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A MANMADE URBAN DISASTER CAUSED A CHILD DEATH: EXPERIENCE AND LESSONS LEARNT FROM A TRAGIC CASE STUDY IN BANGLADESH

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INTRODUCTION

Injuries are a leading cause of death, which account for 10% of mortality globally (Mock et al. 2004). The World Health Organization (WHO) estimated that almost 90% of deaths are occurring due to injuries in low and middle income countries (Hofman et al., 2005). The South East Asian region is the most vulnerable (Alounge and Hyder 2014). It is estimated unintentional injuries result in 279,000 deaths in children under 5 years of age worldwide each year (Jagnoor et al., 2011). The study found that among injuries, childhood falls and their complications are one of the global burdens of disease. Falls constituted the 4th leading cause of death in children (Alounge and Hyder 2014 and Chowdhury et al., 2013). An epidemiological study in Bangladesh showed falls as the 4th leading cause of morbidity after infancy (Chowdhury et al., 2010). Injury due to drowning is the leading killer among children in Bangladesh, especially at the age group one to four years (Rahman et al., 2008).

The Bangladesh health and injury survey conducted in 2003 showed that almost 17,000 children are die due to drowning in each year, and more than 70% of them are between 1–4 years old (Rahman et al., 2005). The risks and hazards of falls and drowning occur everywhere in the Bangladesh (Chowdhury et al., 2013, Rahman et al., 2008, Rahman et al., 2012). Injuries as a result of manmade disasters are also quite common in Bangladesh, especially in fire disasters and fall injuries etc. (Chowdhury et al., 2008 and Mashreky et al., 2010). The country experienced one of the worst manmade disasters due to a building collapse in 2013, which caused thousands of deaths (Biswas et al., 2013). The country is experienced when facing natural disasters, like floods, which cause unintentional injuries in children including falls, cuts and near drowning (Biswas et al., 2010). In this study, we have illustrated a case study of a child who fell into a manmade abundant well and drowned. We also explore the lessons learnt from this tragic event.

MATERIALS AND METHODS

We have reviewed two Bengali and three English language national newspapers after the disaster occurred.
We also reviewed a national television live talk show and a video clip from Routers after the disaster. The content analysis was done to review the case.

**Details Case report**

**What happened?**

On 25th December 2014, a four years old boy named Zihad was playing with other children at a playground at the railway colony near an abandoned water pump house by his resident area Sahajanpur, Dhaka. It was around 3pm in the afternoon when suddenly he fell into the 15” diameter well, which was kept open. There was another pipe of 3” diameter within the large diameter well. The child fell in between the two pipes. The depth of the well was about 250-300 feet. One of his playmates ran to an adult to inform them about the incident. Immediately knowing of the event, the person called the Fire Service and Civil Defence to report the incident. Three firefighting units rushed to the spot immediately and were at scene within 30 minutes of the incident.

**How the rescue process initiated**

The rescue team initially tried to rescue the child by putting a rope into the well with a sack tied to it, so that the child could hold onto the rope to be rescued. Several abortive attempts were made to pull out the child. After that, a crane was bought into place at around 11pm at night to pull out the inner 3” diameter pipe from the well. A volunteer attempted to climb down the well shaft at midnight but for safety reasons the fire service did not allow him into the well.

At 1am, a special camera was inserted into the well to see whether there was a child still inside. The video camera didn’t show the child, rather lots of debris inside, which made the rescuers confused whether the child fell into the well or not. “We are yet to find the boy. But we are still trying and we will lower in the camera again” - Fire Service Director General Brig Gen Ali Ahmed Khan told reporters at 3am at the site. Later on, another camera from a non-government expert was also inserted into the well but was unable to catch any images of child.

Finally, after losing all hope of rescuing the child and with the added confusion raised by the rescuers, a decision was about to made whether to close down of the operation without rescuing the child. At that time, a group of civil volunteers made efforts to build a tool which had a hook at the end of three steel plates named Cather. Finally the Cather was sent into the well, and the cage at last was able to pull out the dead body of the child 23 hours after the operation began.

**Emergency management system**

The fire service and civil Defence was the key player in the emergency management system. They started to introduce different procedures to rescue the child. However, it was a completely new experience for them, which made the task extremely difficult. The fire brigade was supported by the police and other law enforcement agencies and local people including volunteers.

A medical team was also there to provide immediate care if the child was rescued alive. The government higher officials including a minister, the director general of fire brigade etc. came to the spot to accelerate the rescue process.

**The fate of the case**

Four year old Zihad died after 23 hours of effort to save his life. The post mortem was performed at the Dhaka Medical College Hospital forensic department and the report mentioned that the child died within 1.5 hours of the incident taking place. He had all the symptoms of drowning, and also had a head injury; however, drowning was the main cause of death for the child. The report also stated that the depth of the well was around 250 feet.

**Engagement of different agencies, media, civil community and crowds**

As soon as the fire bridge team arrived on the scene, both electronic and printed media came to the spot and updated the news frequently. Some of the electronic media telecasted live pictures the rescue event. The journalists tried to discover updates and the progress of the rescue from the fire brigade staff, police, other law enforcement agencies, higher official from the government and bystanders. The media were placed as close to the rescue area as they could get to ensure the best images and video footage could be captured.

Thousands of people came to see what was going on and what the progress was. Some of them also showed their interest to get involved in the rescue process. Some of the volunteers were able to provide technical support in the generation of local technology to help rescue the child. Moreover, one of the volunteers who had experience of rescue techniques in disasters wanted to go inside the well. However, due to the huge crowd around the location, it was really difficult for the civil volunteers to get involved.

**Experiences and lesson learnt**

We found mixed experiences in this case. Tremendous efforts were made by the fire brigade staff and the involvement of volunteers was effective to develop a locally made rescue instrument to pull out the child. Electronic and printed media also worked intensively to collect the latest updates to share with the public. The law enforcement agencies like the police worked extensively to manage the situation and keep control. The government tried its best from the very beginning till end of the rescue, including a minister and higher officials responsible with the system visited the site and provided input. However, the study found that there was a certain deficit of effective coordination among the rescuers. There were large crowds at the scene making it difficult for the rescuers to concentrate. The media also tried to go as close as possible to capture the latest exclusive images and videos, and they tried to get interviews from the rescuers and civil people. A newspaper report stated that there was unavailability of modern rescue equipment and technologies which made the fire brigade rescue extremely difficult to manage. A central briefing cell was required; the people were getting information...
from different news agencies which very much confused what was really going on. We have also found that the electronic channels telecasted the event live which made thousands of people traumatize seeing the video on air. Finally, the study also found that the country has thousands of such risks like this, which may cause injuries to children at any time.

**DISCUSSION**

After 23 hours of tremulous effort by the rescuers from fire brigade and civil volunteers, the child was rescued but had sadly died. The conventional process of rescue was unable to rescue the body of the child, so finally a locally invented device “catcher” was used instead to rescue the victim. This type of fall injury is not common in Bangladesh. A case of such mechanism of injury has not been found before. The country has a high rate of injury due to falls in children, but in those cases, mechanism of the fall resulted in different injury types (Chowdhury et al., 2013, Chowdhury et al., 2010). Bangladesh has already experienced a number of man-made disasters, where the injuries occurred in the majority of cases was due to building collapses or fire disasters (Mashreky et al., 2010, Biswas et al., 2013). In 2013, the country experienced its largest manmade disaster due to a garment building collapse, causing thousands of deaths and many more injuries (Biswas et al. 1930). The leading cause of death in under five year old children in Bangladesh is drowning (Rahman et al., 2012 and Callaghan et al., 2010).

However, in this case, the mechanism of injury was a fall and the cause of death was due to drowning. Inside the well there was water, which caused suffocation, followed by death (Daily Observer 2014b). A newspaper report revealed that the main rescuers were the fire fighters and they tried their best, using whatever technologies they had available. Since this disaster was the first of its type, it was a challenge and the team was not well equipped with modern rescue instruments. Furthermore, the spot was not isolated from the local crowds, civil people and other agencies, which made it extremely difficult to concentrate on the rescue. Experience from developed countries shows that if a disaster occurs you must immediately evacuate and restrict the area to isolate the rescue operation, and give scope to work intensively (Alagappan et al., 1998, Adnet and Lapostolle 2004 and Ali et al., 2006). In this case, we have found that people were accessing the area of the event. The civil volunteers who wanted to take part in the rescue process couldn’t reach the place easily due to the huge gathering (Daily Observer 2014a). It was also observed that during the disaster there was a certain deficit of effective coordination among the different agencies and a central command unit with a mix of different experts was not in place. Moreover, a central transmission cell to provide updates to the news outlets and progress reports to the media and other agencies were absent. As a result, both electronic media and printed media worked in their own way and different types of information were reported, which confused people (Daily Star 2014). It was observed in many countries around the world that a central emergency management system is put in place during a disaster and a central media briefing unit opens to announce information about the disaster. Moreover, a telephone hotline opens 24 hours to respond (Tanigawa and Tanaka 2006).

It has also identified that the media telecasted live from the disaster scene, which made many people traumatize to see the tragic event, some of the media also showed the dead body of the child being pulled out from the well - there were no clothes on the body and the child was wearing only a half pant. The scene made many people psychologically ill. Post traumatic disorder was found to be a major cause of depression in different studies (Winston et al., 2011). This study identified that the country requires an effective planning, coordination, preparation and central emergency management system to prevent such a disaster occurring. Furthermore, the devastating event also found that the country has many risks of fall injuries in the urban setting, as well as rural areas. A different study shows that drowning’s occurred in children within 20 meters from the household (Rahman et al., 2008, Rahman et al., 2012, Rahman et al., 2006). One more study in France described a near drowning after a fall from bridge into the river which made cardiac arrest (Heming et al., 2012). Another study mentioned a case study of a child who survived after fall injury from 10th storied building and rescued alive (Yang et al., 2013). While in our study, although a fall injury occurred, the child died due to drowning in the 250 feet depth well. It also observed that the injury event occurred around 3pm.

Different studies revealed that drowning and injuries occurred in children mostly in the day time when the mother or guardian is busy with household activities between morning until 3pm (Rahman et al., 2008, Rahman et al., 2012). As identified in different studies, a male child is more prone to injuries, including drowning (Alonge and Hyde 2014, Rahman et al. 2008), in our study this is also shown with Zihad, a four year old boy.

**Conclusion**

The study explored an unusual case of a fall related injury of a child who died due to drowning. The fire bridge put in an extreme effort to rescue the child following a 23 hour operation. The study found that children in Bangladesh have a high risk of injuries due to hazards all around them. The experience and lessons learnt from the tragic event is an indication for the development of effective planning process, including the establishment of a national emergency management and coordination system in low income settings like Bangladesh. The policy makers, researchers, development partners and different stakeholders can use the findings to raise awareness among people about injury risks and hazards, child safety and the development of safe communities.

**Conflict of Interest**

The authors have no competing interests to declare.

**REFERENCES**


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