,17]

CONCLUSION

Schools are considered one of the main constituents of the public health education chain and contribute greatly to the prevention of fire casualties by families, indicating the great potential of schools for a long-term change in fire safety culture over time.[8,18] School authorities' awareness of fire safety, preventive measures, and the community's safety culture should be promoted by using a hybrid approach so that school children's knowledge about fire safety precautions gained at school and home can greatly help prevent fire.[19]

It should be mentioned that Iran participated in the UNISDR Safe School Campaign in 2015 and renovated some schools; however, the renovation was mainly structural, and nonstructural components such as heat early warning systems were not given sufficient attention.[20]

To protect schools against fire and natural disasters, special attention should be directed to safety factors in the cycle of studies, design, architecture, installation, implementation, and exploitation of schools. Achievement of the goals set depends on familiarity with and appropriate use of the relevant codes and regulations, and strict monitoring of their implementation.

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Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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