SCHOOL FIRE IN IRAN: SIMPLE ACTIONS SAVE LIVES

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SUMMARY. On December 5, 2012 a fire broke out in a primary school in Iran, causing injuries to 26 children and two deaths. The fire came from an oil stove. Rather than evacuate the classroom and use the fire extinguisher, the teacher attempted to remove the stove itself from the classroom. During this process an explosion occurred resulting in a haphazard attempt at evacuation. This tragedy highlights gaps in both the policy and practice of fire safety. From 2005 to 2012, Iran experienced six large school fires that led to 67 injuries and five deaths. Five events were related to oil stoves. About 30% of Iran's classrooms use oil stoves for heating during the winter with 3.4 million students and 150,000 teachers at risk. Iran's Ministry of Education has mandated that regular training of school personnel in fire safety measures should be organized but no safety officer is tasked to prepare and conduct this training. Instead, the task is delegated to the Fire Departments, which fall under municipal administrations; however, such departments do not exist in 93% of the rural areas of Iran. School fires are not unique to Iran. Similar tragic events have occurred in several middle-income countries (India, Kenya, Russia) over the last decade. This article presents an overview of school fires in Iran and proposes preventive strategies through a reform in policy making and practice, including education of students and school personnel along with regular drills, designation of a fire safety officer, and development of a countrywide school fire registry.

Keywords: school fire, safety, injury prevention

Introduction

On the morning of 5 December 2012, a fire broke out in a primary school at Shinabad, a village in Piranshahr in the northwest of Iran. The fire and subsequent explosion resulted in massive damage to the school, seven children were hospitalized in critical conditions, and two little children lost their lives.[1] The incident highlighted many of the vulnerabilities of institutions in Iran to fire hazards, as well as important simple actions that could have mitigated the effects of the tragedy.

The teacher and the children in the class, all girls aged 6 to 10, were in the classroom when a fire started in an oil stove used to heat the classroom. The use of such stoves is common in rural Iran. Rather than evacuate the classroom as provided for in school regulations, the teacher enlisted the assistance of the male teacher in the next classroom as well as that of the school custodian to attempt to put out the fire. When the efforts to extinguish the fire failed, the three adults attempted to get the stove out of the classroom. During this process an explosion occurred resulting in a haphazard attempt at evacuation. While the adults in the classroom were able to escape, most of the girls were trapped in their classroom. As news of the fire spread, the fire brigade from nearby Piranshahr was dispatched and the village residents came to assist. The civilian rescuers were able to break the iron bars that covered the classroom windows to rescue the children, but several of them had suffered severe burns and inhalation injuries. Seven children were hospitalized in critical conditions and two subsequently died because of their injuries.

This school tragedy highlights gaps in both policy and practice of fire safety and injury prevention as well as basic principles of preparedness that might have prevented these tragic injuries and deaths from happening. While regulations are in place governing how school personnel should respond to such events in Iran, such guidelines are put in place without considering the actual ability of the institutions to carry out the procedures. For example, the Ministry of Education has mandated regular training for

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school personnel in fire safety measures but safety officers are not instructed to prepare and conduct this training. Instead, the task is delegated to the Fire Departments, which come under municipal administration, but such departments do not exist in rural parts of Iran (only 9% coverage by fire brigades for rural communities).[2]

In addition, the first principle of hazard management should be that hazard avoidance is paramount. Simple evacuation of the school might not have prevented the damage to the facility but would have mitigated the losses in terms of human lives and injuries. Currently, there is no inspection regime to ensure that regular drills are carried out in schools to make students and personnel proficient in school evacuation. The country's vulnerability to earthquakes specifically makes regular evacuation drills a primary public health measure and schools are a prime target for disseminating such public health messaging.[3]

According to the Fire Department report, the school had a functioning fire extinguisher, but it was not used in this event.[1] While the reasons for this are not clear, there is anecdotal evidence to suggest that there is no routine training in the use of extinguishers for school personnel, and this may have contributed to the neglect of this fire safety tool. Recent school fire safety reforms in other countries, including the United States[4] and the United Kingdom,[5] indicate the importance of designating a member of the staff at each school or institution as a fire safety officer. This provides an important liaison between the fire brigade and the school itself, while providing a way to leverage the capacity of fire services, especially when, as in Iran, they do not exist in all communities. Having an individual trained by the fire services as a "fire safety officer" (FSO) can also be a means of shared responsibility - the FSO can primarily be made responsible for organizing frequent drills of students and staff as well as checks of safety equipment (e.g. fire extinguishers and safety doors), allowing for less frequent evaluation of structural safety by the fire services as well as certification and retraining of the FSO. All this also helps to ameliorate the problem of overlapping mandates between the Ministry of Education and fire management services that exists in Iran. Since the country is prone to a variety of hazards, we propose that such a safety officer be trained for all hazards and be the primary school contact with civil defence forces (e.g. police and fire services).

It is important to note that 30 per cent of Iran's classrooms use oil stoves for heating during the winter months with 3.4 million students and 150,000 teachers potentially at risk. While it may seem odd that the teachers in this case attempted to remove the stove from the classroom, it becomes more understandable when one notes that such oil stove fires are common in rural Iran where these devices are routinely used to heat public and private buildings. When these stoves overheat or spill oil, this appears to be a common occurrence.

While large school fires with significant losses of life are thankfully not common in Iran, these events still occur with disturbing regularity. It is difficult to ascertain the total number of fires (no central easily accessible registry exists), but a review of media reports reveals that from 2005 to 2012, Iran experienced six large school fires (five in rural areas, one urban), causing 67 injuries and five deaths.[6] Oil stoves were reported as the cause of five events, while one event was reportedly due to an electric heater. It Is thought that in fact more school fires occurred in the country but may not have been given media coverage as they did not result in severe burns or deaths. Of note, within weeks of this tragedy, two more school fires were reported that did not lead to injuries as they happened at night when the buildings were empty.

The paucity of data on school fires in Iran is unlikely to be due to their infrequency but more probably reflects the lack of any rigorous collection of data on such events. We propose another reform providing for a mandatory registry of all hazardous events that occur in schools. Maintained by the Ministry of Education, this registry would classify events by type of hazard and severity (e.g. minor, moderate, severe). Such a database, albeit rudimentary, would be crucial to developing proper public health and safety measures for the future and to monitoring the vulnerability of schools.

According to a guideline ratified by Iran's Ministry of Education in 2006, all schools have to be equipped with fire extinguishers and all teachers and students must be trained in their use by the Fire Department. However, the gaps in coverage of rural parts of the country by fire brigades have yet to be addressed. Only through a comprehensive analysis of this and other such tragedies and a public health approach to school safety can such tragedies in Iran be prevented in the future.

Immediate evacuation of a classroom is the simplest way to save lives and this practice should be drilled with a competent inspection regime to ensure that the drills are taking place regularly. Furthermore, in an earthquake-prone country like Iran, evacuation should be a familiar and routine procedure. The fact that it was not implemented in this case may be related to the fire safety culture in Iran that does not yet accord the same perception of risk to fire events as to earthquakes. Such deficits in risk perception have been documented in other middle-income countries, e.g. Brazil.[7] Overcoming such perceptions remains a significant challenge to public health practitioners interested in fire safety in Iran.

Such school fires are not unique to Iran. Similar tragic events have occurred in several middle-income countries over the last decade including a rash of school fires nearly identical to this one that occurred in the spring and summer of 2003 in Russia, killing and injuring almost 100

children in all.[8,9] The next year saw more school fires raging in southern India, killing 90 children and injuring dozens more.[10] More recently, the year 2012 saw multiple school fires occurring just weeks apart in Kenya, killing scores of children in a boarding school,[11-13] as well as in Mantralya, India.[14] All of these events prompted reviews of school fire safety, and in the case of Russia and India, large-scale reforms are under way, including outright closure of schools that fail to meet fire safety standards.[15-17] Unlike industrial fires, such as the horrific Tazreen Textiles fire in Bangladesh in December 2012, where 112 workers died because they were trapped by locked fire doors and either burned to death or asphyxiated by fumes, schools are not places routinely filled with hazardous or flammable materials, blast furnaces and equipment.[18] Furthermore, protection from them cannot be outsourced to the private sector; rather, it must be a primary responsibility of local health and safety authorities.

Fires and the resultant damage in terms of loss of infrastructures, loss of lives, and injuries with a long-term impact in terms of disability and disfigurement continue to be a significant public health hazard in Iran and worldwide. Like most fires, those in schools are largely preventable through increased fire safety education, supervision, intervention, and technological innovation.[19] School awareness of fire safety measures and a community fire safety culture must be further enhanced in Iran. A combined approach in which children receive fire prevention education both at school and in the home may be the most effective method for improving both fire prevention knowledge and behaviour.[20]

Conclusion

Schools are one of the most important links in the chain of public health education and such awareness, education, and training have an important impact on the community's capacity at household level for the prevention of injury, representing the best opportunity for long-term modification of fire safety culture over time.

RÉSUMÉ. Le 5 décembre 2012, un incendie dans une école primaire en Iran a causé des lésions à 26 enfants et deux décès. Le feu provenait d'un poêle à pétrole. Plutôt que d'évacuer la classe et utiliser l'extincteur, l'enseignant a tenté de porter le poêle au-dehors de la salle de classe. Pendant ces moments une explosion s'est produite, suivie par des tentatives hasardeuses à l'évacuation. Cela met en évidence les lacunes à la fois politiques et pratiques de la sécurité anti-incendie. De 2005 à 2012, il y a eu six grands incendies en Iran avec cinq décès et 67 blessés. Cinq de ces événements étaient liés à des poêles à pétrole. Environ 30% des salles de classe en Iran utilisent les poêles à mazout pour le chauffage pendant l'hiver, avec 3,4 millions d'élèves et 150.000 enseignants à risque. Le Ministère iranien de l'Education a insisté sur la formation régulière du personnel scolaire pour ce qui concerne les mesures de protection contre les incendies, mais les agents de sécurité chargés de préparer et de diriger cette formation n'existent pas. Au lieu de cela, la tâche est déléguée aux services d'incendie qui relèvent des administrations municipales, mais ces services n'existent pas dans 93% des zones rurales de l'Iran. Les incendies dans les écoles évidemment ne se produisent pas seulement en Iran. Des événements tragiques similaires ont eu lieu dans plusieurs pays à revenu intermédiaire comme l'Inde, le Kenya et la Russie au cours de la dernière décennie. Cet article présente une vue d'ensemble des incendies dans les écoles iraniennes et propose des stratégies de prévention basées sur une réforme dans l'élaboration des politiques d'action et des pratiques, y compris l'éducation des élèves et du personnel scolaire ainsi que des exercices réguliers, la désignation d'un agent de sécurité anti-incendie, et la compilation d'un registre national de tous les incendies qui se vérifient dans les écoles iraniennes.

Mots-clés: incendie dans les écoles, sécurité, prévention des lesions

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