

Disasters Will Happen: Be Prepared

OBJECTIVE: The purpose of this pilot study was to determine whether nurse managers felt competent in leading a disaster response as part of an incident command center team.

BACKGROUND: Participation in disaster drills, having access to institutional written plans about disasters, and participation in internal/external disasters and drills are part of the role nurse managers fill across the country. Little is known about whether nurse managers feel competent enough to lead a disaster response.

METHODS: Survey data for 38 nurse managers from different institutions across the country were collected via SurveyMonkey. Four questions were used to obtain data. Ratings were obtained using a 4-point scale: 1 = *Not at all competent* to 4 = *Very competent*. Frequency counts for the nurses' level of self-competence were obtained and analyzed with the use of three competencies using Spearman correlations.

RESULTS: The data analysis revealed that no matter how competent the participants felt in participating in disaster drills, actual disasters, utilizing the disaster written plan at work, and how much knowledge they had about disasters, their perceived confidence levels do not reflect their ability to lead a disaster response as part of an incident command center team with confidence.

CONCLUSION: Nurse managers do not feel they are competent to be in a leading role a disaster response.

Abstract

Preparing for a disaster is a vital part of the nursing administrator's role. The purpose of this pilot study was to determine whether nurse managers felt competent in leading disaster responses based on three disaster nurse management competencies identified by Gebbie and Qureshi in 2002.(1) An additional question identified perceived confidence in the ability to lead a disaster response as part of an incident command center team. A total of 38 nurse administrators responded and the results indicated gender differences in perceived competencies for these skills and roles.

Introduction

It is an unfortunate fact that disasters will occur. The key to being prepared for these situations is to respond appropriately and, should the organization be part of the disaster, survive both in terms of human life and as an organization. The type of disaster is less important than being prepared for a disaster, as noted by a participant in this study, "The Boston Marathon explosions made me really think about how our hospital would handle victims

from such a disaster”. This article discusses the results of a pilot study that examined the level of confidence middle-management nurse administrators had in three identified disaster nurse competencies and their ability to run an actual disaster response as part of an incident command center.

Background

The first step in understanding disaster response is to understand what a disaster is. According to the World Health Organization, a disaster is any interruption in how a geographic area functions.(2) A disaster causes losses that encompass the environment, resources, and population and exceeds that area's ability to deal with the situation using its own resources. The area is overwhelmed and must rely on help from outside resources. Should the local healthcare organizations be involved in the disaster, nurse managers may be called on to work in their organization's incident command center (ICC) or liaise with the larger ICC running disaster response in the area.

There may be unwarranted assumptions that nursing leadership has ensured that nurses at all levels have been provided resources and opportunities to practice skills to be able to respond safely, skillfully, and confidently during disaster situations. Baack and Alfred identified nurses in rural Texas as perceiving their competence and confidence in managing disaster situations to be low to average, unless there was previous experience in participating in actual disaster situations or shelters. This study, performed on nurses from multiple accredited facilities, suggested that current methods of meeting standards for emergency management activities, including drills, does not meet the needs for nurses to feel confident and effective should a disaster occur.(3) Similar themes of low-level confidence in ability to provide care during disasters were found in a review of the literature from 2005-2008 by Chapman and Arbon.(4) Common themes of concern within the literature review were motivation to respond tempered with concerns regarding clinical competence, working outside of common scope of practice, and concerns regarding the disaster environment itself. Additionally, there were inconsistencies with disaster response professional development in terms of both the content provided and the frequency of training.

An article by Hyer, Brown, Polivka-West, and Berman discussed how to better prepare for future disasters based on the effects Hurricane Katrina and other natural disasters.(5) Some articles found that nurses are not fully prepared in the ability to care for people in disasters. For instance, Turale, and Goodhue, Burke, Chambers, Ferrer, and

Upperman found that nurses around the world were skillfully unprepared to care for the amount of human suffering seen in disasters.(6-7) Another study revealed that hospital nurses' reasons for not wanting to work during the 2009 H1N1 influenza pandemic was feeling unprepared to handle a disaster response.(8) The lack of research in this area suggested that competence may not be considered when preparing for and responding to a disaster. More research was clearly needed to identify how nurse managers feel about their ability to successfully respond to disasters that occur within their healthcare organizations, which led to this study.

Disaster Competencies

Competencies needed by disaster healthcare responders have been established by several agencies, including FEMA, the World Health Organization, and the International Council of Nurses. In 2002, the CDC had two nurses develop core competencies needed for disaster response.(1) These nurses developed a list of 12 core competencies that included three competencies specific for nurse administrators.

1. Ensure That There Is a Written Plan for Major Categories of Emergencies (1): This addresses the need for a written plan for emergency preparedness, from the unit to the organizational level. The roles of staff nurses need to be clearly delineated, nurses need to be members of the organization's emergency/disaster response and preparedness plan, and all parts of the plan need to be practiced at each level.
2. Ensure That All Parts of the Emergency Plan Are Practiced Regularly (1): In order to be prepared to respond, an organization must practice their emergency/disaster plans regularly. These may be either actual scenarios that are carried out as if real or tabletop drills that are in the form of verbal or written responses. Most states have specific requirements for healthcare agencies related to what should be in their emergency/disaster plans and how often these should be followed. The Joint Commission also has standards for healthcare organizations that require a yearly emergency/disaster drill for hospitals, with some healthcare organizations required to do drills more often.(4-9)
3. Ensure That Identified Gaps in Knowledge or Skills Are Filled (1): This competency addresses post-disaster/drill debriefing. This debriefing allows a healthcare organization a chance to find any deficiencies in their response/drills and modify their emergency/disaster plan to fix the deficiencies.

Many different disaster response agencies have established competencies for disaster responders. These competencies cover more than nursing departments, but do offer knowledge that is needed for any disaster responder. The nurse administrator should become familiar with and consider incorporating some of these competencies in training the nursing staff. Some important sites to check include the International Council of Nurses "ICN Framework of Disaster Nursing Competencies"

(http://www.icn.ch/images/stories/documents/networks/DisasterPreparednessNetwork/Disaster_Nursing_Competencies_lite.pdf), a variety of competencies from FEMA's "Emergency Management Competencies and Curricula" website (<http://www.training.fema.gov/emiweb/edu/EMCompetencies.asp>), and the U.S. Department of Health and Human Service's website (<http://sis.nlm.nih.gov/dimrc/professionalcompetencies.html>), where a list of disaster-related healthcare provider competencies can be found.

Methods

Design

The study design was an exploratory descriptive quantitative study to examine self-reported perceptions of ability to perform core disaster nursing administration competencies as identified by Gebbie and Qureshi (1). The target group was nurses in middle management levels of leadership including nurse managers and director level administrators. The survey was approved by an academic institutional review board. The research survey and a link to the survey was posted on the website of two major nursing administration journals between February and August 2014, announced through online media during the American Association of Critical Care Nurses National Teaching Institute May 2014, posted to nursing faculty at two major online universities, and shared through peer connections. The potential audience reached was 5,000.

Instrument

The instrument used was designed by the researchers. It consisted of seven demographic questions, the three nursing administration disaster competencies identified by Gebbie and Qureshi, and one question asking about participant's perception of competency to work in an incident command center during a disaster. Data were analyzed using SPSS software (Chicago, Illinois). The four survey items pertaining to perceived competence were

aggregated into a scale. The resulting Cronbach alpha reliability coefficient was $\alpha = .88$ suggesting an acceptable level of internal consistency reliability. Content and face validity were established through feedback from experts in the field of disaster nursing.

Procedure

Permission for the study was obtained through the IRB of a university of one of the authors. Study participants were recruited through a variety of formats. The editor of a major nursing administration journal was contacted about publishing information on the study. She offered to place a link to the survey on the journal's homepage website in their "In the News" section. Peer networking at multiple hospitals and universities with nursing administration faculty also occurred. During the 2013 National Teaching Institute of the American Association of Nurses, business cards containing the link were handed out and the link was included in the institute's electronic forum. Participation was limited and the survey deadline was extended an additional six months as continued networking occurred through meetings, emails with the study link sent to contacts at universities and healthcare institutions, and another major nursing journal agreed to post an announcement about the survey on their homepage. The link was closed after eight months.

Results

The purpose of this pilot study was to determine whether nurse managers feel competent in leading disaster responses. Surveys from 38 respondents were analyzed. While the number of participants was small, the results do indicate some trends that may be considered important when nurse administrators are planning disaster response in their organizations.

Demographics

The two most common administration positions were nursing supervisor (42.1%) and unit manager (34.2%). The years in present position ranged from 1 to 20 ($M = 5.46$, $SD = 4.86$). The number of beds reported in the institutions range from 39 to 2,000 ($M = 441.96$, $SD = 382.93$) with the most common institutions being non-teaching hospitals (52.6%) and academic settings (21.1%), which accounted for some reporting no beds. The nurses lived in one of 16 states with most being from California (39.5%). The ages of the nurses ranged from 40 and younger (5.3%) to 61-

69 (5.3%) with a median age of 45.50. Most respondents (81.6%) were female. Table 1 presents the frequency counts for the demographic data.

Table 1

Frequency Counts for Selected Variables (N = 38)

Variable	Category	n	%
Position			
	Chief Nursing Officer/Vice President of Nursing	8	21.1
	Nursing supervisor	16	42.1
	Unit manager	13	34.2
	Other	1	2.6
Years in Position ^a			
	1–2	9	23.7
	3–4	11	28.9
	5–7	10	26.3
	8–20	8	21.1
Size of Institution beds (n = 27) ^b			
	39–249	7	25.9
	250–350	7	25.9
	360–500	7	25.9
	600–2,000	6	22.2
Type of Institution			
	Teaching hospital	6	15.8
	Non-teaching hospital	20	52.6
	Academic	8	21.1
	Other	4	10.5
State/Location			
	California	15	39.5
	New York	4	10.5
	Texas	4	10.5
	Other	15	39.5
Age Range ^a			
	40 and younger	2	5.3
	41–50	18	47.4
	51–60	16	42.1
	61–69	2	5.3
Gender			

Male	7	18.4
Female	31	81.6

^a Years: $M = 5.46$, $SD = 4.86$.

^b Size: $M = 441.96$, $SD = 382.93$.

Note. Percentages may not add to 100% due to rounding.

Competency Results

Table 2 displays the frequency counts for the nurse's level of self-perceived competence. These ratings were lay on a 4-point Likert scale ranging from 1 = *Not at all competent* to 4 = *Very competent*. The areas where the highest percentage of nurses considered themselves "competent" or "very competent" were "ensure that there is a written plan for major categories of emergencies (63.1%)" and "ensure that all parts of the emergency plan are practiced regularly (58.9%)". The areas where the highest percentage of nurses considered themselves "not at all competent" or "somewhat competent" were "ensure that identified gaps in knowledge and skills are filled (52.6%)" and "run a disaster response as part of incidence command staff (55.3%)".

Table 2

Frequency Counts for Level of Self-Perceived Competency (N = 38)

Variable	Category	<i>n</i>	%
Ensure that there is a written plan for major categories of emergencies	Not at all competent	2	5.3
	Somewhat competent	12	31.6
	Competent	14	36.8
	Very competent	10	26.3

Ensure that all parts of the emergency plan are practiced regularly	Not at all competent	3	7.9
	Somewhat competent	13	34.2
	Competent	17	44.7
	Very competent	5	13.2
Ensure that identified gaps in knowledge or skills are filled	Not at all competent	9	23.7
	Somewhat competent	11	28.9
	Competent	11	28.9
	Very competent	7	18.4
Run a disaster response as part of Incidence Command staff	Not at all competent	9	23.7
	Somewhat competent	12	31.6
	Competent	12	31.6
	Very competent	5	13.2

Note. Percentages may not add to 100% due to rounding.

Table 3 displays the frequency counts from highest to lowest for participation in any type of disaster or drill. The most common type of participation was “in disaster drills of any form (84.2%)”. Nurses were significantly unlikely to volunteer for disaster nursing (26.3%)”. Table 3 also displays the mean competency ratings for the nurses. These ratings were given using a 4-point Likert scale of 1 = *Not at all competent* to 4 = *Very competent*. The highest rating was “ensure that there is a written plan for major categories of emergencies ($M = 2.84$)” while the lowest rating was for “run a disaster response as part of Incidence Command Staff ($M = 2.34$)”.

Table 3

Frequency Counts for Types of Participation Sorted by Highest Frequency and Ratings of Competency Items Sorted by Highest Mean and Spearman Correlations (N = 38)

Participation Frequency Counts Sorted by Highest Frequency	<i>n</i>	%
4. Participated in disaster drills of any form	32	84.2
2. Responded to institutional/internal disaster	24	63.2
3. Responded to external disaster	13	34.2
1. Volunteer disaster nursing	10	26.3
Item	<i>M</i>	<i>SD</i>
1. Ensure that there is a written plan for major categories of emergencies	2.84	0.89
2. Ensure that all parts of the emergency plan are practiced regularly	2.63	0.82
3. Ensure that identified gaps in knowledge or skills are filled	2.42	1.06
4. Run a disaster response as part of Incidence Command staff	2.34	0.99

Note. Multiple responses were available so frequencies and percentages total more than 100%. Ratings based on a 4-point metric: 1 = *Not at all competent* to 4 = *Very competent*.

Table 4 displays Spearman correlations for participation and competency variables with selected demographic variables (i.e., experience, institutional bed size, age, and gender). Spearman correlations were used due to the small sample size ($n = 38$). Also given the size of the sample and the exploratory nature of this study, findings that were significant at the $p < .10$ level were noted to suggest possible avenues for future research. Six of the 32 correlations were significant at the $p < .10$ level. The most significant results were that nurses at larger institutions were less likely to have volunteered for disaster nursing ($r_s = -.34, p < .10$) but were more likely to have responded to an institutional/internal disaster ($r_s = .53, p < .005$) and that male nurses were more likely to have responded to an

institutional/internal disasters ($r_s = -.36, p < .05$). In addition, male nurses gave themselves significantly higher ratings for three of the four competency areas.

Table 4

Spearman Correlations for Participation and Competency Variables with Selected Demographic Variables (N = 38)

Variable	Experience	Institutional Size	Age	Gender ^a
Participation ^b				
1. Volunteer disaster nursing	-.26	-.34 *	-.03	.13
2. Responded to institutional/internal disaster	.05	.52 *****	.11	-.36 **
3. Responded to external disaster	-.03	.06	.08	-.23
4. Participated in disaster drills of any form	.19	-.13	-.02	-.21
Level of Competence ^c				
1. Ensure that there is a written plan for major categories of emergencies	-.19	-.13	.16	-.32 **
2. Ensure that all parts of the emergency plan are practiced regularly	-.25	-.19	-.03	-.30 *
3. Ensure that identified gaps in knowledge or skills are filled	-.10	-.03	.08	-.32 *
4. Run a disaster response as part of Incidence Command staff	.14	.01	.12	-.18

* $p < .10$. ** $p < .05$. *** $p < .01$. ***** $p < .005$.

^a Gender: 1 = Male 2 = Female. ^b Coding: 0 = No 1 = Yes. ^c Rating scale: 1 = Not at all competent to 4 = Very competent.

Discussion

This study examined the perceived competence levels of nurse managers in response to leading disaster responses based on four disaster nurse management competencies. The majority of participants in the study were female 81.6% (n = 31). Although a weaker correlation was found between gender and ability to respond to a disaster, the

correlation between age and feelings of competence was significant between men and women. Overall, male nurses gave themselves significantly higher ratings for three of the four competency areas. (See Table 4 for correlations.)

All participants worked in a managerial level with positions varying from chief nursing officer/vice president of nursing (21.1%, n = 8) to nursing supervisors/nurse manager (76.3%, n = 29) and one unidentified position. It is interesting to note that eight identified themselves as academics and four as "Other". It is unclear why this discrepancy exists, but many academic nursing faculty are adjuncts and work in practice. The one participant who identified as "Other", may have been in a chair or dean position. The study found that there was no correlation between the administrative position held and participation in disasters/drills. Years in the position showed no correlation to participation and perceived competency. Three participants indicated that their place of employment was "other" and eight did not address the question in regards to the number of beds.

Location seemed to play little role in feelings of competence. It was interesting to note that the majority of male participants (three out of seven) worked in California, two in New York, one in Pennsylvania, and one in Kenya, Africa. Most female participants worked in California (11) and four worked in Texas. This is of import, because, in a 2015 report by FEMA, the states of Texas and California experienced the most disasters in the United States, experiencing 336 disasters and 236 respectively.(13) With this level of personal experience, of the 15 respondents who reside in California, more than half did not feel confident to run a disaster response (20% not at all competent and 25% somewhat confident). Of the four participants from Texas, two felt somewhat confident and two felt confident to run a disaster.

The majority of responses overall indicated that more education was needed for disaster preparedness (10 felt not competent; 10 somewhat competent, 2 somewhat competent). Age did not appear to correlate to disaster/disaster drill participation or feelings of competence. While the majority of respondents felt competent to very competent with the written plan and disaster drills in their facilities, they felt not at all competent to somewhat competent with identifying gaps in knowledge or skills for the written plan and disaster drills, and their ability to run a disaster response as part of the ICC staff.

Conclusion

Being prepared for a disaster is a major part of the nurse administrator's role. Understanding the different types of disasters in a healthcare organization's geographic area, planning for all possible contingencies, and practicing those plans will help ensure the safety of patients, families, staff, and the organization. The key findings from this study indicated that demographics and gender played a role in perceived competency levels, as well as in exposure, evaluation, and revisions to emergency written plans and regularly practiced emergency drills. While this was a small pilot study, the results do indicate a need for further research to help identify how competent nurse administrators feel in running a disaster response and how to improve on the skills needed to do so.

References

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