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Are Student Nurses Ready for Disasters? An Analysis of Emergency Preparedness Content in Nursing School Textbooks Used in the Miami Valley

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Running Head: ARE STUDENT NURSES READY FOR DISASTERS?

Are Student Nurses Ready for Disasters?

An Analysis of Emergency Preparedness Content in Nursing School

Textbooks Used in the Miami Valley

Kimberly Caudill

Wright State University

November 1, 2011

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Table of Contents

Abstract.....	3
Introduction	4
Purpose of Study	5
Review of Literature	5
Methods	10
Textbook Inclusion.....	11
Textbook Evaluation.....	12
Results	14
Discussion	22
Conclusion.....	25
References	26
Appendices	30
Appendix A: Textbook Assessment Tool	30
Appendix B: Textbook Coding Tally Sheet	31
Appendix C: List of Public Health Competencies Met	32

Abstract

Results of an analysis of nursing textbooks used in the Miami Valley, indicate that there is minimal emergency preparedness content included. The research was based on the textbooks used in the Introduction to Nursing, Psychiatric Nursing, and Community Health Nursing classes at four local nursing schools: Sinclair Community College, Kettering College of Medical Arts, Cedarville University, and Wright State University. The Community Health Nursing classes have the most prepared content, and include extra content in the form of tables and pictures. The analysis indicates that Wright State University does the best job at preparing student nurses to be ready to respond to disasters, in terms of emergency preparedness textbook content.

Keywords: disaster, emergency preparedness, nursing competencies, nursing education, student nurses, terrorism.

Introduction

Over the last twenty years, natural disaster events have quadrupled around the globe, with flooding and storms being the most common. Terrorist activities have been increasing in every part of the world, and threats of chemical, biological, radiological, nuclear, and explosive (CBRNE) attacks are more probable to occur with each passing day. Approximately 250 million persons a year are affected by one type of disaster or another (Disaster Preparedness and Community Health Committee, 2008). Somewhere in the world, an average of one disaster a week strikes, increasing the need for nurses, more than any other type of responder (Fung, Lai, & Loke, 2009). Unfortunately, the many recent natural and man-made disasters have shown that we are inadequately prepared to manage them. We do not need to ask if a disaster will happen again, but when and where, and if we will be prepared (Stokowski, 2010).

Nurses have played an important role on the front lines of disasters since the beginning of nursing with Florence Nightingale. Since that time, the scope of disaster nursing has expanded and the significance has been more defined (Jakeway, LaRosa, Cary, & Schoenfisch, 2008). There are 2.9 million nurses in the nation, and they care for disaster victims on the front lines during every phase of every disaster (Stokowski, 2010). Responding to health threats from disasters of any type challenges nurses, proving the point that they should possess at least the basic competencies of disaster response (Kuntz, Frable, Qureshi, & Strong, 2008).

Taking an active role in disaster management comes natural to nurses, as they are trusted by community members, are viewed as caregivers, and spend much of their working hours with patients in many different settings. Nurses have expertise in clinical

care, leading teams, managing limited resources, and have good communication skills. No two disasters are the same, and nurses are trained in creative problem-solving skills (Smith, 2007). Nurses are the most flexible of all the healthcare staff, and understand they need to be prepared to report to work during a disaster. They are the key for meeting the healthcare needs during any surge event (Gebbie & Quershi, 2006).

Purpose of Study

The purpose of this research study was to examine the amount and quality of emergency preparedness content in the nursing school textbooks used in nursing programs at four local schools. The twelve Public Health Competencies for Emergency Preparedness were the key components evaluated.

Review of Literature

There have been several articles about the importance of nurses being prepared to deal with disasters, but very few on the importance of teaching emergency preparedness content in nursing schools. No articles were found evaluating the emergency preparedness content in nursing textbooks.

The National League for Nursing Education first published the standard curriculum for nursing schools in 1917. The content was organized mainly around medical, surgical, obstetrical, and pediatric nursing. Content was also included on non-nursing activities like cooking, housekeeping and massage. Other information provided was on ethics, psychology, professional issues, nursing history, and even included some content on public health and administration. The underlying theme of the textbook content at that time was that nursing is a profession (Stokowski, 2011). Most disaster education curricula content in today's leading textbooks is in a public health emergency chapter in the

community/public health nursing class, offered only to nurses in a Bachelor of Science in Nursing (BSN) program.

All members of a community share disaster preparedness responsibility, not just first responders, and no agency is able to respond alone (Kuntz et al., 2008). To be prepared, the United States has invested \$7 Billion in state and local public health infrastructure since 9/11, to aid in the ability of this country to respond to public health emergencies, yet no money has been provided to develop standard emergency preparedness content for all schools of nursing to follow (Savoia, Rodday, & Stoto, 2009). Nurses comprise the largest group of the healthcare workforce, and student nurses are an additional group of people that would increase the capacity of that workforce during a time of emergency. The content they receive in their beginning nursing education should include at least the basic disaster content (Cusack, Arbon, & Ranse, 2010).

Nurses are normally willing to respond to disasters, but there are a lot of factors that need to be taken into consideration to determine if they will actually be able to contribute to the response effort, or just get in the way. The key to their success is if they feel competent to assist. Health care providers must be knowledgeable, skilled, and able to respond to a variety of threats, to be competent in disaster management (Ireland, Ea, Kontzamanis, & Michel, 2006). If basic disaster preparedness content was included in the Introduction to Nursing class at every nursing school in the nation, then first year students as well as graduates, would have at least a basic overview of the key concepts of emergency preparedness, prior to entering the workforce, and definitely before being needed for a disaster (Smith, 2007).

Nurses are in a position to be first responders to emergencies, and as such, they could be the first contact that a disaster victim has after an event. To prepare for this, nurses should be able to recognize the signs and symptoms of biological agents, if they were to be released in a bioterrorism attack or from a natural disaster (Berkowitz, 2002). An all hazards approach would best meet the educational needs of student nurses since the process of planning and responding to any disaster is similar, and additional education could be provided on chemical, biological, radiological, nuclear, and explosive events. Because no one knows what will cause the next disaster, all nurses need to be able to respond to terrorist attacks as well as natural disasters (Weiner, Irwin, Trangenstein, & Gordon, 2005).

Nursing education currently focuses on individual nurse-patient interactions. The National Student Nurses' Association (NSNA) started passing resolutions in 2003, requesting that disaster preparedness content finally be added to the nursing curriculum taught at all nursing schools. They have asked for assistance from the Red Cross, by inviting them to participate in several national conventions, providing emergency preparedness training. Students have expressed enthusiasm over the inclusion of disaster preparedness content in their curriculum (Smith, 2007). The Association of Community Health Nursing Educators (ACHNE) formed a task force that has identified the essential elements that should be included in undergraduate nursing curriculum for all U.S. nursing schools (Kuntz et al., 2008). The American Association of Colleges of Nursing (AACN) has made known their position that all nurses should be trained to respond to CBRNE events, as part of their beginning education (Stanley, Polivka, Gordon, Taulbee, Kieffer, & McCorkle, 2008).

Several government agencies, regulatory and accrediting bodies, as well as several professional organizations have begun to see the need for emergency preparedness training to be provided to all nurses and student nurses. The Centers for Disease Control and Prevention (CDC) has been charged with verifying that the public health workforce is trained to respond to public health emergencies, as well as natural and man-made disasters. The Homeland Security Presidential Directive 21, regarding public health and medical preparedness was released on October 18, 2007. Sections 36-38 deal with education and training. Included in the directive is the order that within one year of the date of the directive, a core curricula and training program will be developed to ensure standardization of the content within the Federal Government, and it will be communicated at the State and local levels, as well as the academia and private sector (Stanley et al., 2008). To date, this has still not been accomplished.

Healthcare organizations expect recent graduates to be an asset to the organization, having the knowledge to keep patients safe and secure. In order to do this, nursing curriculum needs to be improved and education needs to be completed with healthcare workers of other disciplines, including medical students. Since nurses and doctors will work closely together in the real world, they need to start having some classes and training exercises together during their academic years. Nursing education also needs to be competency-based (Stokowski, 2011). Current competencies in nursing curriculum include health assessment skills, and technical nursing skills like starting IV's and administering medications. Critical emergency preparedness competencies need to be added to the student's education, such as how to recognize abnormal events, understanding where they fall in the incident command system and what their

responsibilities and limitations are. Students need to understand how to protect themselves and others with personal protective equipment (PPE), how points of dispensing (PODs) sites are set up and managed to handle mass dispensing of immunizations or medications, and about risk communication (Polivka et al., 2008).

The Nursing Emergency Preparedness Education Coalition (NEPEC), formerly the INCMCE, has identified emergency preparedness competencies that should be included in all nursing education. These competencies are important to nurses in any area of the healthcare workforce. The basic competencies are broken down into areas of assessment and planning, intervention implementation, and process and outcome evaluation (Kuntz et al., 2008). Other information of great importance is triage fundamentals, weapons of mass destruction, mass casualty evacuation and sheltering, and responder stress and safety (Ireland et al., 2006). It is important that the curriculum be standardized with all other agencies that would partner with nurses and their work place, so that a common language is used, so everyone understands the whole picture. With the proper education and training, student nurses can be ready to handle any emergency that should arise.

Very little research has been done in the area of emergency preparedness content in nursing school curriculum, but the studies that have been done show that the mean number of hours of disaster preparedness content provided in current nursing school curriculum is approximately four hours (Weiner et al., 2005). This content is typically provided during the Community/ Public Health Nursing class, offered in the senior year of BSN programs.

Research performed by Weiner, Irwin, Trangenstein, and Gordon (2005), found that the most frequently mentioned resources for emergency preparedness content mentioned

by responding nursing schools were websites (48.1%), journal articles (44%), textbooks (37.9%), speakers (36.7%), and videos (21.9%). Most schools used two to three types of resources, but this shows that educators don't feel that the current textbooks contain adequate information, so they rely on other sources. Natural disasters received the greatest emphasis in the content, while bioterrorism content was lacking from most schools. No coursework at any school evaluated was provided specific to weapons of mass destruction. The study also brought to light that 75% of respondents felt that the nursing faculty was inadequately prepared to teach in the area of disaster preparedness, response and management (Weiner et al., 2005).

Several barriers have been identified as to why there are inconsistencies in the emergency preparedness content in nursing school curriculum across the nation. There is no national agreement that there needs to be emergency preparedness content in the standard nursing school curriculum, there is little room in the current curriculum to add new content, there is no approved body of content available, there is no oversight group to approve the content, there are few experts available to teach the content, and there is limited funding available to develop and update the content (Weiner et al., 2005).

Methods

This study was performed to determine the inclusion of emergency preparedness content in several nursing textbooks, to assess the education quality and readiness of student nurses to effectively respond to any given disaster.

In this study, a content analysis was completed to examine the quality and amount of content from current textbooks in use at several schools, to determine whether they contain information on the twelve Public Health Nursing Competencies for Emergency

Preparedness developed by the International Nursing Coalition for Mass Casualty Education (INCMCE, 2003). A content analysis is a technique used by researchers to analyze texts by looking at the presence and frequency of specific terms or concepts. Inferences can then be made by comparing the content to look for trends and patterns, which can assist researchers in identifying the key messages for the students using the texts.

Textbook Inclusion

Four schools of nursing in the Dayton, Ohio area were selected as institutes whose textbooks would be evaluated: Sinclair Community College, that offers a two year Associate degree in nursing; Kettering College of Medical Arts, that offers a two year Associate degree in nursing along with an online Bachelor completion program; Cedarville University, which offers a four year Bachelor degree in nursing; and Wright State University, that offers a four year Bachelor degree in nursing, as well as a Master and Doctor of Nursing programs.

Textbooks were evaluated from the nursing schools Introductory Nursing class, Psychiatric Nursing class, and Community/Public Health Nursing class, to determine the emergency preparedness content. Sinclair and Cedarville use the same Introduction to Nursing textbook, and Sinclair and Kettering use the same Psychiatric Nursing textbook. Sinclair does not offer a Community Health Nursing class. Nine nursing textbooks, published between 2007 and 2010 were evaluated:

- Potter, P. A., & Perry, A. G. (2009). *Fundamentals of nursing* (7th ed.). St. Louis, MO: Mosby Elsevier.
- DeLaune, S. C., & Ladner, P. K. (2011). *Fundamentals of nursing: Standards & practice* (4th ed.). Clifton Park, NY: Delmar Cengage Learning.
- Chitty, K. K., & Black, B. P. (2011). *Professional nursing: Concepts & challenges* (6th ed.). Maryland Heights, MO: Saunders Elsevier.

- Townsend, M. C. (2011). *Essentials of psychiatric mental health nursing: Concepts of care in evidence-based practice* (5th ed.). Philadelphia, PA: F.A. Davis Co.
- Stuart, G. W. (2009). *Principles and practice of psychiatric nursing* (9th ed.). St. Louis, MO: Mosby/Elsevier.
- Varcarolis, E. M., Halter, M. J., & Varcarolis, E. M. (2010). *Foundations of psychiatric mental health nursing: A clinical approach* (6th ed.). St. Louis, MO: Saunders/Elsevier.
- Anderson, E. T., & McFarlane, J. M. (2010). *Community as partner: Theory and practice in nursing* (6th ed.). Philadelphia, PA; London: Lippincott Williams & Wilkins.
- Maurer, F. A., & Smith, C. M. (2009). *Community public health nursing practice: Health for families and populations* (4th ed.). St. Louis, MO: Saunders/Elsevier.
- Stanhope, M., & Lancaster, J. (2007). *Public health nursing: Population-centered health care in the community* (7th ed.). St. Louis, MO: Mosby Elsevier.

Four reviewers (1 nurse, 1 nursing student, 1 EMT, and 1 lay person) examined the content in each text using a standardized evaluation sheet, and scored each textbook on the inclusion of information from each of the 12 basic Public Health Nursing Competencies for Emergency Preparedness. There were no differences in scoring, as a competency subject was either included or it was not.

Textbook Evaluation

To identify emergency preparedness content in the textbooks, primary keywords and key phrases such as *nurse's role*, *chain of command*, *emergency response plan*, *drills*, *equipment*, *communications*, *limits*, *creative problem-solving skills*, *deviations from norm*, *continuing education*, and *evaluations* were used to augment the search for related topics. These primary keywords and phrases made identifying the desired content easier to locate. Index listings of each of the nine textbooks were examined to identify the key sections that

needed evaluating, and page numbers were noted. The content was then scanned for relevance of the desired topics.

Every section of each textbook related to emergency preparedness was coded and tracked. A content analysis tracking form was developed by the researcher, and was used by the researcher and three other evaluators, to track information about the content. The form was mostly composed of dichotomous (yes or no) items to help prevent the reviewers from having to make a subjective decision when coding the content. This would also allow the research to be replicated with other textbooks.

The categories for coding were based on the Public Health Nursing Competencies for Emergency Preparedness. The Competencies are as follows:

- 1) Describe PH role in responding to range of likely emergencies
- 2) Describe agency's chain of command in emergency response
- 3) Identify and locate agency's emergency response plan
- 4) Describe one's functional roles and responsibilities in emergency response and demonstrate those roles in regular drills
- 5) Demonstrate the correct use of equipment (including PPE) and skills required in emergency response during regular drills
- 6) Demonstrate the correct use of all equipment used for emergency communication
- 7) Describe communication role in emergency response
- 8) Identify the limits of one's own knowledge, skills, and authority, and identify key system resources for matters that exceed these limits
- 9) Apply creative problem-solving skills and flexible thinking to unusual challenges within one's functional responsibilities and evaluate the effectiveness of all actions taken
- 10) Recognize deviations from the norm that might indicate an emergency and describe appropriate action

- 11) Participate in continuing education to maintain up-to-date knowledge in areas relevant to emergency response
- 12) Participate in planning, exercising, and evaluating drills

Results

The textbook analysis tools completed by each of the four reviewers were identical. This validated that the content was either included or not included in each of the chosen textbooks. This increased the validity of the data to be evaluated.

Three *Introduction to Nursing* textbooks were evaluated. Sinclair and Cedarville use the same book. The only keyword or phrase listed in the index is *Disaster Preparedness*. Only one section of 99 words titled 'Threat of Bioterrorism' is included. There is only one paragraph, and there are no pictures or tables.

Kettering's book has the keyword *Disaster* listed in the index, with subtitles of *defined and preparedness* listed. Only one section of 221 words titled 'Disaster Preparedness' is included. There are no pictures, but there is a table listing different types of Natural and Human-Made Disasters. Also included is a box titled "Spotlight on... Nursing Process in a Disaster that asks several questions for nurses to consider such as what is being done to meet the public's need, what the potential human responses are to the disaster, and how to help the community cope and rebuild.

Wright State's book has the keyword *Disasters*, with subtitles of *defined and nursing challenges in*. One section of 453 words titled 'Disasters and Bioterrorism', along with the list of Core Nursing Competencies for Disaster Preparedness is included. Again, there are no pictures included in the content.

None of the three books offer much emergency preparedness content (see Figure 1), but at least Wright State's textbook of choice lists the needed competencies in a table that fills half of one textbook page.

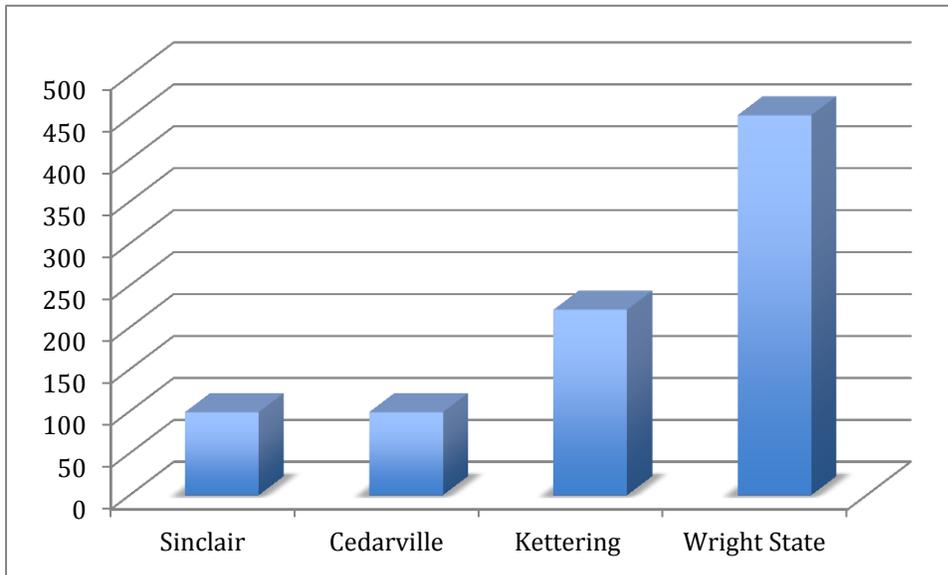


Figure 1. The number of words in the 'Emergency Preparedness' section in the Introduction to Nursing Class textbook of each school evaluated. (Sinclair and Cedarville use the same book).

Three Psychiatric Nursing textbooks were evaluated, as Sinclair and Kettering use the same book. The keywords listed in the index are *Disaster Nursing*, *Disaster Response*, and *Disaster Crisis*. The sections of each book are titled just like the index. The information is covered over 11 pages for the Sinclair and Kettering book, 3 pages for Wright State, and 19 pages for Cedarville. The majority of content in these texts is nursing care plans and role-playing scenarios. Competency information is very limited in all the books. The Cedarville book contains the most content of the Psychiatric books, but there are no pictures in any of the books.

Three Community/Public Health Nursing textbooks were evaluated, as Sinclair does not offer this content in any class. Kettering's book has *Disaster* as the keyword, with 9

additional subtitles. The content is found in half of the chapter titled 'Preventing and Managing Community Emergencies: Disasters and Infectious Diseases', covering 12 pages. Tables are included on the Triage Classification for Care and Transport Priorities, the Mass Triage System, and Stages of Disaster Response (Community and Nursing Roles). No pictures are included in the content.

Wright State's book has information under three *Disaster* keywords, with 79 subtitles, and 5 *Emergency* keywords, with 10 subtitles. The core competencies are provided in a box filling a quarter of a page. Some content is scattered throughout the book, but the majority of the content is found in a chapter of 23 pages titled 'Disaster Management: Caring for Communities in an Emergency'. Examples of 9 man-made and natural disasters are listed, including place, date, and number of casualties. There is a table of the average number of weather related fatalities over a ten and thirty year span included. Incident Command Structure is provided as well as a list of the normal agencies involved in the system. A picture showing a flooded New Orleans, Louisiana neighborhood from 2005 is provided, as well as a picture of the remaining section of the World Trade Center taken in New York, NY after the September 11 terrorist attacks. This book provides the most information from the competencies as well as extra information in the form of pictures, tables, graphs, and figures.

Cedarville's book has information under 8 *Disaster* keywords with 41 subtitles, and 10 *Emergency* keywords with 7 subtitles. Information is found in parts of 4 chapters, as well as a whole chapter of 26 pages titled 'Bioterrorism and Disaster Management'. This book provides the largest table listing types of natural and man-made disasters. It includes a list of emergency supplies that nurses should have ready. Also included are boxes with

websites providing education and training opportunities, volunteer opportunities, Public Health Information Network (PHIN) Components, symptoms of stress, and populations at greatest risk. Pictures included show a family seated at a table making a plan, a home destroyed by a tornado, a nurse with an elderly patient, a Red Cross worker holding a baby, and a relief worker talking to a man with tree limbs down in his yard.

Each textbook could include information from the 12 Public Health Nursing Emergency Preparedness Competencies. Sinclair's Introduction to Nursing textbook includes three competencies: the Public Health Nurse role, response plan and continuing education. The Psychiatric Nursing textbook includes five competencies: the Public Health Nurse role, response plan, communication, creative problem solving, and deviations from norm (see Figure 2).

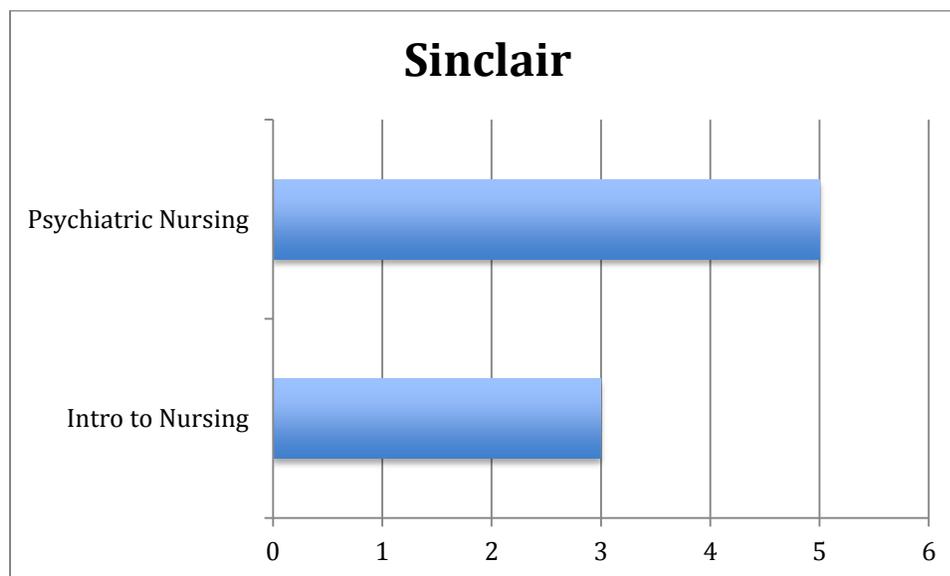


Figure 2. Number of competencies included in Sinclair Community College Nursing textbooks.

Kettering's Introduction to Nursing textbook includes two competencies: the Public Health Nurse role and response plan. The Psychiatric Nursing textbook includes five competencies, which are the same as Sinclair, since they utilize the same textbook. The

Community Health Nursing textbook includes ten competencies: all except emergency communications and deviations from the norm (see Figure 3).

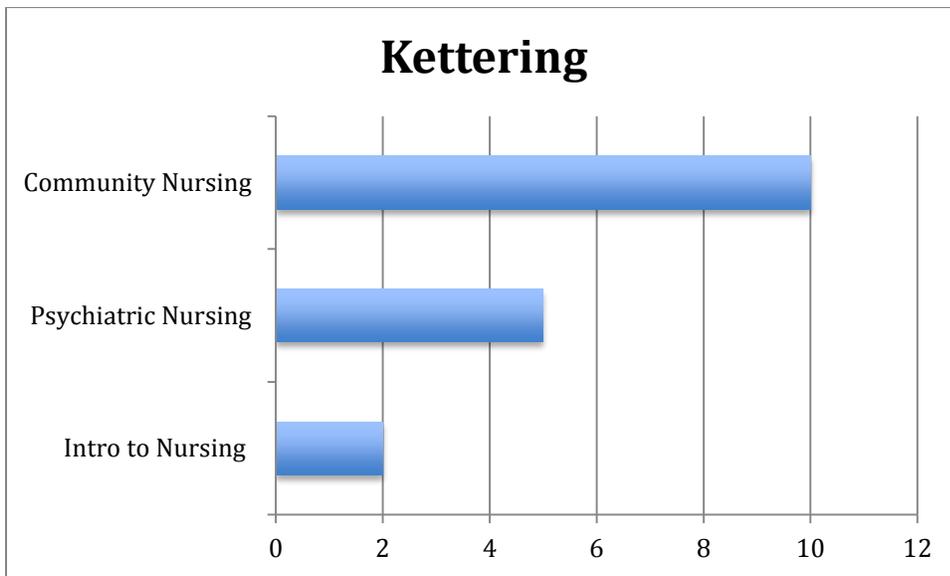


Figure 3. Number of competencies included in Kettering College of Medical Arts Nursing textbooks.

Cedarville's Introduction to Nursing textbook includes three competencies, which are the same as Sinclair, since they utilize the same textbook. The Psychiatric Nursing textbook includes five competencies: the Public Health Nurse role, response plan, communication, creative problem solving, and deviations from the norm. The Community Health Nursing textbook includes all twelve competencies (see Figure 4).

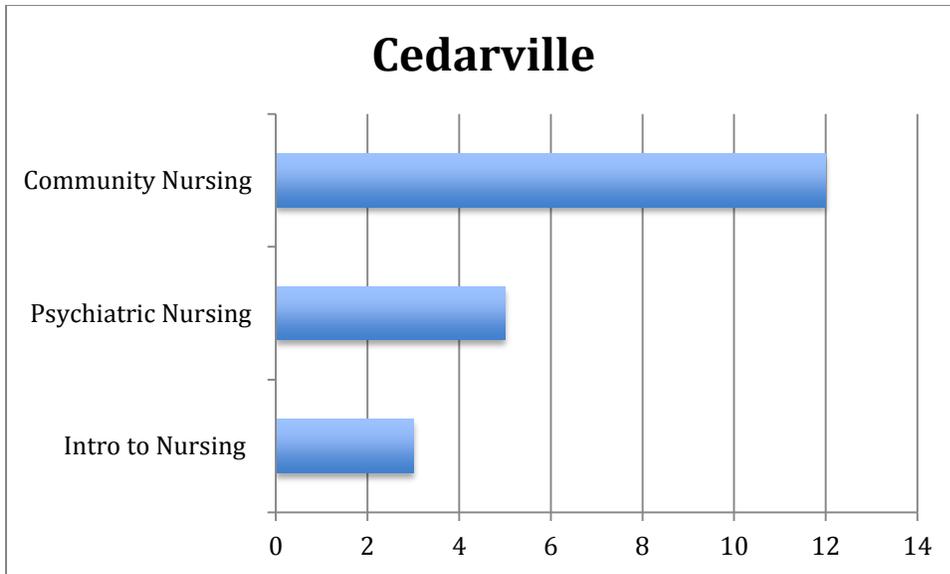


Figure 4. The number of competencies included in Cedarville University Nursing textbooks.

Wright State's Introduction to Nursing textbook includes five competencies: the Public Health Nurse role, response plan, creative problem solving, deviations from the norm, and continuing education. The Psychiatric Nursing textbook includes five competencies: the Public Health Nurse role, response plan, communication, creative problem solving, and deviations from the norm. The Community Health Nursing textbook includes all twelve competencies (see Figure 5).

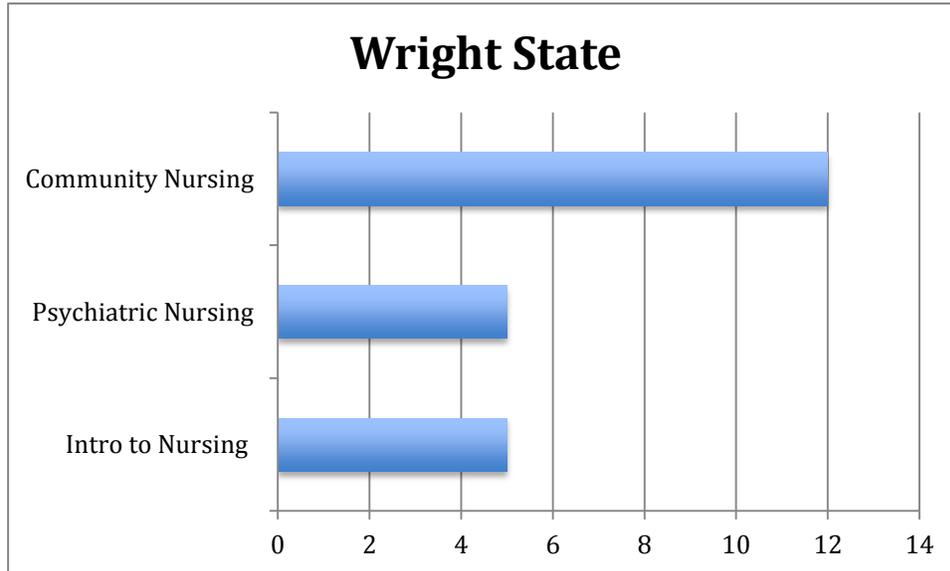


Figure 5. The number of competencies included in Wright State University's Nursing textbooks.

Two of the competencies are included in all nine textbooks: Describe PH role in responding to range of likely emergencies, and Identify and locate agency's emergency response plan. One competency: Demonstrate correct use of equipment used in emergency communication, is only included in two of the nine textbooks evaluated (see Figure 6). Each category of nursing textbook has various aspects that are similar, but they lack the needed content to ensure that student nurses will be ready for a disaster when the next one strikes.

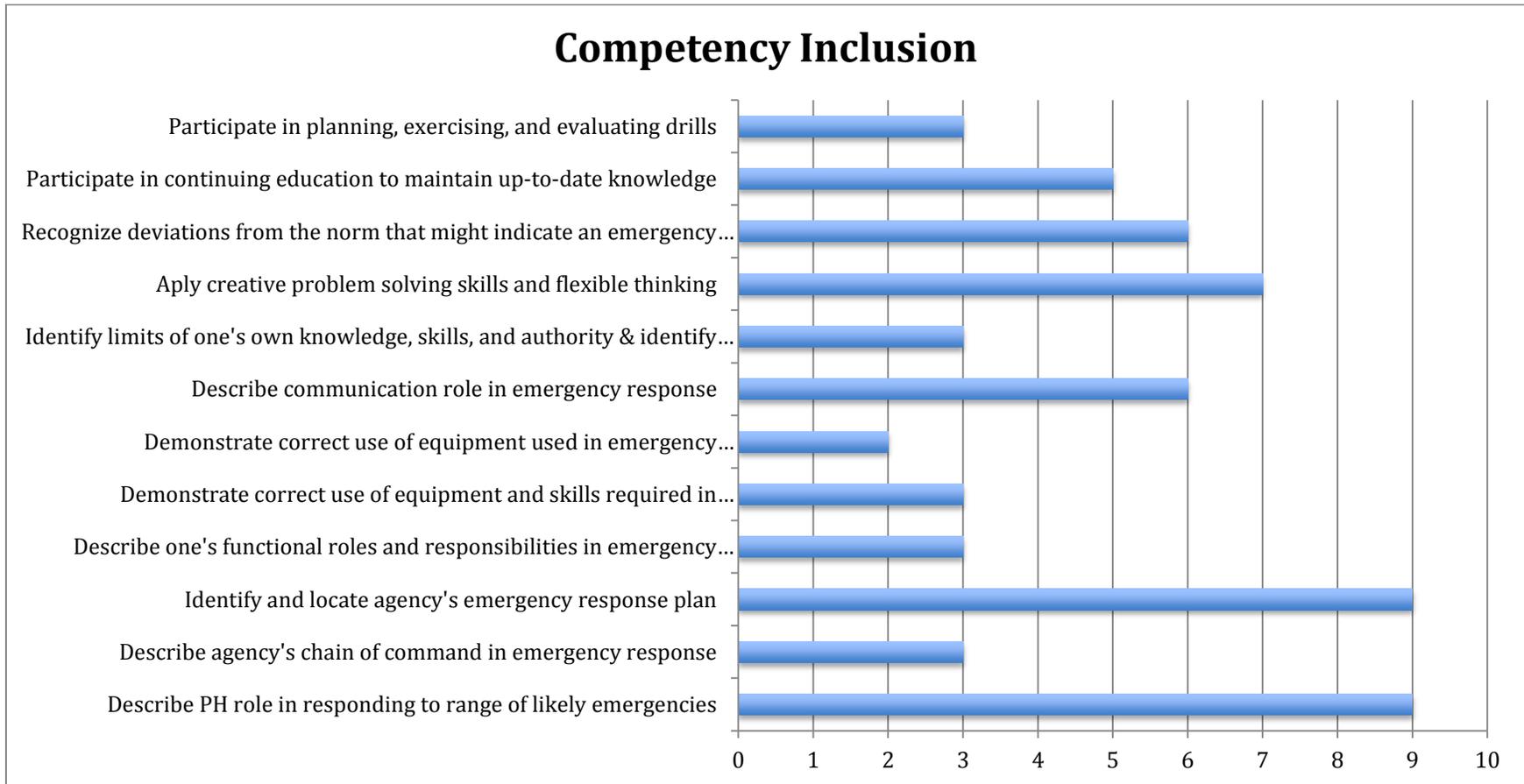


Figure 6. Competency inclusion in the nine Nursing textbooks used for Intro to Nursing , Psychiatric Nursing, and Community Health Nursing classes at Sinclair, Kettering, Cedarville, and Wright State.

Discussion

Large numbers of students are now choosing nursing as a major for many reasons, including job security and higher wages. This career popularity has led to long waits of up to two years and grade point average competitions to be selected for the few coveted spots open each year. Sinclair, Kettering, Cedarville, and Wright State graduate approximately 300-400 students each year combined, and these soon to be nurses, once they pass the State Boards, are the next generation Emergency Preparedness Workforce.

The textbook that Sinclair Community College uses for the Introduction to Nursing class contains only 99 words, and this is all the Emergency Curriculum that Sinclair Students receive in their first Nursing class. It is impossible to understand how anyone can be taught what they need to know about disasters and emergencies in 99 words. It is very concerning that Sinclair Community College does not offer a Community Health Nursing class when they are a Community school. The majority of Emergency Preparedness content is usually included in this type of class, which indicates that Sinclair offers the least Emergency Preparedness content of the four schools evaluated. The majority of Sinclair students is from the Dayton area, and remains in the area after graduation.

Kettering College of Medical Arts ranks third of the four schools evaluated, because while Kettering includes one less competency in the Introduction to Nursing class, it does have a Community Health class with ten competencies included. The wait for this school is not as long as Sinclair, but the cost is much higher than Sinclair. Kettering has a small dorm for out of town students, but most students live local and remain in the area after graduation.

Cedarville University is the most expensive school evaluated, as it is a private Christian school. It ranks second of the four schools, in terms of Emergency Preparedness content. Cedarville houses almost all students in dorms, and few students are from the area. This means most students leave the area after graduation.

Wright State University ranks number one of the four nursing schools in the area, as it uses textbooks that contain the most Emergency Preparedness content. It is the only school that uses an Introduction to Nursing textbook that actually lists the twelve Public Health Nursing Emergency Preparedness Competencies. Students live on and off campus, and students mostly remain in the area after graduation.

One limitation to this study is the small selection of the textbooks reviewed and the small number of schools chosen to be included in the study. Textbooks from other nursing classes from the chosen schools were not evaluated. The researcher acknowledges that information in other textbooks, from the chosen schools or other schools, may be more inclusive and up to date regarding emergency preparedness information.

An additional limitation is that the researcher developed the assessment criteria to be evaluated, and other researchers may have different ideas on what emergency preparedness content should be included in nursing school textbooks.

Preparing nurses before, during, and after disaster requires an updated, standardized emergency preparedness curriculum. This is crucial to protect the community in which nurses' serve. Student nurses need to know the scope of practice, and what their limitations are. It is not practical to wait until a disaster happens to learn how to respond and what ones' roles and responsibilities are.

Nursing accrediting bodies are on board with including emergency preparedness content in nursing school curriculum, as they now include some questions on this content on their standardized nursing exams like HESI and NCLEX.

There are many Public Health implications for having a workforce that is not properly educated prior to the next major disaster. Without training in CBRNE events, symptoms of an attack or disaster may go unnoticed by Emergency Room staff, thus delaying a quick response and clean up. Communications between agencies may suffer, as no one knows who is in charge of the incident, as they are not familiar with the Incident Command structure. Nurses may fall ill themselves, leading to staff shortages, as they may not know how to use personal protective equipment correctly. These are just a few of the problems from not educating student nurses on Emergency Preparedness, and there are probably hundreds more.

The next step in this process would be to redo the research on nursing textbooks, including a greater number of schools and their textbooks, to see if the findings are statistically significant. It would be helpful to join up with organizations leading the effort on standardizing the emergency preparedness curriculum for nursing school programs. It is important to make sure that Nursing faculty are competent to teach Emergency Preparedness, and to bring in field experts to assist when needed. All schools, and organizations need to work with government agencies to enforce Presidential Directive 21, and ensure that all healthcare workers, including student nurses are ready to respond to our next disaster or emergency event.

Conclusion

The findings of this study demonstrate the significant deficits in nursing textbooks, both in the absence of essential emergency preparedness content, and in the presence of outdated information. It is believed that the responsibility for improved texts with standardized content rests on both the publishers and on emergency preparedness experts. There is clearly a huge gap in the content needed to properly prepare today's student nurses for possible natural and man-made disasters worldwide.

Conducting this textbook review was just a beginning step in demonstrating the need to make advances in the nursing school emergency preparedness curriculum in schools of nursing in the Miami Valley area and beyond. One strategy to improve the emergency preparedness knowledge of student nurses is to ensure that the content included in all nursing textbooks is accurate, evidence based, and updated in a timely manner.

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Appendices

Appendix A. Textbook Assessment Tool

School(s) using textbook _____

Textbook for class _____

Amount of content _____

Extras (Pictures, tables, graphs, etc...) Yes _____ No _____

Competencies listed Yes _____ No _____

Competency (Keyword) info included:

- 1) Describe *PH role* in responding to range of likely emergencies Yes___ No__
- 2) Describe agency's *chain of command* in emergency response Yes___ No__
- 3) Identify and locate agency's emergency response *plan* Yes___ No___
- 4) Describe one's functional roles and responsibilities in emergency response and demonstrate those roles in regular *drills* Yes_____ No_____
- 5) Demonstrate the correct use of equipment (including *PPE*) and skills required in emergency response during regular drills Yes___ No___
- 6) Demonstrate the correct use of all *equipment* used for emergency *communication* Yes_____ No_____
- 7) Describe *communication* role in emergency response Yes_____ No_____
- 8) Identify the *limits* of one's own knowledge, skills, and authority, and identify key system resources for matters that exceed these limits Yes_____ No_____
- 9) Apply *creative* problem-solving skills and flexible thinking to unusual challenges within one's functional responsibilities and evaluate the effectiveness of all actions taken Yes_____ No_____
- 10) Recognize *deviations* from the norm that might indicate an emergency and describe appropriate action Yes_____ No_____
- 11) Participate in *continuing education* to maintain up-to-date knowledge in areas relevant to emergency response Yes_____ No_____
- 12) Participate in planning, exercising, and *evaluating drills* Yes___ No___

Total Competencies mentioned _____

Appendix B. Textbook Coding Tally Sheet

Sinclair	KCMA	WSU	CU	Intro	PSY	Comm	Content	Extras	Lists Comp	#1 Role	#2 ICS	#3 Plan	#4 Drills	#5 PPE	#6 Equip
0	1	0	0	0	0	1	0.66	1	1	1	1	1	1	1	0
0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1
0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1
1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0
0	0	1	0	1	0	0	0	1	1	1	0	1	0	0	0
0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	0
0	0	1	0	1	0	0	0	1	1	1	0	1	0	0	0
1	1	0	0	0	1	0	0.33	1	0	1	0	1	0	0	0
0	0	0	1	0	1	0	1	1	0	1	0	1	0	0	0

#7 Commun	# Limits	#9 Create	#10 Deviate	#11 CE	#12 Eval	Total	Level	Prepared	Unprepared
1	1	1	0	1	1	10	High	1	0
1	1	1	1	1	1	12	High	1	0
1	1	1	1	1	1	12	High	1	0
0	0	0	0	1	0	2	Low	0	1
0	0	1	1	1	0	5	Low	0	1
1	1	1	1	0	0	4	Low	0	1
0	0	1	1	1	0	5	Low	0	1
1	0	1	1	0	0	5	Low	0	1
1	0	1	1	0	0	5	Low	0	1

Appendix C. List of Public Health Competencies Met

Specific Competencies
Domain #1: Analytic Assessment Skill
Defines a problems
Determines appropriate uses and limitations of both quantitative and qualitative data
Selects and defines variables relevant to defined public health problems
Identifies relevant and appropriate data and information sources
Evaluates the integrity and comparability of data and identifies gaps in data sources
Applies ethical principles to the collection, maintenance, use, and dissemination of data and information
Partners with communities to attach meaning to collected quantitative and qualitative data
Makes relevant inferences from quantitative and qualitative data
Obtains and interprets information regarding risks and benefits to the community
Applies data collection processes, information technology applications, and computer systems storage/retrieval strategies
Recognizes how the data illuminates ethical, political, scientific, economic, and overall public health issues
Domain #2: Policy Development/Program Planning Skills
Collects, summarizes, and interprets information relevant to an issue
Domain #3: Communication Skills
Communicates effectively both in writing and orally, or in other ways
Solicits input from individuals and organizations
Advocates for public health programs and resources
Effectively presents accurate demographic, statistical, programmatic, and scientific information for professional and lay audiences
Attitudes
Listens to others in an unbiased manner, respects points of view of others, and promotes the expression of diverse opinions and perspectives
Domain #4: Cultural Competency Skills
Attitudes
Understands the importance of a diverse public health workforce
Domain #5: Community Dimensions of Practice Skills
Establishes and maintains linkages with key stakeholders
Collaborates with community partners to promote the health of the population
Accomplishes effective community engagements
Identifies community assets and available resources
Domain #6: Basic Public Health Sciences Skills
Understands the historical development, structure, and interaction of public health and health care systems
Identifies and applies basic research methods used in public health
Identifies and retrieves current relevant scientific evidence
Identifies the limitations of research and the importance of observations and interrelationships

Domain #6: Basic Public Health Sciences Skills
Attitudes
Develops a lifelong commitment to rigorous critical thinking
Domain #8: Leadership and Systems Thinking Skills
Helps create key values and shared vision and uses these principles to guide action
Identifies internal and external issues that may impact delivery of essential public health services (i.e. strategic planning)
Promotes team and organizational learning