Assessing the Knowledge of Nursing Students to Support the Need of Integrating Radiological/Disaster Content into Nursing Curricula

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ARE NURSES PREPARED FOR A RADIOLOGICAL DISASTER?

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Disclosure

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Goal

The goal of this project was to provide further evidence of the need for integrating radiological emergency and disaster preparedness content into nursing education curricula by assessing current knowledge, providing education on radiologic events, and reassessing knowledge after an educational intervention.

Objectives

- Demonstrate the level of current knowledge regarding radiological emergency preparedness among licensed & pre-licensed nursing students
- Identify the absence of radiological emergency knowledge that can be addressed with an educational intervention
- Assess the knowledge regarding radiological preparedness after an educational intervention
- Demonstrate the need to include radiological emergency and disaster content in nursing education curricula

Introduction

- Natural disasters are on the rise.
- Terrorism events have increased since 9-11.
- Public healthcare needs require nurses to be prepared to respond to such events (Miller, 2011; Smith, 2007; Williams & Williams, 2010; Worrall, 2012).
- This project focuses only on radiological disaster preparedness

Background

A Radiological Event…

- Has a high probability of occurring globally (Williams & Williams, 2010).
- Radioactive exposure/contamination is an unfamiliar dimension for nurses
- Has greater long-term consequences yet medical management of radiation exposure is less known among nurses (Powers & Daily, 2010)

Research Questions

This project addresses the following questions:

- What current knowledge regarding radiological emergencies do nursing students possess?
- Does an educational intervention increase radiological emergency preparedness knowledge?
- Do study results reflect a need to integrate radiological emergency and disaster preparedness content into nursing education?

Methods

- **Design:** Descriptive quantitative design using a survey assessed the knowledge and awareness of preparedness to respond to a radiological emergency among licensed and pre-license nursing students
- **Setting:** The setting was the Department of Nursing at a regional comprehensive university in the southeastern United States.
- **Sample:** Participants included a convenience sample of 60 nursing students.

Instrument*

- The Emergency Preparedness Information Questionnaire (EPIQ) survey, revised for radiological emergencies (R-EPIQ), was used to assess disaster preparedness of nurses (Wisniewski, Dennik-Champion, & Peltier, 2004).

- R-EPIQ uses a Likert scale to determine emergency preparedness in 8 dimensions, overall familiarity, training/ learning preferences, and also includes professional & demographic data

* Permission for EPIQ use and modification granted by the Wisconsin Nurses Association

Instrument (continued)

- The EPIQ was evaluated and validated in four previous studies since its development (Garbutt, Peltier, Fitzpatrick, 2008; McKibbin, Sekula, Colbert, & Peltier; Miller, 2011; Worrall, 2012).

Procedure

Pre-licensure nursing students (n=43) and RN to BSN licensed nursing students (n=17) were surveyed using the R-EPIQ instrument via SurveyMonkey to maintain anonymity. Pre-licensure students were surveyed both pre and post educational intervention. RN to BSN licensed nurses were surveyed just once for baseline information. No intervention was provided due to time constraints and online delivery.

Educational Intervention

- Radiation basics & exposure versus contamination
- External versus internal contamination
- Acute radiation syndrome and associated sub-syndromes
- Safety issues, triage, & psychological considerations.
- This content was presented during a community/public health course.

Findings

Overall Familiarity with Radiological Event Preparedness						
		Very Familiar	Somewhat Familiar	Familiar	Somewhat NOT Familiar	Not Familiar
Pre-Licensure Students (n=43)	Pre-intervention	4.65% 2	9.3% 4	2.33% 1	11.63% 5	72.09% 31
	Post-intervention	16.28% 7	44.19% 19	27.91% 12	11.63% 5	0% 0
RN-BSN Students (n=17)	Survey of RN knowledge: no intervention provided	0% 0	6.25% 1	12.5% 2	37.5% 6	43.75% 7

Learning Preferences: Both Groups

Top three preferred format for instruction

- Face to Face traditional classroom lecture (81%)
- Online web-based instruction (14%)
- CD/DVD for personal computers (5%)

Results-Licensed RN-BSN Students

Overall preparedness for a radiological emergency in relationship to specialty

- Nurses from three select specialties (18.75%) reported they were familiar/somewhat familiar in overall preparedness: nurse practitioner, cardiac nurse, and a neonatal nurse.

- Nurses from all other specialties (81.25%) reported being not familiar/somewhat not familiar in overall preparedness

Results: Pre-licensure BSN Students

- Pre-licensure students were most familiar in areas of (1) psychological issues/special populations, (2) epidemiology/surveillance, (3) isolation/quarantine/ decontamination, and (4) detection/response.

- Pre-licensure students scored lowest in triage, understandably since they have not had any experience as a practicing nurse where triage concepts are learned.

Discussion

- Self-perceived familiarity of preparedness for a radiological emergency event among licensed and pre-licensed BSN students is **low.**
- A gap in knowledge of radiological/ emergency preparedness exists in nursing education and there is a need to integrate this content into nursing curricula
- Higher scores post-intervention indicate a short-term raised awareness and knowledge of radiological disaster preparedness

Limitations

- Self-reported surveys by nature have bias: response recall, questions can be misinterpreted, and respondent's perceived knowledge may not be what they actually know
- R-EPIQ was not subjected to factor loading analysis to determine validity and reliability

Conclusion

- Nursing students are healthcare organizations future workforce. Their ability to respond effectively during a radiological, chemical or biological disaster depends on their knowledge of preparedness.
- By integrating radiological disaster content into curricula, graduating nurses will have the knowledge required to improve the outcomes of radiation victims and reduce long-term complications

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