Developing a risk governance framework on radiological emergency, preparedness, and response for emergency responders: protocol for a mixed methods study

ABSTRACT

Background: Risk governance involves processes and mechanisms to understand how risk decisions are taken and executed. This concept has gained a reputation over time as being essential for emerging comprehensive management that defines the success of an organization. While guiding documents that explain the use of risk management related to nuclear safety and security are available worldwide, few locally conducted studies have explained risk governance practices in areas where hazard usage is known, such as in radiological emergencies. Objective: This paper describes a protocol that was used to determine several factors that influence emergency responders' perceptions toward radiological risk practices and visualize the risk radiological framework for emergency preparedness and response. Methods: A mixed methods study with a convergent design was performed. A qualitative analysis was performed using a case study approach where 6 key informants were purposely sampled for in-depth interview, and a cross-sectional study involving a self-administered questionnaire was conducted among approximately 260 emergency respondents from national regulatory, research, and services organizations. NVivo (version 12, QSR International) was used to analyze the interview transcripts and emerging themes were identified through abductive coding. Simultaneously, multiple logistic regression analysis was used to determine significant predictors that form the equation model. Results: The study is still underway. Qualitative findings were based on transcript-coding that informed the relevant thematic analysis, while statistical analyses including multiple logistic regression analysis measured the adjusted odds ratio of significant variables for the equation model. The study is expected to conclude in late 2021. Conclusions: Important emerging themes and significant factors that are related to the emergency responders' perceptions regarding radiological governance practices were determined through the convergent design. This potentially facilitated the development of a plausible radiological risk governance framework. Furthermore, our results will provide key insights that can be used in future studies.

Keyword: Emergency; Preparedness; Radiological; Risk governance; Risk practices