An Analytical Review of Disaster Nursing Competencies in Korea: 1995-2013

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1. Introduction

1.1 Research Background

The frequency and degree of damage of disasters caused by global warming and climate changes are continuously increasing. For this reason, the introduction of a new concept and paradigm for nursing or nursing competencies is inevitable (NeSmith, 2006) as a response to the increased need for nursing interventions in disaster scenes. Throughout the history of Korean modern nursing, nursing has played a role in numerous...
historical disasters to save the lives and health of victims. However, the concept of ‘disaster nursing’ was only recognized at the end of the 1990s when it was introduced as a practical component of the disaster management system along with other changes, a development that was triggered by the Sampoong Department Store collapse (the so-called “Sampoong accident”) in June 29, 1995. The incident resulted in enormous casualties, including 508 dead or missing and 937 injured (NEMA, 2008). Using this tragedy as a spur, the necessity for the establishment of health emergency measures in large populations in response to disaster situations was brought into the spotlight by health professionals.

Starting in the late of 1990s, ‘Emergency and Disaster Nursing’ and other courses began to be included in the curriculum of nursing programs in Korea as independent subjects or dependent courses (Lee & Wang, 2008). The Korean Association of Community Health Nursing has recently added ‘disaster nursing’ to the main category of the standard of learning objectives. Moreover, there have been various efforts to develop training courses for graduate nurses. These programs or courses usually stipulate their educational goals or outcomes with the terms ‘able to’ or ‘capable to’ to indicate the competencies that are required to be attained by the students following these courses.

Competency is the final product of education and is defined as the condition of being capable, ability (Collins, 2009) of an individual to achieve personal goals or tasks. The expected role or competencies in disaster nursing may differ from country to country according to the nature of the disasters that most frequently occur in the given country. The September 11 attacks of the United States of America motivated the International Coalition for Mass Casualty Education to develop ‘Educational Competencies for Registered Nurses Responding to Mass Casualty Incidents’ (Stanly, 2003), and the earthquakes of Japan stimulated the Research Institute of Nursing for People and Community at University of Hyogo to determine ‘Core Competencies Required for Disaster Nursing’ (the so-called “Hyogo framework”) (Yamamoto et al., 2006). Putting together, in 2009, the International Council of Nurses and WHO developed and disseminated ‘ICN Framework of Disaster Nursing Competencies’ (the so-called “ICN framework”) (WHO and ICN, 2009).

Increases in the potential risk of domestic and overseas disasters and the opportunity to participate in the disaster scenes of nursing have led to an increase in the need for a standardized education. A country-based framework of disaster nursing competencies based on evidence-based knowledge and consensus will provide quality assurance for disaster nursing education and practice.

Over the last decade, systematic reviews have become milestones for evidence-based knowledge (Moher et al., 2007). For non-experimental research, content analysis is recommended for systematic or integrative review (Wittmore & Knafl, 2005). The quality appraisal is important to stimulate additional knowledge development. Kako and Mitani (2010) reviewed disaster nursing competencies in Japanese nursing journals using a method of systematic review, which resulted in a high-quality appraisal of the data, a process that has never been done in Korea.

The study aimed to primarily analyze competency-centered research papers published in Korean journals and suggest future directions for research on disaster nursing competencies.

1.2 Purpose and Research Questions

The purpose of this study was to identify the whats and hows of disaster nursing competencies that have been investigated in the past, and was achieved through a systematic review of the primary papers that have been published in Korean professional journals between 1995 to 2013, with the utilization of the research questions below. Additionally, the study was performed to suggest future directions for further studies based on a Korean framework of disaster nursing competencies.

1) What research methods were used to measure disaster nursing competencies?
2) What frameworks and components were used to measure disaster nursing competencies?
3) What is the level of disaster nursing competencies?

2. Methods

2.1 Database Searches

The review was conducted using data retrieved from the Research Information Sharing Service (RISS) 2.0 (http://www.riss.kr) and DBpia 6.1 (http://www.dbpia.co.kr), which primarily cover all papers in Korean journals, theses, and dissertations published domestically. This review included all articles published from 1995 to 2013, since the Sampoong accident provided a turning point for changing the paradigm of disaster management in Korea. ‘Disaster’ had been consistently used before as an English keyword, but the term ‘disaster’ was divided into ‘calamity’ (‘jae-nan’ in Korean), meaning man-made calamities, and ‘disaster’ (‘jae-hae’ in Korean), meaning natural disasters, after 1995. However, the two words are interchangeably used in academic research (Lee et al., 2010). Articles were searched using ‘disaster nursing’ or ‘calamity nursing’ combined with ‘competencies’. Similar

2.2 Inclusion and Exclusion
A total of 132 publications aside from duplication were extracted from databases using the combined keywords, and 63 dissertations were initially excluded. Abstracts were thoroughly screened to filter related papers, and 43 publications on individual safety and industrial accidents in the industrial scenes were excluded. In addition, this review also excluded grey literature (editorials, opinions, reports, personal experiences, conceptual definition, and others), non-peer-reviewed articles, and victim-related data. The inclusion criteria were peer-reviewed articles, papers written in Korean, primary research data, involvement of nurses or nursing students, and studies on nursing curriculum. After reviewing 26 full-text articles, ten studies were finally selected (Fig. 1).

2.3 Data Analysis
To answer the research questions, firstly, the primary papers retrieved from searches were tabulated for the purpose of overviewing the research methodological characteristics and main results. Secondly, the frameworks were tabulated in the forms of the models and strategies used, the presence or absence of frameworks, and the components of disaster nursing competencies involved in the frameworks. Thirdly, the components of the competencies shown in the papers were analyzed according to the five categories of the Hyogo framework. The Hyogo framework is regarded by the researcher as being more practical and applicable for the analysis of the 10 papers that were looked at since the subjects of the studies included students. The ICN framework was developed for the use of general nurses and was based on the Hyogo framework. Yamamoto et al. (2006) developed the Core Competencies Required for Disaster Nursing for undergraduate students upon graduation. The core competencies have five categories: (i) fundamental attitudes toward disaster nursing; (ii) systematic assessment and provision of disaster nursing care; (iii) care provision for vulnerable people and their families; (iv) care management in disaster situations; (v) professional development. The core competencies are integrated by knowledge, skills, and judgement (Fig. 2).

3. Results

3.1 Methodological Characteristics
The baseline characteristics of primary studies were analyzed mainly based on research design, subjects, samples, research tools, and data analysis methods. Most studies were published in nursing journals, three papers were published in disaster-related journals, and one paper was published in an information-related Journal (Table 1). Published journals included SSCI, KCI, or KCI-E listed journals. The sample sizes

![Fig. 1. Flow Chart of Data Selection.](image1)

![Fig. 2. The Hyogo Framework of Core Competencies for Disaster Nursing(Yamamoto et al., 2006).](image2)
<table>
<thead>
<tr>
<th>#</th>
<th>Author(s), year, title</th>
<th>Journal</th>
<th>Study design</th>
<th>Methods (participants, sample, instruments, analysis)</th>
<th>Main results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kang et al. (1998) Curriculum development on the disaster management</td>
<td>J. Korean Academy of Nursing</td>
<td>Curriculum development</td>
<td>Reviewing literature and guidelines, participatory observations, expert validation</td>
<td>Developed ‘Integrated Disaster Management System Model’ and ‘Disaster Curriculum Model’ into 4 levels: introductory, fundamental, advanced, and expert course.</td>
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<tr>
<td>2</td>
<td>Choi (2005) Narrative analysis on survivor’s experience of Daegu subway fire disaster: hypothetical suggestion for disaster nursing practice</td>
<td>J. Korean Academy of Nursing</td>
<td>In-depth interview (narratives)</td>
<td>Daegu Subway Fire (2003) victims N=20 Hermeneutical distanciation and hermeneutical circulation analyses</td>
<td>Victims want nurses to intervene in earlier phase of disaster, to understand emotional experience of victims, to have knowledge on disaster complexity, interdisciplinary activity and study, to provide long-term care, and care victim’s family and friends.</td>
</tr>
<tr>
<td>3</td>
<td>Yu et al. (2007) Development of simulation-oriented educational program for disaster nursing</td>
<td>J. Military Nursing Research</td>
<td>Curriculum development</td>
<td>Focus group interview, program development and evaluation with 5-point Likert scale</td>
<td>A simulation based disaster nursing education program was developed based on need assessment; awareness of ICS, Triage skill, first-aid onsite, and effective transfer system.</td>
</tr>
<tr>
<td>4</td>
<td>Lee and Wang (2008) Exploration on disaster nursing education in Korea</td>
<td>J Korea Society of Disaster Information</td>
<td>Descriptive survey design</td>
<td>Nursing programs of 2006 in Korea N=93 Self-reported questionnaire Descriptive analysis</td>
<td>Twelve schools (12.9%) provide disaster nursing contents in a single subject titled as ‘Emergency Nursing’ or ‘Emergency and Disaster Nursing’. Eight schools let them included in ‘Adult Health Nursing’.</td>
</tr>
<tr>
<td>5</td>
<td>Lee et al. (2008) Historical review on disaster nursing activities in Korea (1945-2005)</td>
<td>J Korea Society of Disaster Information</td>
<td>Historical research design</td>
<td>Reviewed documents, governmental reports, top 3 newspapers from 1945 to 2005 In-depth interview of 4 nurses participated in disaster health services Content analysis</td>
<td>Few evidences of disaster nursing activities were reported by newspapers. During preparedness phase, no evidence of nursing activities were found.</td>
</tr>
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</table>
Table 1. Continued

<table>
<thead>
<tr>
<th>#</th>
<th>Author(s), year, title</th>
<th>Journal</th>
<th>Study design</th>
<th>Methods (participants, sample, instruments, analysis)</th>
<th>Main results</th>
</tr>
</thead>
</table>
| 6  | Ann et al. (2011) Study on the disaster preparedness of nurses in some Korean regional emergency medical centers | J Military Nursing Research                | Descriptive survey design  | Nurses from 8 regional emergency medical centers  
N=706(G-power)  
Self-report questionnaire: Disaster Preparedness Questionnaires for Nurses(DPQ-N); content validation(CVr=.88; Cronbach's α=.97) | Disaster experienced 4.7%, disaster education experienced 16.3%, disaster preparedness showed 2.79 ± 0.74 out of 5 in average; highest in emergency patient care, lowest in CBRNE domain. Nurses want face-to-face, short term continuing education for disaster nursing preparedness. |
| 7  | Kang et al. (2012) Study on disaster experience and preparedness of university students | J Korean Academic Society of Nursing Education | Descriptive survey design  | Nursing students, EMT students, N=362(G-power)  
Self-report questionnaire  
Researcher developed instrument (Cronbach’s α=.78) | Disaster experienced 3.3%, exposure to disaster-relate subject 20.2%, concern for disaster preparedness 28.38 ± 5.37 out of 50, and intention to participate disaster class 94.8%. Higher score of concern for disaster preparedness in 4th year students previously exposed to disaster-relate subject. |
| 8  | Park and Choi (2012) Study on the triage performance of military nurses and its related factors using a mass casualty scenario, paper exercise | J Military Nursing Research                | Descriptive survey design  | Military nurses from 5 military hospitals, N=133(G-power)  
Triage performance against mass casualty (Advanced Disaster Life Support) scenario | Accuracy of triage performance 63.5%, performance time 5.2 minutes against 20 casualties. Ranks and drill experiences were significant factors on its accuracy. |
| 9  | Ahn and Kim (2013) Disaster experience, perception and core competencies on disaster nursing of nursing students | J Digital Policy & Management               | Descriptive correlation study design  | Nursing students  
N=172(G-power)  
Self-report questionnaire  
Revised Noh's Emergency Preparedness Questionnaire (Cronbach's α=.90) | Disaster experienced 20.3%, perception on importance of disaster nursing 7.3%, intention to participate disaster education 86%, and disaster nursing competencies 41.56 ± 7.47 out of 75. Positive correlation between perception and competencies on disaster nursing(r=.16, p<.050). |
| 10 | Lee et al. (2013) Development of the disaster nursing competencies scale for nursing students | J Korea Society of Disaster Information    | Methodological study        | Nursing students  
N=270, Self-report questionnaire  
Researcher developed instrument (Cronbach's α=.93) | Factor analysis: knowledge factor consist of 11 items, Cronbach's α=.87; skill factor consist of 11 items, Cronbach's α=.90. |
<table>
<thead>
<tr>
<th>Author(s)(year)</th>
<th>Models, strategies used</th>
<th>Frameworks on competencies</th>
<th>Components of competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kang et al. (1998)</td>
<td>Model development; 'Disaster Curriculum Model'(DCM)</td>
<td>Two roles and 4 levels: direct, indirect; introductory, fundamental, advanced, and expert</td>
<td>Direct roles: rescue, disaster health services, mass care, shelter management</td>
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<td></td>
<td></td>
<td></td>
<td>Indirect roles: damage assessment, logistics, human resources management, etc.</td>
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<tr>
<td>Choi (2005)</td>
<td>Victim's viewpoint on disaster nursing</td>
<td>Not mentioned</td>
<td>Early engagement, psychological support, knowledge on disaster complexity, interdisciplinary co-works, long-term care after disaster</td>
</tr>
<tr>
<td>Yu et al. (2007)</td>
<td>Dick &amp; Carey(1996): Systematic Instructional Design Model; Simulation-PBL as teaching-learning method</td>
<td>Disaster field management</td>
<td>Basic concept of disaster, safety management disaster onsite, setup onsite clinic, triage, transfer, life support on various injuries, and disaster situational approaches</td>
</tr>
<tr>
<td>Lee et al. (2008)</td>
<td>Retrospective approach</td>
<td>Disaster developmental phases: preparedness, response, recovery</td>
<td>Preparedness phase: none of specific activities</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>Response phase: health assessment, CPR, Triage, preoperative care, dressing, medication, home visit, health education, referral, and indirect activities</td>
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<td></td>
<td></td>
<td></td>
<td>Recovery phase: psychological support, support self-support group</td>
</tr>
<tr>
<td>Ann et al. (2011)</td>
<td>Tool development; 'Disaster Preparedness Questionnaires for Nurses(DPQ-N)'</td>
<td>Nine domains and 50 tasks of disaster nursing competencies</td>
<td>Domains: Basic concepts of disaster, hospital disaster planning, emergency patient care, psychological issues, CBRNE agents, epidemiology/quarantine, communication, personal preparedness, and legal &amp; ethical issues</td>
</tr>
<tr>
<td>Kang et al. (2012)</td>
<td>Self-designed tool</td>
<td>Not mentioned</td>
<td>Evacuation, CPR, first-aid, survival techniques</td>
</tr>
<tr>
<td>Park and Choi (2012)</td>
<td>Advanced Disaster Life Support scenario</td>
<td>Not mentioned</td>
<td>Triage on mass casualties</td>
</tr>
<tr>
<td>Lee et al. (2013)</td>
<td>ICN framework(2009), Ann's DPQ-N(2011), Walsh's Core competencies for disaster medicine and public health (2012)</td>
<td>Disaster nursing competency scale: knowledge factor (11 items), and skills factor (11 items)</td>
<td>Basic concept of disaster, skill (crisis communication, health education, physical care, first aid psychological care, PPE, evaluation, triage, assessment, isolation, decontamination), knowledge (disaster nursing activity, disaster plan, disaster management, law &amp; ethics, long-term care plan, CBRNE), etc.</td>
</tr>
</tbody>
</table>
ranged from 20 individuals in a narrative analysis (Choi, 2005) to 706 individuals in a research survey (Ann et al., 2011). G-power analysis was used to calculate sample sizes in four papers published after 2011 among descriptive studies (Ann et al., 2011; Kang et al., 2012; Park & Choi, 2012; Ahn & Kim, 2013). The general characteristics of subjects varied considerably; however, most studies consisted of only nurses or nursing students and students in nursing and emergency medical technology programs (Kang et al., 2012). A study by Choi (2005) was distinguished by in-depth interviews conducted with victims by inquiring about the expected roles of nurses during disaster events through a qualitative study.

A wide range of designs were used in domestic studies on disaster nursing competencies. The most commonly used study design was descriptive research, which accounted for five of all papers, and one study historically reviewed the nursing activities during major disasters that occurred between Korea’s declaration of independence in 1945 and 2005 (Lee et al., 2008). Two non-experimental studies were performed to develop a disaster nursing curriculum using different approach methods (Kang et al., 1998; Yu et al., 2007).

Two assessment tools (Ann et al., 2011; Lee et al., 2013) were developed with a relatively high reliability (Cronbach’s α = .97; Cronbach’s α = .93) by applying a content validation index and varimax rotation factor analysis. Ahn and colleagues (2011) developed a Disaster Preparedness Questionnaires for Nurses (DPQ-N) dedicated to nurses. Lee and colleagues (2013) confirmed 22 items to measure disaster nursing competencies for nursing students. Ahn and Kim (2013) maintained the Cronbach’s alpha coefficient at 0.90 for 15 items by revising and modifying the measure of Noh (2010) (Cronbach’s α = .94).

### 3.2 Frameworks and Components of Disaster Nursing Competencies Used

To organize the classification and level of disaster nursing competencies, the frameworks anticipated to be suggested or covered in studies are as follows (Table 2).

In the early phase after introduction of a disaster nursing concept, the Integrated Disaster Management System Model (IDMSM) and the Disaster Curriculum Model were developed (Kang et al., 1998), which emphasize multidisciplinary cooperation in disaster nursing and discriminate disaster nursing from clinical nursing. At the time, the models intended to deal with the level and content of emergency management ability and comprised four phases: introductory, fundamental, advanced, and expert. The various roles in disaster situations were explained and classified into direct and indirect services.

Although content validity was not confirmed, Yu and colleagues (2007) aimed to develop a short-term training program for the content of disaster nursing competency and to evaluate the effects of the program through focus group interviews. The nine categories of DPQ-N (Ann et al., 2011) include the basic concepts of disaster, hospital disaster preparedness, emergency care nursing, psychological issues, CBRNE, epidemiology and quarantine, communication, individual preparedness, legal and ethical issues and others; however, their theoretical bases are not suggested.

A historical review (Lee et al., 2008) summarized the past records of nursing interventions in crisis according to the three phases of disaster. No specific frameworks were proposed in two studies on students in nursing and emergency medical technology. One (Kang et al., 2012) measured CPR, emergency care, and survival skills with competencies, the other (Ahn & Kim, 2013) described a wide range of content, including an overview of disaster, emergency first response, the mission of medical practitioners, guidance, community medical care systems, assessment, supervision and report, severity classification, needs assessment, records, information management, nursing care for vulnerable people, and others. Moreover, a narrative analysis defined the following concepts of nursing needs in disaster situations recognized by victims through in-depth interviews: early engagement, psychological support, knowledge on disaster complexity, interdisciplinary co-works, and long-term care after disaster (Choi, 2005).

Analyzing the components by the Hyogo framework, the components of nine papers were mostly attached to Category

<table>
<thead>
<tr>
<th>Category of core competencies</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
<th>#8</th>
<th>#9</th>
<th>#10</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Fundamental attitudes toward disaster nursing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>II. Systematic assessment &amp; provision disaster nursing care</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>III. Care provision for vulnerable people &amp; their families</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>IV. Care management in disaster situations</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>V. Professional development</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</table>

### Table 3. Classification of the Components by the Hyogo Framework
II, the category of the systematic assessment and provision of care, while Category III, the category of care provision for vulnerable people and families, was neglected by these nine papers. Category I, the category of fundamental attitudes toward disaster nursing, and Category IV, the category of care management in disaster situations, were selected by more than half of the papers (Table 3).

3.3 Level of Disaster Nursing Competencies

Disaster nursing competencies are assessed using a wide range of methods. Only 12.9% of academic institutions operate ‘Emergency and Disaster Nursing’ or ‘Emergency Nursing’ as independent subjects to promote disaster nursing competencies in the undergraduate program of nursing schools in Korea (Lee & Wang, 2008). Clinical nurses (Ann et al., 2011) who participated in education or training related to disaster nursing accounted for only 16.3% of all subjects. The scale of disaster preparedness competencies was rated on a five-point Likert scale, and the mean score was relatively low at 2.79 (±0.74) points. By item, the highest score was shown in emergency care nursing, while the lowest score was in the area of CBRNE. Nurses preferred face-to-face short-term continuing education to strengthen disaster nursing competencies. Nursing students (Ahn & Kim, 2013) had a moderate level of disaster preparedness competency (41.56±7.47 out of 75) and a positive correlation between disaster recognition and disaster nursing competency (r=.16, p<.05).

Lee and colleagues (2008) attempted to determine the root of disaster nursing activities and found no record of nursing activities in the phase of disaster preparedness in the past. On the other hand, recent studies (Ann et al., 2011; Park & Choi, 2012) have reported that disaster nursing preparedness or the level of competencies showed significantly positive correlations with work experience or rank of military nursing officers, disaster experience, recognition of the importance of disaster nursing competencies, and experience in disaster-related education. The nursing students who were exposed to clinical practice at emergency room and attending disaster nursing classes, were significantly higher in their knowledge and skill in disaster nursing (Lee et al., 2013).

4. Discussion and Limitations

4.1 Few Studies

The review of disaster nursing competencies was performed using various methods, but the knowledge level of outcomes was primarily in the fourth or fifth stage, as defined by descriptive or non-experimental studies. A smaller number of studies was reviewed in this study, involving only nine papers, which was fewer than the study by Kako and Mitani (2010) in which 43 papers were finally analyzed for the systematic review of articles published in Japanese journals from 2001 to 2008. With the impact of the unexpected Sampoong collapse, a large number of studies investigated disaster-related nursing in Korea; however, several studies were either non-peer-reviewed articles or unpublished dissertations. Dissertations on various themes need to be published in journals to share knowledge regarding themes such as the development of a measurement instrument for disaster nursing competencies, nursing guidelines for special emergency response, and others. Three studies were conducted on military nursing among nine papers finally included in this review. These studies particularly focused on disaster-response-centered efforts such as triage, CBRNE, field clinics, and others. This is considered to be a result of the current situation in Korea with the potential risk of war, with a minimal contribution to the ICN frameworks of disaster nursing competencies (WHO & ICN, 2009).

4.2 Lack of Frameworks on Disaster Nursing

The systematic review was able to show that basic theoretical frameworks were considerably insufficient in categorizing disaster nursing competencies. Investigators were prone to deciding that international assessment tools for disaster nursing competencies were inappropriate in Korean situations, and tended to omit statistical tests on validity in many cases of tool development. Although the nine criteria of DPQ-N (Ann et al., 2011) were creative, the theoretical foundations of inter-correlation, weighted values, and category classification were inadequate. The assessment tool could be considered unsystematic when compared to DPET© of Al Khalaileh and colleagues (Al Khalaileh et al., 2010), which comprised 68 items in three different stages of disaster: the pre-preparedness phase, including knowledge, disaster technology, and individual preparedness; the response phase, including knowledge and patient care; and the recovery phase, including knowledge and management.

Disaster nursing competencies are categorized into prevention, preparedness, response, and recovery according to the four phases of disaster. Jennings-Sanders (2004) suggested that the Jennings Disaster Nursing Management Model and the ICN Framework of Disaster Nursing Competencies of the International Council of Nurses (WHO & ICN, 2009) were developed based on the classification and, as such, were adopted as a theoretical basis or conceptual framework by nursing researchers domestically and internationally. Domestically, Noh (2010) developed an assessment tool by revising and modifying the Emergency Preparedness Information Questionnaire (EPIQ) of
the ICN framework in her thesis. Ahn and Kim (2013) expanded on Noh (2010) by revising and modifying these frameworks again. These processes became considerably more distant from the original frameworks. In contrast, a study by Chan and colleagues (2010) developed a competency-centered education program on disaster nursing by faithfully reflecting the original ICN framework and had positive results.

Taking global perspectives into account, the preceding studies on disaster nursing competencies showed a preponderance of disaster field response-oriented nursing competencies, such as health assessment, triage, first aid, decontamination, etc. Clearly, more concern should be focused on providing care for vulnerable people in need. The disaster paradigm is shifting from vulnerability to resilience (Bhatia, 2014). During the recovery phase, the area of long-term care planning and provision of care for the community should be given much attention in order to strengthen the resilience of victims. While the ICN framework is categorized according to disaster phases, the Hyogo framework is oriented towards the duties of nurses in disasters. Whether one of these global guidelines is adopted or the frameworks made into a Korean version, the partial adoption of disaster nursing competencies as opposed to complete adoption is unacceptable.

4.3 Low Level of Disaster Nursing Competencies

The disaster nursing competencies of nurses and nursing students were measured by expressing them at the level of disaster preparedness in the reviewed studies. The levels of knowledge on individual disaster preparedness and disaster nursing ranged from low to moderate (Table 1). Approximately 20% of all subjects had experience in disaster-related education or training. When the awareness of emergency management preparedness in nurses was examined using the assessment tool of disaster preparedness in Jordan, 31% of nurses had received disaster-related education in their undergraduate programs; however, only 5% of these nurses considered themselves to be well-prepared for disasters (Al Khalaileh \textit{et al.}, 2012). Moreover, the majority of Australian emergency care nurses (69%) received education in disaster response through their job training, but the percentage of correct answers did not surpass 50% in their knowledge evaluation (Hammad \textit{et al.}, 2011).

The increase in disasters both at home and abroad has increased the need for disaster nursing competencies, and changes in education are essential to meet these needs. Education to strengthen disaster nursing competencies needs to be performed according to the standardized guidelines and academic goals of the regular curriculum. It is a very desirable change that disaster nursing competencies are included as a main category of academic goals in Community Health Nursing courses, but this change needs to be evaluated if it is to be a comprehensive and competency-oriented academic goal that takes global perspectives into consideration.

4.4 Limitations

This study was meaningful in that it attempted to systematically review and analyze the content of papers on disaster nursing competencies based on a global perspectives. However, there are some limitations to this study. Although a number of creative papers on disaster nursing were published in university journals after the Sampoong collapse between 1999 and 2001, these were excluded due to the absence of a peer review scheme. In addition, while several disaster nursing competencies were addressed in theses or dissertations written for Master's and Doctoral degrees, a considerable number of these research papers were non-peer-reviewed articles. Despite the small number of studies, this review attempted to analyze the content of previous studies by primarily focusing on research methodology and frameworks. However, this study still had limitations in conceptually integrating a common theory.

5. Conclusions

Disaster nursing competencies are core competencies for domestic or overseas emergency response protocols, which are distinguished from standard clinical or community health nursing. The frequency of disasters is relatively lower in Korea. After the Sampoong collapse in 1995, the notion of disaster nursing was defined and has since emerged as a social issue among researchers. Even though fewer studies have been performed in Korea compared to Japan, studies with various methods and themes have been attempted. The themes of previous studies on nursing competencies have covered the development of education or training programs, the measurement of disaster field response-oriented nursing competencies, and instrument development for the measurement of disaster preparedness level. However, these studies failed or were insufficient at providing a theoretical ground or framework. According to the Hyogo framework, Category III of provision of care provision for vulnerable people and their families was mostly neglected.

Regarding disaster nursing competencies, future studies need to satisfy global perspectives and should have as their aims the further development of standardized disaster nursing core competencies that are appropriate for domestic and international situations. Future studies are expected to propose standardized
References


