

韓國應急救助學會誌 第18卷 第1號, 83~94 (2014, 4)  
 Korean J Emerg Med Ser Vol. 18, No. 1, 83~94 (2014, 4)  
 The Korean Journal of Emergency Medical Services

## The effect of global disaster competency development program on paramedic and nursing undergraduate students

Sun-Joo Kang<sup>1,2</sup> · Mei-Hua Piao<sup>1\*</sup>

<sup>1</sup>Department of Nursing, Cheju Halla University

<sup>2</sup>Halla-Stony Brook EMEC

## 글로벌 재난 역량 개발 프로그램이 응급구조과와 간호학과 학생에게 미치는 효과

강선주<sup>1,2</sup> · 박미화<sup>1\*</sup>

<sup>1</sup>제주한라대학교 간호학과, <sup>2</sup>한라-스토니브룩 응급의료교육원

### =Abstract =

**Purpose** : This study assessed the improvement of competency levels for participants, as well as their satisfaction from completion of the special international disaster response program.

**Methods** : The program structure followed an intensive two-week course that included a combination of lectures, discussions, case studies, and field trips. "ICN Framework of Disaster Nursing Competencies" was used for designing the program. A pre-post survey was done to measure the change in the competencies of students and assess their satisfaction after finishing the program. Focus group interviews were also performed to further understand the attitudes of participants toward the disaster issues.

**Results** : The overall pre-program test score for disaster competency was  $2.18 \pm 0.68$  and the post-program test score was  $6.30 \pm 0.84$ , which showed statistically significant gains in all competency items ( $p < .001$ ). The general satisfaction of participants with the program was quite high, demonstrated by a mean score of  $4.5 \pm 0.51$ . The benefits for students from program participation included increased knowledge and better understanding of the important roles of international organizations and NGOs.

**Conclusion** : The international disaster education programs are necessary to provide an opportunity for

투고일: 2014년 2월 20일 심사완료일: 2014년 4월 16일 게재확정일: 2014년 4월 21일

\*Corresponding Author : Mei-Hua Piao

Department of Nursing, Cheju Halla University, Halla University Rd. 39, Jeju-Si, Jeju Special Self-Governing Province, 690-708, Republic of Korea

Tel: +82-64-741-6721 Fax: +82-64-741-6739 E-mail: parkmihua@gmail.com

students to increase their disaster competency. In addition, future development of a unified educational competency framework is also necessary.

**Keywords** : Disaster competency, Disaster, Attitude, Knowledge

### =국문초록=

**연구 목적** : 우리나라는 인도주의적 차원에서 국제구조대와 한국재난대응팀을 파견하고 있으며 이는 공적개발원조의 하나인 해외긴급구조활동에 해당하는 것으로 주로 소방대원과 의료인들이 활동하고 있다. 따라서 이 연구는 글로벌 재난 역량 개발 프로그램이 응급구조과와 간호학과 학생들에게 어떠한 영향을 미쳤는지 살펴보고 이를 통해서 추후 학부교육에 대한 개선방안을 모색하고자 한다.

**연구 방법** : 본 프로그램은 ICN에서 제시한 "재난간호역량체계"를 기본 틀로 4개 영역 10개 도메인으로 역량을 구분하여 프로그램을 설계하였다. 프로그램은 2013년 8월 12일부터 23일까지 2주간 사례학습, 토론, 전문가 특강, 태국 카렌지역 현지방문 등 다양한 방식으로 운영되었으며 참석학생은 총 18명이었다. 프로그램에 대한 만족도는 5점 척도로 측정하였고, 국제재난역량 지식수준은 10점 척도로 측정하여 프로그램 전후 지식수준을 비교분석하였다. 그 외 심층 인터뷰를 진행하여 재난에 대한 학생들의 태도 변화를 보았다.

**연구 결과** : 프로그램 만족도는  $4.50 \pm 0.51$ 로 매우 높았으며 국제재난관련 지식의 변화는 전체 항목 평균  $2.18 \pm 0.68$ 에서  $6.30 \pm 0.84$ 로 상승하였다( $p < .001$ ). 그 외 프로그램의 신청 동기는 다중응답으로 다양한 경험을 쌓기 위해서(14명), 해외봉사에 대한 관심(11명), 국제기구에 대한 관심(7명) 등으로 조사되었다.

**결론** : 첫째, 응급구조과와 간호학과 학부 교육과정에서 국제재난에 대한 이해를 증진할 수 있는 교과목이 개설되거나 기존의 유사한 과목에서 글로벌 환경에 대한 조기 이해가 선행되도록 하여 국제사회에 진출하고자 하는 학생들에게 다양한 진로를 제시해 주어야 한다.

둘째, 국제재난관리에 대한 교육은 학습효과를 증진하기 위해서 시뮬레이션 학습 또는 재난현장을 방문한 현장학습 등 다양한 방법의 적용이 고려되어야 국제사회 및 문화에 대한 이해도모와 태도변화 그리고 어학 학습의 중요성을 자각하게 할 수 있다.

셋째, 학부 단계에서 국제재난교육을 통해서 이해를 도모하고 진로와 관련한 다양한 정보습득 및 참여기회가 증진되도록 하여 졸업 후 실무에 적용이 가능하도록 교육하는 것이 필요하다.

**국문중심단어** : 글로벌 재난 역량, 재난, 태도, 지식

## I . Introduction

Korea is the only country changed from the recipient country to donor country in UN history, which makes our government put more stress on official development assistance (ODA). Korea joined the organization for

economic cooperation and development (OECD) and development assistance committee (DAC) in 2010. Because Korea government has focused on ODA projects since this year, practical budgetary is allocated for various ODA projects including the emergency relief for international disaster. Korea has dispatched Korean international search and

rescue team and Korea disaster response team (KDRT) to major international disaster sites since 1990. Most of the team members are firefighters or ex-soldiers from special troops and medical personnel to meet the disaster response for saving lives of survivors through early rescue, emergency treatment and transfer to appropriate medical institutions. Today the complex disaster gets more spotlight from worldwide nations to solve or lessen the deep rooted problems such as long lasting poverty, drought and so on. The basic philosophy to help other nation's disaster is to implement humanitarianism and global policy to secure own country's interests and contribute to industrial activation.

For this reason, it is necessary to make classes on disaster management or disaster nursing for undergraduate program for the purpose of preparing of students' competency to understand this issue, gathering diverse information and applying to their career ladder plan. Some undergraduate programs open an independent class and others open several classes superficially. On the other hand, there are many humanitarian non-government organizations (NGO), and those NGOs have their own disaster related educational curriculum or participate in international education center in order to improve their specialty [1]. However, it is not easy to make undergraduate students experience disaster response, but strategic approach should be considered to enhance students' self-directed knowledge and attitude on international disaster response.

Regarding research findings on this issue,

there are very few studies published that are focused on certain national disaster response, disaster administration system, and post-traumatic stress management for the firefighters [2-5]. Shin [6] suggested that Korea has many natural and human disasters year around, that needs to be taken care by local emergency medical service system according to local disaster types. It means that there is less importance to educate undergraduate students for international disaster response [7-8]. There are several research findings which were focused on the development of educational competencies for disaster and public health emergencies [9-13].

For paramedic student program [7,13], disaster medicine or disaster management subject are open in most university programs but it does not have any international disaster response. It is quite different among various nursing programs for nursing student. Some nursing programs have disaster nursing and global nursing as the elective subjects, but other programs do not have those subject at all in their 4-year curricula [14,15]. Little research of this subject has been done so far, quantitative and qualitative approach were used to identify participants' changes in this study.

The purpose of this study was to assess change of students' knowledge and satisfaction after finishing a special international disaster response program. This study will contribute to understand the importance of education on disaster phases or cycle including surveillance, preparedness, response, early

recovery, resilience and long term development.

## II. Methods

### 1. Design

The purpose of the study was to examine changes in disaster competency and satisfaction after students completed the 2 weeks intensive course. A quasi-experimental study using surveys was conducted using a pre-test, post-test design. Also focus group methods were used.

### 2. Setting and samples

Undergraduate students in nursing and paramedic were targeted for enrollment. First of all, notices were posted on the university electronic bulletin boards describing the program and inviting students to apply. After the interview, a total of 19 students were finally selected which were 13 nursing students and 6 paramedic students. However one student dropped out from the program as a result of being absent from school and 18 students took part in the survey.

To verify if the sample size was sufficient, Cohen's formula (1992) was used, with one group. According to Cohen's standard ( $d=0.2$ , small;  $d=0.5$ , medium;  $d=0.8$ , large) an alpha at .05 was set as the significant level,  $d=.80$  for the effect size, and 0.80 for the statistical power ( $1-\beta$ ). Twenty-two participants were needed for meeting the requirement, however the whole number of participants of this special program was 18 which showed .74

power.

### 3. Developing a competency-based disaster response education program

The "Disaster Response Education Program" was structured as two weeks intensive course through a combination of lectures, case studies and field trips. For designing the program "ICN Framework of Disaster Nursing Competencies" [16] was used. The ICN disaster nursing competencies were composed of four categories with 10 domains. The first category was prevention competencies including two domains which were risk reduction, disease prevention and health promotion; policy development and planning. The second category was preparedness competencies with three domains which were communication and information sharing; education and preparedness; ethical practice, legal practice and accountability. The third category was response competencies with four domains of care of the community; care of individuals and families; psychological care; care of vulnerable population; The fourth category was recovery rehabilitation competencies with one domain of long-term recovery of individuals, families and communities [16].

Lectures, case studies and field trip methods were used for helping students to achieve the knowledge and skills necessary for developing the competencies in 10 domains. In the first week, we focused on the lectures and case studies for acquiring knowledge and in the second week, Thailand field trip program was operated. For the case study, five scenarios were provided daily as homework

and students were assigned in 4 groups to discuss the issues and do a presentation (Table 1). Moreover, four lectures were provided with the concepts of definition and types of disasters, refugee issues, Disaster cycle, ethical decision making in a disaster, Health issues of displaced populations and community health assessment(resource & needs). Last, during the field trip, UN ESCAP, Bangkok Refugee Center, Thailand Burma Border Consortium and Karen Village were

visited for the intension to experience the real field condition (Table 2).

#### 4. Disaster competency questionnaire

A pre-post disaster competency survey was used to measure the students' perceptions of change in their disaster competency. Students were asked to rate their ability based on a 10 point Likert scale which ranges from 1 point (voice) to 10 points (expert). They completed the survey prior to the program during the

Table 1. Case study related to the disaster competencies

Scenarios	Discussion Issues
1. Volcano erupts in the area of Sorotano	If you are the project leader for Blue Care, and is directed to lead a team to East Island: Describe your preparation process. Include your ideal team members, necessary resources. (Provide explanation why you have chosen those team members, and why you would need those resources) Describe first two weeks of activity. Include a timeline, priority and reasoning behind your priorityzation. Describe health management plan and techniques for refugees living in shelter. Describe their needs, risks, and concerns that you have to take into consideration for running a refugee shelter. Draft a 6 month shelter management plan based on what you have mentioned in 3.
2. A news "For refugee, the price of dignity"	Discuss about the difference of Somali & Iraqi refugees camp What is the UN policy direction
3. See the movie "The Impossible"	The movie was a story of a tourist family in Thailand caught in the destruction and chaotic aftermath of the 2004 Indian Ocean tsunami. During the disaster what kind of difficulties the family suffered and how it influence the family.
4. Introduce Korea refugee NGO* "NANCEN"†	Discuss about refugee human dignity
5. A news "For Haitians, Cholera Remains a Major Public Health Problem"	Due to living conditions for earthquake survivors and the general population that help enable the spread of cholera in Haiti, the disease remains a lethal threat two years after the epidemic first appeared in the country. What is cholera How to improve the living environment to prevent or minimize the spread of the infectious disease

\*NGO: Non-governmental organization

†NANCEN: The name of NGO which is the center for refugee rights in South Korea

Table 2. Alignment of disaster competencies with the teaching and learning activities

ICN* disaster competencies	Domains	Methods		
		Case study	Lecture	Field trip
Prevention	1) Risk reduction, disease prevention, and health promotion		Definition and types of disaster and refugee disaster cycle	
	(2) Policy development and planning			
Preparedness	(3) Communication and information sharing	Scenario 1 Scenario 2 Scenario 3	Ethical decision making in disaster	UN ESCAP <sup>†</sup>
	(4) Education and preparedness			
	(5) Ethical practice, legal practice, & accountability			
Response	(6) Care of the community	Scenario 4	Health issues of displaced populations	Bangkok Refugee center Thailand Burma Border Consortium
	(7) Care of individuals & families			
	(8) Psychological care			
	(9) Care of vulnerable populations	Scenario 5		
Recovery–rehabilitation	(10) Long–term recovery of individuals, families, & communities		Community health assessment (resource and needs)	Karen village

\*ICN: International council of nursing

<sup>†</sup>UN ESCAP: United nations economic and social commission for Asia and the Pacific

orientation and immediately after the two-week course was completed. This questionnaire was self-developed based on a review of online disaster training evaluation reports and ICN disaster competency framework [16]. In the study, the questionnaire was composed of 8 items and reported Cronbach's  $\alpha$  value as .87 respectively.

## 5. Satisfaction questionnaire

Students were asked to complete the questionnaire immediately after the course was finished. The questionnaire was developed by Chan [17] and measures the participants' satisfaction toward the special international

disaster response program. The satisfaction questionnaire was composed of eight items of each score as 5 point Likert scale which ranges from 1 point (strongly disagree) to 5 points (strongly agree). The reliability of Cronbach's  $\alpha$  value was .77, In the study reported here, the Cronbach's  $\alpha$  value was .69 respectively.

## 6. Focus interview

The post program survey consists of two additional open-ended questions designed to provide a more in-depth understanding of ways about the positive and negative aspects of the students' learning experience. The

interview was done during the post-test survey if the students agreed to participate. Content analysis of the response to the two open-ended questions was done.

## 7. Ethical consideration

For the ethical issue, all the participants were given informed consent and their confidentiality and anonymity were protected. The personal information including name, department and grade was not required to answer in this questionnaire.

## 8. Data collection and Measurements

Data was collected in August, 2013. The pre-test was conducted before the program and the post-test was conducted after. Descriptive statistics were used for items on

the demographic survey to provide students' profile. Measures of Mean and standard deviations were calculated on all surveys. The Wilcoxon signed ranks test was used to compare the disaster competency before and after the program. A p value of  $<.05$  was considered significant. Reliability testing was conducted for the disaster competency and satisfaction. SPSS version 18.0 was used for the data analysis.

## III. Results

### 1. Demographic characteristics of participants

A total of 18 students participated in the

Table 3. Demographic Characteristics of the Participants (N=18)

Characteristics	Categories	n (%)
Grade	1st year student	6 (33.3)
	2nd year student	9 (50.0)
	3rd year student	3 (16.7)
Gender	Male	5 (27.8)
	Female	13 (72.2)
Department	Nursing	12 (66.7)
	EMT* -paramedic	6 (33.3)
Reason for applying (multi responses)	Gaining experience	14 (25.9)
	Interested in international volunteering	11 (20.4)
	Interested in international organizations and NGOs †	7 (13.0)
	Traveling to thailand	6 (11.1)
	Related to the major	5 ( 9.3)
	Help in finding job	4 ( 7.4)
	Professor's recommendation	4 ( 7.4)
Improving english	3 ( 5.6)	

\*EMT: Emergency medical technician

† NGO: Non-governmental organization

Table 4. Effects of the program on knowledge changes (N=18)

Disaster competency	Pre Mean±SD	Post Mean±SD	Wilcoxon's signed ranks test Z-value	p
Categorize disasters by type	2,56±0,92	6,39±1,72	-3,74	.000
List components of disaster teams and processes	2,67±0,08	5,89±1,49	-3,75	.000
Prioritize and share information during crisis	1,56±0,62	6,83±1,34	-3,75	.000
Define processes and personal responsibilities during disaster	2,22±0,88	6,50±1,04	-3,77	.000
Recognize who and when to contact for backup	2,11±1,02	6,78±0,88	-3,77	.000
Identify situations where extra help is needed	2,17±1,04	6,61±1,24	-3,77	.000
Demonstrate effective communication with clients and staff	1,83±0,71	5,67±1,33	-3,74	.000
Demonstrate long term recovery of individuals, families and communities	2,33±1,14	5,72±1,07	-3,74	.000
Overall score	2,18±0,68	6,30±0,84	-3,73	.000

Table 5. Satisfaction of the international disaster response program (N=18)

Items	Mean±SD
This course has usually been run in a well-organized manner	3,94±0,54
I have found the classes stimulating	4,22±0,55
There were many opportunities for active participation in this course	4,72±0,46
The workload of this course is at an appropriate level	4,11±0,58
The teaching and learning activities have helped me to achieve the course's learning outcomes,	4,17±0,71
The assessment has been fair and reasonable,	4,44±0,51
The teachers are willing to assist me when I encounter learning difficulties,	4,17±0,71
Generally speaking, I am satisfied with this course,	4,50±0,51

survey, from them, first year 33.3% (6), 2nd year 50.0% (9) and 3rd year 16.7% (3). The majority of students were women (72.2%, 13), and 12 nursing students (66.7%) and 6 paramedic students (33.3%). The majority of students were applying the program for gaining experience (25.9%), interested in international volunteering (20.4%), interested in international organizations/NGO (13.0%) and so on (Table 3).

## 2. Disaster competency

18 students completed both the pre- and

post-competency survey. The overall pre-test score was 2.18±0.68 and post-test score was 6.30±0.84. The students made statistically significant gains in all competency items (p<.001) as well as the overall score (z=-3.73, p<.001) (Table 4). Competencies where students improve the most were prioritizing and sharing information during crisis, recognizing who and when to contact for backup, identifying situations where extra help is needed, processes and personal responsibilities during disaster.

### 3. Satisfaction toward the program

The general satisfaction of the program was quite high which showed mean score of  $4.5 \pm 0.51$ . The most satisfied items were to have many opportunities for active participation in this course ( $4.72 \pm 0.46$ ), and assessment methods ( $4.44 \pm 0.51$ ), stimulating ( $4.22 \pm 0.55$ ), learning outcome ( $4.11 \pm 0.58$ ) as shown below (Table 5).

### 4. Focus interview

Content analysis of the response to the two open-ended questions revealed the students' positive learning experiences. The students stated that the benefit from the international disaster response program was to gain knowledge about the types of disasters and management processes and to understand the role of international organization and the NGO. They also stated to have the opportunity for visiting refugee camp and experiencing the lives of refugees. Moreover, they considered case study as a powerful strategy to motivate learning that provided broad coverage of the kinds of critical issues they would anticipate in disaster situations. Most of them changed their understanding of cultural diversity and difference profoundly, and they were very interested in global health issues on long-lasting disaster-driven refugees. It could be the result of the field trip through visiting UN organization and international NGO, meeting refugees and community leader located in Burma-Thailand border [13]. However, difficulties in understanding English lecture, the cancelation of some programs because of the

weather condition and short period of the program still remained as problems.

## IV. Discussion

Student satisfaction on this program shows that students' interests in learning disaster management and drill very high like Kang's [7] study. Since some programs included English lectures, it provided a motivation for learning English to the students who wish to work abroad.

The motivation that supports the students' program is understanding of international organization or looking for their future career development, similar result of Kang's study in 2012 [7]. This means that Korean undergraduate students are highly motivated to participate at global society and they are eager to prepare to work internationally through applying their major and specialty right after their graduation.

In terms of the operation of the special education program, it is recommended to have a table-top simulation if it is not available to have a field experience [18–21]. One third of the students who participated in the program would like to extend the program time to two weeks due to the short time operated in the program. In this study, as reflected in the curriculum of subjects that have been given credit, no grade special education programs operated separately. Therefore, if 2–3 credit courses with the theory and practical training are operated, the courses within 10 days are

able to finish,

There is an evidence of improvement of educational effect when the students had real practice training or simulation practice for disaster management to medical students [12,19,20]. In Korea, there are some paramedic and nursing programs which use simulation practice for this subject in collaboration with fire service department and triage training[8]. But usually other programs are not using those methods to their setting and just doing traditional lectures actually have limitation for students to understand disaster management nationally and internationally.

The most prominent competency change before and after program is that students became open minded to different nations' cultures. It reveals that if we just visit post disaster site or disaster similar environment, students can observe people's way of living and coping to recover from the disaster, which itself provides learning experience.

Another significant change is that students lively access those organizations introduced in the program because they are related to students' interests. Nowadays, all of the undergraduate students have computer literacy, however information learning is more essential in the learning effect. Also, to provide framework to self-directed learning on necessary information is the role of professors.

This study was a special program that mainly conducted with theory and practice in Karen village of Thailand refugee camps by visiting students of paramedic and nursing of Cheju Halla University during the summer

vacation. The research was difficult to the subjects because half of the expense was supported by the student and the participants were limited to 20 people.

## V. Conclusion

Korea is a member of OECD / DAC countries and in Korea, Korea International Cooperation Agency (KOICA) or the Korea Foundation for International Healthcare (KOFIH) has dispatched a Korean disaster response team in the event of overseas disaster. Key personnel are doctors, nurses, emergency medical technician, pharmacist and administrative support workers.

Therefore, providing an opportunity to advance the international community for paramedic and Nursing students is to increase their understanding of international disaster even though unified educational competency goal is not developed yet. There are only several findings for the development of educational core competencies for disaster and public health emergencies [22].

We suggest the following on the basis of the results and discussion obtained through this study to accomplish this purpose.

First, if an international disaster education program for the students of paramedic and nursing is reflected in their education curriculum with regard to education and the students possess a practice field such as long-term and post-disaster site, either directly or indirectly, or similar simulated disaster site in

the progress of the actual education, it may represent a good training effect for them.

Second, it has to be properly prepared to educate the disaster to be predicted it's growth at home and abroad with various teaching methods such as on-site experience, table-top exercise in the classroom and simulation studies at the undergraduate level at all disaster phases.

Third, it is expected to be a work integrated learning if the students are ready to learn a new international stage to promote further adaptability of the field in their undergraduate period rather than to learn a new international disaster concept at clinical practice or at the fire disasters after graduation.

## References

1. KOICA. A study on long-term education and training strategy for building competency of humanitarian assistance. KOICA 2013.
2. Shin DM, Lee IS, Baek ML. Chemical disaster of methyl isocyanate leakage. *Korean J Emerg Med Ser* 1999;3(1):7-19.
3. Baek ML. Coping methods related with post-traumatic stress types for the fire fighters who experienced the Dae-gu subway fire disaster. *Korean J Emerg Med Ser* 2007;11(3):5-15.
4. Kang BW. A Study on the administration system for disaster relief in Korea. *Korean J Emerg Med Ser* 2001;5(1):133-45.
5. Yoo IS, Kim HJ, Kim C, Kim JS, Cho JP. Disasters within hospital—status of Korea and proposal of countermeasures. *J Korean Soc Emerg Med* 1995;6(2):420-7.
6. Shin DM, Lee IS, Baek ML. Analysis of injury types in Korean disaster. *Korean J Emerg Med Ser* 2004;8(1):179-87.
7. Kang SJ. A Development of a competency program for undergraduate students in disaster preparedness and response. Presented at the 4th International Conference on Disaster Nursing. 2011;167-74.
8. Kim SS, Lee IS, Baek ML. A study on the curriculum of emergency medical technology in Korea. *Korean J Emerg Med Ser* 2009;13(2):17-59.
9. Markensen D, DiMaggio C, Redlener I. Preparing health professions students for terrorism, disaster, and public health emergencies: Core competencies. *Acad Med* 2005;80(6):517-26.
10. Subbarao I, Hsu EB, Burkle FM Jr, Bostick A, James JJ. Building a fundamental framework for disaster education and training. *Ann Emerg Med* 2009;53(6): 837-8.
11. Kaji AH, Coates W, Fung CC. A disaster medicine curriculum for medical students. *Teach Learn Med* 2010;22(2):116-22.
12. Kaji AH, Coates W, Fung CC. Medical student participation in a disaster seminar and drill: Brief description of activity and report of student experiences. *Teach Learn Med* 2010;22(1):28-32.
13. Rock LF, Corbin CA. Social work students' and practitioners' views on the need for training caribbean social workers in disaster management. *Int Soc Work* 2007; 50(3):383-94.

14. Jennings-Sanders A, Frksch N, Wing S. Nursing students' perceptions about disaster nursing. *Disaster Manag Response* 2005;3(3):80-5.
15. Littleton-Kearney MT, Slepski LA. Directions for disaster nursing education in the United States. *Crit Care Nurs Clin North Am* 2008;20(1):103-9.
16. World Health Organization and International Council of Nurses. ICN framework of Disaster nursing competencies. Geneva, Switzerland, 2009.
17. Chan SS, Chan WS, Cheng Y, Fung OW, Lai TK, Leung AW et al., Development and evaluation of an undergraduate training course for developing international council of nurses disaster nursing competencies in China. *J Nurs Scholarsh* 2010;42(4): 405-13.
18. Williams J, Nocera M, Casteel C. The effectiveness of disaster training for health care workers: A systematic review. *Ann Emerg Med* 2008;52(3):211-22.
19. Veenema TG. Expanding educational opportunities in disaster response and emergency preparedness for nurses. *Nurs Educ Perspectives* 2006;27:93-9.
20. Saiboon IM, Jaafar MJ, Harunarashid H, Jamal SM. The effectiveness of simulation based medical education in teaching concepts of major incident response. *J Social and Behavioral Sci* 2011;18(0):372-8.
21. Elwell D, Junker S, Sillau S, Aagaard E. Refugees in denver and their perceptions of their health and health care. *J Health Care Poor Underserved* 2014;25(1):128-41.
22. Association of Schools of Public Health. Global health competency model. Association of Schools of Public Health, 2011.