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Preparing for Nuclear Disaster: A Structured Equation Model by Health Professionals

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Abstract

The potential for a radiological disaster from natural environmental causes, human error, aging nuclear power plants, buried radioactive waste, regular ground transport of radioactive materials, a shared international border, and the threat of radiological terrorism make the Western New York region vulnerable for a radiation emergency. A global threat from Russia and intentional uses of nuclear weapons by non-state approved users, such as North Korea, raise public awareness. Limited importance has been given to educating medical providers and emergency planners with radiological knowledge and preparation.

Objective: The goal of this study was to understand the relationships of the peerception of risk, emergency self-efficacy and willingness to respond to a radiation emergency among health professionals.

Method: Two hundred sixty-nine (269) medical and health practitioners were selected for a purposive, convenience sample in an eight-county region of Western New York. Participants identified the need for improved knowledge and preparation for the management of a radiation emergency.

Results: Statistical findings using the author created Structural Equation Model (SEM) revealed a goodness of fit for perception of risk as a strong predictor of willingness to respond to a radiation emergency.

Conclusion: The SEM study names the variables that influence training for global nuclear realities.

Supplementary material. The supplementary material for this article can be found at http://doi.org/10.1017/dmp.2024.207.

Abstract

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