

Chapter 4

CHILDREN'S HEALTH AND NURSING IMPLEMENTATIONS IN CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR (CBRN) INCIDENTS: A SYSTEMATIC REVIEW OF THE LITERATURE

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INTRODUCTION

An incident in which chemical, biological, radiological or nuclear (CBRN) agents (including toxic industrial chemicals [TICs], toxic industrial biologicals [TIBs], and toxic industrial radiologicals [TIRs]) are accidentally released (an event caused by human error or natural or technological reasons, such as spills, accidental releases or leakages)², or in which hazards resulting from the employment of Weapons of Mass Destruction (WMD) that are intentionally³ designed to cause harm through the dissemination of CBRN agents are used, is unescapable in the modern World (Curie & Heslop, 2018)

Definition of CBRN Incidents

Chemical incidents are encountered daily both at home and in industry. Chemical incidents include any toxic chemical manufactured, used, transported, or stored which can cause death or other harm through exposure. This includes chemical weapon agents and chemicals developed or manufactured for use in industrial operations or research that pose a hazard, collectively characterized as TIC.

Biological incidents include any organism, or substance derived from an organism, that poses a threat to the health of any living organism. This can include medical waste, samples of a microorganism, virus, or toxin (from a biological source) that can impact human health and spread infectious disease. This is important as the risks and medical management differ for each type of hazard. Bio-

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² These accidental incidents are usually referred to as Hazardous Materials (HAZMAT) accidents. Outbreaks of infectious diseases, such as SARS, or pandemic influenza are examples of naturally occurring biological incidents.

³ Includes criminal acts such as the deliberate dumping or release of hazardous materials to avoid regulatory requirements, terrorist acts that involve serious violence to persons or property for a political, religious or ideological purpose and/or that are a matter of national interest.

adults simply because they have more years left to live. Yet there are few articles about children's health and nursing implementations in CBRN incidents.

Nurses play an important role in caring for patients after catastrophic incidents. As children have different exposures to such incidents pediatric nurses must be experienced about the special necessities of children in the time of a CBRN event. In the literature, nurses expressed themselves in low self esteem and anxious in terms of readiness and giving proper response to CBRN incidents (Mitchell, Kernohan & Higginson, 2012), (Hammad, Arbon & Gebbie, 2012). In another study, Pesiridis et al. discussed nurses' baseline knowledge concerning disaster education was low with major gaps were identified in several domains, thus regarded their incident response training insufficient (Pesiridis & et al., 2015).

CONCLUSION

It has been determined that there are very few studies on children's health in CBRN incidents and the available studies only examine the qualifications and readiness of nurses working in emergency departments.

It has been emphasized that nurses have concerns about their readiness to respond to a CBRN incident and also have low self esteem to implement the necessary actions.

It is important and beneficial to raise awareness for nurses to respond CBRN incidents. It is also considered that as children are more prone to the CBRN hazards and less defensive to such threats, more detailed studies and focus on children's health and pediatric nursing implementations under CBRN incidents are needed.

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