

## **Abstract**

### **Introduction**

Medical Research Institute Colombo, which was founded in 1900's and initially named as "The Soysa Bacteriological Institute" which plays a unique vital role as a major service provider for island wide with special and specific diagnostic laboratory facilities. At present Medical Research Institute (MRI) consists of seven departments with 21 sections, so there is a high risk of an unexpected Chemical, Biological, Radio-Nuclear (CBRN) emergencies leading to a disaster due to this reason. The aim of this study was to assess knowledge and practices of laboratory workers in MRI on CBRN emergency situations.

### **Methodology**

A descriptive cross-sectional study was conducted in MRI Colombo including laboratory workers who have work experience at least one year. There were 268 laboratory workers excluding administrative officers and clerical staff. Self-administered questionnaire was used for data collection and chi square test was performed to compare variables. The questionnaire consisted of questions under two main sub topics namely, knowledge and practices of laboratory workers in MRI on CBRN emergency situations. Ethical clearance was obtained from ethics review committee of National Hospital Sri Lanka. Overall knowledge and practices score were calculated and categorized into "Good" and "Poor" using the 50<sup>th</sup> percentile as the cut off value.

## **Results**

Number of participants were 253 (response rate 94.40%) and the sample consisted of more females (71.5%) than males (28.5%). Among the responders, majority (31.5%) were within the age group of 31-40. Only 44.66% of laboratory workers had experience on CBRN emergency situation while they are on work. In assessment of the knowledge around 49% of laboratory workers had poor overall knowledge on CBRN emergency situations and in assessment of overall practices nearly 40% of laboratory workers had poor practices on CBRN emergency situations. First person to be inform in a CBRN emergencies, “Biosafety manual for medical laboratories” and guidelines for surveillance of laboratory workers are the areas to be considered in poor knowledge. While considered in poor practices, emergency fire drill practices and CBRN emergency drill practices are the weakest areas.

Several socio demographic and work related factors such as females, graduates, consultants and laboratory safety training were associated with knowledge and practices. A statistically significant was observed between good knowledge and good practices.

## **Conclusion and Recommendation**

The knowledge and practices of laboratory workers on CBRN emergency situations in MRI Colombo was satisfactory, while attention should be focused more on practices because MRI is the leading laboratory in Sri Lanka. Awareness programs aiming to improve the knowledge will be beneficial and compulsory laboratory training before they start their work in lab recommended to ensure safe laboratory environment as the practices were poor among 39.9% of laboratory workers. Conduct stimulation exercise, fire drills and CBRN emergency drills, workshops annually will beneficial to reduce pitfalls and update their knowledge on CBRN emergencies.