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Name of the University, Hospital, Research Institute, Academy or Ministry

Research Institute of Nursing Care for People and Community

Name of the Division, Department, Unit, Section or Area

University of Hyogo

City Akashi **Reference Number** JPN-77

Title WHO Collaborating Centre for Nursing in Disasters and Health Emergency Management

Report Year 06-2014 to 06-2015

1. Please briefly describe the progress made in the implementation of your agreed workplan as WHO collaborating centre during the past 12 months (or the reporting period listed above). Please report on how each workplan activity was implemented, if any outputs have been delivered, if any results have been achieved and if any difficulties have been encountered during this time. If an activity has previously been completed, has not started yet, or been placed on hold, please indicate this.

Activity 1

Title: To identify the conditions of daily living and health among survivors including vulnerable people.

Description: Research activities with longitudinal study will be conducted with teachers/faculties in Japan or other countries. The survivors of the Earthquake in Japan and China will be asked to participate for the research.

This paper reports the findings from two health surveys which are still currently under way in Miyagi Prefecture and the health survey our institute conducted in the temporary housing in Kesenuma City, Miyagi Prefecture. The latter health survey results will be published in Health Emergency and Disaster Nursing (HEDN).

1. Health surveys currently under way in Miyagi

In the affected areas of the Great East Japan Earthquake, various types of surveys have been conducted of the survivors of the disaster. The Tohoku Medical Megabank Organization of Tohoku University and the Health Promotion Division, Department of Public Health and Welfare of Miyagi Prefectural Authority have been investigating the people's health in the area. These surveys suggest that there are a certain number of people with chronic diseases, particularly heart disease; their health conditions do not change over time; opportunities to do physical activities tend to decrease in their daily living, etc.

1) The conditions of daily living and health among survivors, which are known from a community-based cohort survey by the Tohoku Medical Megabank Organization

The Tohoku Medical Megabank Organization started the community-based cohort survey in May 2013. The survey has been conducted at the sites for specified medical examination in 10 cities and towns, and 7 regional support centers in Miyagi.

(1) Survey

Lifestyle and mental health data (CES-D, K6) were collected using a questionnaire. At the same time, blood and urine samples were collected for physiological examination. The evaluation was conducted on data from 3,744 people collected between May 2013 and December 2013.

(2) Survey results

It was reported that the evaluation of the data on lifestyle and the physiological examination results revealed the following 4 points:

[1] There were a certain number of people with decreased renal function, which is an index of heart disease.

[2] A high ratio of young people exhibited a higher blood allergy index (IgE).

[3] The estimated average salt intake was high with 12g/day in men and 10g/day in women, regardless of age.

[4] About 7% of middle aged men were heavy alcohol drinkers who drank 3 gō (unit of volume, 540 mL) or

more per day.

The evaluation of the data obtained from the questionnaire on mental conditions revealed the following 3 points:

[1] Depressive tendency was seen in 27% (CES-D: 16 points or greater) of the respondents.

[2] Depressive tendency was higher than the national average for men in their 20's to 30's and women in their 40's to 50's.

[3] In the K6 test which investigated mental health such as depression and anxiety, the percentage of the people with mental health problems was twice as high as the national average.

(3) The conditions of daily living and health among survivors, which are known from the community-based cohort survey by the Tohoku Medical Megabank Organization

The survey revealed that there is a certain number of people with heart disease and decreased renal function and also people who need consultations on daily salt intake and alcohol drinking in the area. The survey also revealed that the percentage of people with depression and anxiety was higher than the national average.

This tendency is particularly evident in men in their 20's to 30's and women in their 40's to 50's, which needs attention.

2) The conditions of daily living and health among survivors, which are known from the health survey on residents of the emergency temporary housing (prefabricated houses) by the Health Promotion Division, Department of Public Health and Welfare of Miyagi Prefectural Authority.

The Health Promotion Division, Department of Public Health and Welfare of Miyagi Prefectural Authority has conducted an annual health survey on occupants of the emergency temporary housing since September 2012. The survey was conducted in 10 cities and towns in 2012, 9 cities and towns in 2013, and 8 cities and towns in 2014 in Miyagi.

(1) Survey

Data on personal attributes, health condition (physical and mental health, status of physical activities and social activities, etc.) were collected using a questionnaire. The 2012-year survey was conducted from September to December, the 2013-year survey from September to November, and the 2014-year survey from September to November. The data were collected from 21,450 residents in 2012, 16,728 residents in 2013, and 13,070 residents in 2014.

(2) Survey results

[1] The survey results indicated that 16,576 residents (80.6%) rated their physical condition as "very good" or "fairly good" in 2012, 13,110 (81%) in 2013, and 10,056 (80%) in 2014. On the other hand, 3,978 residents (19.3%) rated their physical condition as "not very good" or "very bad" in 2012, 2,899 (18.1%) in 2013, and 2,376 (19%) in 2014.

[2] The number of residents with a history of present illness was 10,353 (52.0%) in 2012, 8,195 (52.0%) in 2013, and 6,746 (55.1%) in 2014.

[3] The survey showed that top 3 most common diseases were hypertension, diabetes, and heart disease over the 3 years of the survey. The details are as follows:

2012 Hypertension, 5,846 (27.3%) Diabetes, 1,871 (8.7%) Heart disease, 963 (4.5%)

2013 Hypertension, 4,729 (28.3%) Diabetes, 1,478 (8.8%) Heart disease, 752 (4.5%)

2014 Hypertension, 3,962 (30.3%) Diabetes, 1,247 (9.5%) Heart disease, 639 (4.9%)

[4] The K6 survey shows that the residents with 13 points or higher, indicating that they are considered to have a severe mental illness, accounted for 9.5% of the total population surveyed in 2012, 8.3% in 2013, and 8.2% in 2014. Women showed a higher rate overall.

[5] The percentages of the residents who had difficulties in sleeping were 15.3% in 2012, 16.0% in 2013, and 16.9% in 2014. Women showed a higher rate overall.

[6] The percentage of residents who drank alcohol from morning or afternoon were 1.8% in 2012, 2.2% in 2013, and 2.1% in 2014. Men showed a higher rate overall, particularly men in their 50's and 60's.

[7] The number of residents without appetite were 749 (3.5%) in 2012, 548 (3.3%) in 2013, and 431 (3.3%) in 2014. The number of the residents who lost weight were 2,692 (12.6%) in 2012, 1,876 (11.2%) in 2013, and 1,503 (11.5%) in 2014. The number of the residents who gained weight were 4,246 (19.8%) in 2012, 3,326 (19.9%) in 2013, and 2,389 (18.3%) in 2014.

[8] The number of the residents who replied that opportunities to do physical activities had "lessened greatly" after the earthquake were 3,556 (18.8%) in 2012, 3,236 (20.5%) in 2013, and 2,393 (20.5%) in 2014. The percentage of residents who replied that opportunities to do physical activities had "lessened greatly" or

"lessened" came to about 50%.

[9] The number of the residents who participated in events were 8,098 (42.8%) in 2012, 6,922 (43.9%) in 2013, and 5,338 (44.3%) in 2014. The survey revealed that residents in their 20's participated in events least of all age groups, and the ratio tended to increase with age.

(3) The conditions of daily living and health among survivors, which are known from the health survey on the residents of the emergency temporary housing (prefabricated houses) by the Health Promotion Division, Department of Public Health and Welfare of Miyagi Prefectural Authority

The survey results indicated that about half of the residents of the earthquake-stricken area have diseases, but about 80% of them replied that their health condition was good. Hypertension, diabetes, and heart disease are the 3 most common diseases affecting residents of the area, and about 30% of them suffer from hypertension.

From the K6 survey, it was found that 8 to 9% of the respondents had a condition considered to be equivalent to having a "severe mental disorder." The ratio does not change with time, and women tended to show a higher ratio. It was also found that 15% to 17% of them have difficulties in sleeping. This is more common in women, and the ratio tends to increase each year.

About 2% of the respondents need consultation on their drinking habits. Men in their 50's to 60's especially need attention. Around 3% of the respondents replied they have no appetite, around 12% lost body weight, while nearly 20% gained body weight. These changes are not time-dependent.

About 50% consider that opportunities to do physical activities decrease every year. Approximately 40% participate in events, and the ratio increases each year as a whole. Over 3 years, the respondents in their 20's tended to participate in the events least of all age groups.

3) The conditions of daily living and health among survivors, which are known from the two health surveys under way in Miyagi

Based on the above two surveys, it was found that a certain number of people have chronic diseases, particularly heart disease. The survey results indicate that there is room for improvement to prevent worsening of chronic disease by providing guidance on salt intake and alcohol consumption as well as increasing opportunities to do physical activities. Moreover, since higher ratios of women have stress and difficulties in sleeping, it may be an effective strategy to offer a consultation service by a specialist targeting only women. A time-dependent change is not observed in health condition. However, since the ratio of people participating in events has been increasing, organizing more events where people can do physical activities would increase opportunities to participate and to prevent worsening of chronic diseases.

REFERENCES

Department of Health and Welfare, Miyagi Prefectural Government, (2014), Health Survey for temporary housing residents,

<http://www.pref.miyagi.jp/soshiki/kensui/oukyuukasetsujutaku.html>

Tohoku Medical Megabank Organization, (2014), Press release,

http://www.tohoku.ac.jp/japanese/newimg/pressimg/tohokuuniv-press_20140227_01.pdf

The conditions of daily living and health among survivors, which are known from the health survey on the residents of the temporary housing in Kesenuma city.

This survey reports will be published in Health Emergency and Disaster Nursing (HEDN).

Survey of the Health and Living Conditions of the Survivors Living in Temporary Housing Two Years after the Great East Japan Earthquake

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ABSTRACT

Objective: To clarify the health and living conditions of the survivors living in temporary housing two years after

the Great East Japan Earthquake.

Method: From December 1 to December 28, 2012, we visited all the temporary housings in District A and conducted a semi-structured questionnaire survey on 460 residents aged 18 or over. They were asked either to complete the questionnaire by themselves or to answer the questions in an interview. In the survey, the participants were asked about the following items: their attributes (age, gender, number of housemates, present illness, situation of hospital visitation, jobs before and after the earthquake disaster, condition of damage to home, and future address), living conditions (drinking/smoking habit, appetite, consumption of snacks, sleep, methods of refreshment, persons to consult, finding joy in daily life, and participation in community activities), and health conditions (subjective symptoms, variation in body weight). Moreover, their health-related QOL was also evaluated by using the MOS 36-item Short Form Health Survey version 2 (SF-36v2 in Japanese). SPSS statistics 17.0 was adopted for data analysis using the following methods: descriptive statistics, the t-test, one-way analysis of variance, and the χ^2 test.

Result: Of the residents, 188 responded to the questionnaire (response rate: 40.9%). Valid responses were obtained from 183 respondents (valid response rate: 41.4% in males, 58.5% in females). Their mean age was 66.3 ± 15.7 years, and those aged 65 years old and over accounted for 65%. Their morbidity rate was 72.5% and those suffering lifestyle related diseases (stroke, hypertension, heart diseases, diabetes and hyperlipidemia) accounted for 58.7%. In the evaluation of damage to their houses, 97.8% reported their houses were completely destroyed, and 66.3% have not decided where to move in the future. Those who quit or lost their jobs after the earthquake disaster accounted for 45.7%. In the evaluation of their living conditions, 21.3% complained of insomnia. Nearly a third (32.8%) consumed alcoholic beverages and the drinking rate was significantly higher among males. About 70% had hobbies or activities to refresh themselves, and 59.1% participated in recreation or community programs. They complained of symptoms including lower back pain, wrist/ankle pain and constipation. According to the results of measurement of health-related QOL, compared with Japanese standard scores, the physical component summary (PCS) score was lower, while the mental component summary (MCS) score was higher among the respondents. According to the data by generation, all the QOL subscale scores among those in their 70s were higher than the Japanese standard scores.

Conclusion: The survivors living in temporary housing in District A continued to face ordinary health problems/issues after the earthquake disaster. The fact that the health-related QOL scores among those in their 70s were higher than the Japanese standard scores clearly demonstrated that this age group made efforts to maintain their connection with their neighbors and local community and to live positively despite their experience of the disaster.

Keyword: Natural disaster, Survivors living in temporary housing, Health-related quality of life (HRQOL), Short Form-36 version 2 (SF-36v2)

Activity 2

Title: To validate existing guidelines for vulnerable people and nurses who care for them.

Description: The existing guidelines including for elderly, ordinary people, family with children, pregnant & postpartum women, client with chronic illness, nurses taking care of survivors, and others will be validated in Japan and Asian countries.

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(Research Purpose) The validation of the effectiveness/validity of the guideline for people with special needs during a disaster which was utilized during the Great East Japan Earthquake was conducted and was refined.

(Research Method) Interviews using semi-structured questionnaire

Period: December 2011 to February 2012

Research Cooperator: Nurses who conducted support activities during the Great East Japan Earthquake

Examined Guideline: The three kinds of guideline; Care for elderly (in shelter and in temporary housing) and guideline for nurses to conduct the health care profession activities.

(Ethical Considerations) The gist and participation of the research (and that it was the free will of the cooperator to participate) was explained to the cooperator in writing and by verbal means and their consent was obtained. In addition, to conduct the research, approval was obtained from the College of Nursing Art and Science, University of Hyogo/Regional Care Research and Development Laboratory Research Ethics Committee.

(Results) There were seven cooperators of the research, and they were conducting assistance of health

checks and making rounds of treatment at a shelter in Miyagi Prefecture.

I. Guideline of Care for Elderly (in Shelters and in Temporary Housing)

The guideline of care for elderly was written the issues of the elderly and how to cope with those issues for nurses who would do support activities in shelters and temporary housing. Regarding this guideline, there were four good points shown below, and four points of improvement were raised.

Good Points:

- (i) It is very well organized.
- (ii) The assessment and coping methods can be seen within the spread and it is easy to follow.
- (iii) There are no repetitious expressions.
- (iv) It can be read in a short amount of time.

Points of Improvement:

- (i) It would be convenient to have one book containing all of the care at a shelter.
- (ii) Content that is more specific would be good, in particular, examples of talking to people.
- (iii) It can be read in a short amount of time, however, it can be read with ease, and it does not leave a lasting impression.
- (iv) It would be good to mention items regarding personal information protection.

1) Guideline of Care for Elderly (In Shelter)

This guideline was written each of the features of the elderly, content of the assessment, and caring methods for foods, excretion, cleanliness, occurrence of food poisoning, decrease in activity, deterioration of health condition, development of respiratory infections, mental health, risk of delirium symptoms, Exacerbation of dementia symptoms, Isolation in terms of information, and problems surrounding transfer from a shelter.

(1) Foods

Content where additional explanation is necessary

- (i) The balance of the meals was bad, but because vegetable juice and green juice were arranged which was good, it should be added as a specific example.
- (ii) The meals were consist of hard rice which was cooked by the self-defense forces, and since there were the elderly who wanted to eat foods that are soft, consideration for the hardness of meals as an individual case should be added.
- (iii) There were opinions saying there are too many sweets that were distributed, and although nutritional balance needs to be taken into consideration. And with opinions saying this point should be addressed further, "as nutritional instruction, the nurse should instruct the elderly not to eat too much sweets" should be added.

(2) Excretion

Content with validity

- (i) Regarding toilet maintenance and its coping methods, the same acts as described were being committed, therefore, this is valid.

Content where additional explanation is necessary

- (ii) Because there was an onset of cerebral infarction within the shelter, for the prevention of cerebral infarction, it should be added that assessment of dehydration should be conducted sufficiently.

(3) Cleanliness

Content where additional explanation is necessary

- (i) There was a male elderly who had not changed after light incontinence and not noticing. As a coping method, not only is the securing and providing of underwear necessary but asking them verbally whether they want to change should be added.

(4) Occurrence of Food Poisoning

Content with validity

- (i) Since saving of leftover food and distributed food was seen, the assessment and the management of leftover food and storing methods is valid.

(5) Deterioration of Health condition

Content with validity

- (i) Since the need for health checks for people with high blood pressure, dehydration, or diabetes was felt once again during activities in the shelter, this is valid.

Content where additional explanation is necessary

- (i) Since there were many people with high blood pressure and elderly with circulatory diseases, information regarding a periodic check, taking medicine, symptoms of a rising blood pressure should be added as a

coping method along with consultation with a doctor.

(6) Development of Respiratory Infections

Content where additional explanation is necessary

- (i) With just the securing and supplying of heating equipment, there are cases where the equipment is unobtainable, therefore, the ideas for when there is a lack of goods (for example, related to heat, the laying of a vinyl curtain or cardboard on the floor, spreading of newspaper, etc.) in specific examples should be added.
- (ii) For the prevention of the spread of respiratory infection, the communicating of the importance of wearing a mask should be added.

(7) Mental Health

Content where additional explanation is necessary

- (i) Content including how to connect with a specialist should be added. For example, by understanding the information of the team of specialists such as the mental care team and Disaster Public Health Assistance Team (DPAT), there should be cooperation. Furthermore, the elderly should be connected with a mental health specialist of the region as soon as possible.
- (ii) Since some nurses do not understand how to listen carefully, the emphasis for listening lightly to the elderly and promptly connecting them with a specialist should be added.

(8) Isolation in terms of Information

Content with validity

- (i) Since the information that is posted at the shelter was delivered, it is the same content as the coping methods, therefore, this is valid.

Content where additional explanation is necessary

- (i) In the coping methods, it says confirm whether the information has been communicated and the degree of understanding. Since confirmation and communication of necessary information were deemed important, this should be added.

(9) Other

Since the exchange of information with the regional nurses related to people who need special help/care in the shelter and information regarding cooperation would have been good, under coping methods of health status, the adding of understanding for the elderly who need care and the section of triage should be discussed.

2) Guideline of Care for Elderly (In Temporary Housing)

The guideline of care for elderly was written each of the factors, assessment content, and coping methods for homebound people, people facing a lonely death, issues regarding living and health management, mental health, increase of dementia among the elderly, and anxiety about life in the future.

(1) Problems associated with health management

Content where additional explanation is necessary.

- (i) The same cases are looked at by the same person, and it is important to do so, however, this is difficult. For cases where the same person cannot make the visit, the addition of specific methods is necessary such as "a message should be sent properly", "creating a record by case and information should be shared", and "telling the elderly that nursing care provider is from the same place as the predecessor at the time of introduction when making the visit".
- (ii) It says something like a self-management sheet, but since it is hard to understand what it is, the attachment as an appendix should be considered. Furthermore, it is necessary that the items indicated on the self-management sheet are considered.

(2) Mental Health

Content with validity

- (i) Many negative words were heard. From feeling that just listening that the elderly talking and was good, the guideline indicates the attitude of attentive hearing as a coping method. This is valid.

(3) Other

Content with validity

- (i) Since it is important to know what social resources can be used, and the guideline indicates social resources related to each of the chapters, this is valid.

II. Guideline for Nurses to conduct the health care profession activities (Tips for the Nursing Volunteer)

The guideline for the nursing volunteer includes preparation for approach to disaster area, assessment of the disaster area, and activity content and attitude in the disaster area. Regarding this guideline, there were two good points as shown below, and two points of improvement were raised.

Good Points:

- (i) The main points are covered.

(ii) Preparation for self-containment is clarified.

Points of Improvement:

(i) It will be good if there is something like a checklist.

(ii) As for attitude, the importance of working with a presence of mind.

1) Assessment of the Disaster Situation

(1) Situation of disaster survivors

Content with validity

(i) Since consideration for at-home disaster survivors was necessary, there is indication regarding support for people who are able to come to the shelter and those who are not, therefore, this is valid.

Content where additional explanation is necessary

(i) In the grasp of people with a high priority of support after disaster, fatherless families should be included.

2) Support for Survivors

Content with validity

(i) Regarding health management, since there were people without subjective symptoms who were not aware of their own physical status, asking each specific person whether they have taken their medicine is necessary and valid.

Content where additional explanation is necessary

(i) When working with a medical team, the nursing volunteer will assist treatment in a temporary clinic, but since there is the need to figure out that nurses would go into the shelter and conduct the assessment of who needs support in the shelter, should be added.

(ii) The need for changing the methods depending on the situation should be added and emphasized.

3) The Actions of Oneself in a Disaster Area

Content with validity

(i) There is an opinion saying the guideline could contain the need for cooperation with the government office and local people, however, it already indicates, work with the local people, and construct a relationship with the people who act as the contact window of the region, and work by creating a team with local organizations of the region. This is valid content.

Content where additional explanation is necessary

(i) In the working methods/attitude, to be aware of interacting with survivors in a way that is not a burden on them needs to be added.

(ii) The people of Tohoku have the characteristic of not speaking up and taking time to speaking up, and the importance of attitude/preparation by knowing the characteristics of the region and its people and adjusting to them when interacting with them should be added.

(iii) The guideline indicates the need for cooperation with the government office and local people, however, the information is in list form, and since there is the possibility that the information is not being properly presented, a new method of indication needs to be devised. Furthermore, information regarding how to work with public health nurses and how to interact with them should be added. Specifically, "Understand where the public health nurse assisting at the shelter belongs and who is making the dispatch adjustments, and cooperate with them." should be added.

(iv) In inheriting the information, the points were unclear, and it could not be understood. Furthermore, it will be good to have a survivors files that the nurses use. From the above, related to inheriting information, the points necessary in inheriting the information and description methods of inheriting material needs to be added. For example, the time schedule and activity content of one day at a shelter and contact method with the shelter manager, and others.

(Discussion) The current guideline is well organized, and it helps the nurses entering disaster assistance for the first time by roughly capturing what takes place on site, and it also helps them imagine what the shelter is like. On the other hand, regarding specific cases and details related to coping methods, the adding of health management and life support of survivors, more specific coping methods with regard to environment maintenance, and specific methods of cooperating with other occupations and nurses are necessary. Because of the wide variety of people at a shelter, it is now evident that one book that summarizes the coping methods for all people would be helpful, and coming up with ideas that make the application easier is necessary. The guideline was developed based on examinations and research of the activity results after the Great Hanshin-Awaji Earthquake, and although there were valid parts, there were areas where refinement was needed. In keeping with the research results, additions and revisions to the guideline will be made.

Activity 3

Title: To validate the core competencies for disaster nursing developed by WHO and ICN.

Description: The core competencies developed by WHO and ICN will be validated through interviewing nurses providing care in disaster period in Japan and other countries.

The core competencies for disaster nursing was developed by WHO and ICN that was called ICN Framework of Disaster Nursing Competencies. ICN Framework was divided into 4 areas – Prevention/Mitigation Competencies, Preparedness Competencies, Response Competencies, Recovery /Rehabilitation Competencies. Ten domains were within the four areas. In prevention/mitigation competencies, there are 2 domains: “Risk Reduction Disease Prevention and Health Promotion” and “Policy Development and Planning”. In preparedness competencies, there are 3 domains: “Ethical Practice, Legal Practice and Accountability”, “Communication and Information Sharing” and “Education and Preparedness”. In response competencies, there are 4 domains: “Care of the Community”, “Care of Individuals and Families”, “Psychological Care” and “Care of Vulnerable Populations”. In recovery /rehabilitation competencies, there are 1 domain: “Long – term Individual, Family and Community Recovery”.

In this section of this report, ICN Framework was examined based on nursing practice at the time of the Great East Japan Earthquake and our research results/activities explaining in another section of this report.

In Risk Reduction, Disease Prevention and Health Promotion, the following activities were included such as conducting the survey, providing health consultation and health education for survivors living in temporary housing (see details in reference to Activity 1, Activity 6, and Activity 8 in this report).

One of roles in disaster nursing was participating in disaster planning (see details in reference to Activity 8). It was shown that disaster nursing competencies –“Participates in disaster planning and policy development” in “Policy Development and Planning”. In “Policy Development and Planning”, there were “Describes the role of public health in disaster and how it relates to the nurse’s role”. The research for activities of support nurses coming from outside the disaster site (see details in reference to Activity 9) was represented the realistic nursing disaster competencies.

The preparedness competencies include 3 domains; “Ethical Practice, Legal Practice and Accountability”, “Communication and Information Sharing” and “Education and Preparedness”. The research for validation of guideline (see details in reference to Activity 2) and the health consultation for survivors living in temporary housing (see details in reference to Activity 1) and the research for support nursing activities (see details in reference to Activity 9) to survivors suggested the “Accountability”. In the research for network-systems (see details in reference to Activity 4), the supportive network system was created to adjust itself to the needs of nursing at the disaster sites. This supportive network system has roles of coordination and provision information among the disaster response team. It was shown that disaster nursing competencies - “Communication and Information Sharing”. The conducting education programs for teachers/faculties and nurses (see details in reference to Activity 7) and educational programs for community people (details in reference to Activity 6) and the conducted research (details in reference to Activity 1, Activity 2, Activity 4 and Activity 9) supported contents of competencies in “Education and Preparedness”.

The response competencies include 4 domains; “Care of the Community”, “Care of Individuals and Families”, “Psychological Care”, and “Care of Vulnerable Population”. The activities of support nurses (details in reference to Activity 9) were fitted in “Care of Communities”. The survey for validation of guideline revealed how to care for Vulnerable Population, Individuals and Families. This survey explained the practical ways of “Care of Individuals and Families” and “Care of Vulnerable Population”.

“Long-term Individual, Family and Community Recovery” was one competency in the recovery/rehabilitation competency. The activities of support nurses (details in reference to Activity 9) were represented the “Long-term Individual, Family and Community Recovery”. In addition, the research and the health consultation for survivors living in temporary housing (see details in reference to Activity 1, Activity 6 and Activity 8) was also related this competencies.

On the other hands, the importance of the ability of stress management for nurses themselves was identified by research about support nurses activities (see details in reference to Activity 9). The ability of stress management of nurses would be included in the disaster nursing competencies.

Activity 4

Title: To develop effective network-systems among organization related to nursing, such as professional organizations, Ministry of Health, University, Academic organizations, and other inter-professional organizations, such as Medical organizations, as well

Description: The works will be done in collaboration with WHO WPRO through exploring successful cases, processes and lessons learned which further cooperation and collaboration.

Dr. Xiaoyu Wu, Dr. Noriko Katada

To draw a whole structure diagram of the nursing supportive network to meet the disaster needs in the acute and sub-acute stage by reviewing the papers and reports published within two years after the Great East Japan Earthquake and meta-analyzing the experiences of various peoples.

[Methods]

1. Systematic review of the literature was implemented. Papers related with the Great East Japan Earthquake in Ichushi and CiNii as well as reports from Japan Nursing Association and various organizations from the disaster area and publications in one year period from the Japan Society of Disaster Nursing.

2. Papers hit by all of the following four keywords ,”The Great East Japan Earthquake”, “Support”, “Nursing” and “Network” were collected. The contents were input into Excel files word by word and classified by the networks in response to the contents written from various points of view and various needs in the disaster. People and organizations reported by the authors were extracted by each unit of meaning. How the networks were constructed and connected with each other was also extracted and the connection between existing networks and spontaneous networks was also clarified. Furthermore, a whole structure diagram of the relationships among the supportive networks was drawn.

[Results]

I. Summary of the retrieved literature related the Great East Japan Earthquake

Literatures related with the Great East Japan Earthquake were retrieved with the key words, the Great East Japan Earthquake, network and nursing. In Ichushi 66 papers were hit and in CiNii 1 paper, which was also hit in Ichushi, was hit. The 66 literatures were used in this analysis.

Besides these, the following lively descriptive reports were fully read and analyzed, these reports include The Great East Japan Earthquake Report from Nurses edited by the Japanese Nursing Association and 100 days in Ishinomaki Red Cross Hospital edited by Ryouko Yui and How The Nursing Functioned and Not Functioned at That Time edited by the Nursing Department of the Miyagi Association of Health and Welfare.

□ · The Structure of Disaster Nursing Network and the Cooperation Described by the Literatures

Table 2 shows the most demanded disaster nursing supports during the acute period and the sub-acute period in the Great East Japan Earthquake from the literature.

Table 2 Classification of the demands of the supportive nursing care and the networks in the disaster

Disaster Supportive Nursing Networks/Demands in Disaster Supportive Nursing

1. Evacuation supporting networks/Evacuation demand of the in-patients
2. Nursing staff recruiting networks/ Demand of nursing staff
3. Network supporting continuous medical care in disaster area/ Demand of continuous medical care
4. Supportive network to move patients out of the disaster area/ Demand to move patients out from the disaster area
5. Network to care the disaster victims and support their daily life/ Demands in caring the disaster victims and supporting their daily life

The contents were classified into six categories: 1. the view point of the authors; 2. the people and organizations moved into the disaster area from outside; 3. the people and organizations in the disaster area; 4. how the supportive staff in and out of the disaster area were connected; 5. effect of supporting; 6. deliberate tasks. From the contents of the literatures, the current status of the disaster nursing supportive networks and how these networks cooperated with each other were extracted in the following way.

[Discussion]

The analysis clarified that during the Great East Japan Earthquake, the nursing staffs in the disaster area played effective role in nursing, it also clarified how the existing networks functioned around the country. Furthermore, as shown in Figure6, from the five themes, the overall image of the supportive nursing networks in the disaster area were drawn. First of all, the existing networks in the disaster area functioned fully,

meanwhile they connected further with the supportive networks in an out of the disaster area. With the newly strengthened supportive system, all of the networks worked effectively.

The disaster supportive network system set up by the Japanese Nursing Association, worked as a great help to the nursing staffs and implemented effective supporting activities in the disaster occurred in East Japan. From the experience of the Great Hanshin Earthquake, in all over the country, various organization set up networks in daily activity. When a disaster happens, these networks managed to connect with the networks in the disaster area and played a supportive role.

Furthermore, the connection set up in everyday activities among individuals, the nearby facilities and organizations, played important roles in helping setting up supportive networks in the disaster period.

As the result of the analysis, the scenario was drawn out on the existing supportive nursing networks and the spontaneous networks as well as how these networks were connected with each other.

When the East Japan disaster occurred, in response to the needs of nursing in disaster, the existing networks in the disaster area functioned fully, meanwhile they connected further with the supportive networks in and out of the disaster area, and the supportive nursing system grew even more.

During this process, the connections set up in everyday activities among individuals, the nearby facilities and organizations played important roles in setting up supportive networks in the disaster area.

These results were disseminated in the 3rd international conference of the World Society of Disaster Nursing (WSDN).

Activity 5

Title: To develop methods of effective provision of information/knowledge to disaster-affected countries through APEDNN in collaboration with WHO-WPRO

Description: In collaboration with WHO-WPRO, the effective ways for information/knowledge provision at the time of disaster will be developed among APEDNN members. Further, the ways will be expanded to other area in the world.

I. The Methods of Distributing Information Effectively into a Region during a Disaster

During the Great East Japan Earthquake that occurred on March 11, 2011, at the University of Hyogo, knowledge regarding the care of the survivors at the shelters was provided to Miyagi University, which was one of the disaster locations, and distributed information regarding the situation of the disaster area to the universities outside of the disaster area and academic society-related networks. With this, it played a role in connecting the universities inside of the disaster area with the universities on the outside and networks of nursing academies.

Knowledge of providing information and knowledge during the disaster based on the disaster cycle were accumulated and summarized in this report.

1. Results

1) One week after the disaster: Response & Recovery

Regarding the disaster situation and the needs of the survivors acquired from Miyagi University (which is a university inside of the disaster area), the University of Hyogo (which is outside of the disaster area) distributed the information to other universities and within related networks of nursing academies.

2) One week to one month after the disaster: Recovery & Rehabilitation

The University of Hyogo distributes information from Miyagi University (in case of the Great East Japan Earthquake, the safety confirmation of faculties and disaster situation of the university) to other universities and within related networks of academies.

From the information acquired, using knowledge gained from experience, lessons, and research, the University of Hyogo assessed what was happening inside of the disaster area and gave them a web page address (of the University of Hyogo) with information related to the nursing care needed (this time, it consisted of the care for people having special needs which includes children, the elderly, pregnant women, patients with a chronic disease, and tips on nursing activities within the disaster area). Furthermore, along with goods that were assessed as necessary, a nursing care guideline was sent.

In addition, approximately one month after the earthquake, which was thought to be the time visiting the disaster area was possible, visits were made to the disaster area, and the disaster situation and the needs of the survivors were understood. The actual situation and future outlook was reported to other universities and related networks of academies.

3) One month to half a year after the disaster: Recovery & Rehabilitation

Using the knowledge gained from information, experience, lessons, and results of research, the University of Hyogo made a proposal to Miyagi University regarding support activities in the future. Miyagi University

concentrated on corresponding to the realities within the disaster area and had no time or no extra human resources to spare on the planning of specific ideas regarding support activities in the future based on the disaster cycle. The University of Hyogo predicted the change in the needs of the survivors in the future and was able to give specific ideas regarding the needed care and the methods to provide them. With this, Miyagi University was also able to predict the change in the needs of survivors and got the opportunity to initiate activities that were advantageous.

4) After more than half a year: Rehabilitation

Miyagi University and the University of Hyogo discussed the specific methods of the support of survivors. The specific ideas of support activities proceeded so as to share information using e-mail, telephone, and videoconferences because people involved in the activities. As a university within the disaster area, Miyagi University played the role of a coordinator adjusting the schedule and location support activities on site, giving explanations and obtaining approval from the related organization, and giving explanations and obtaining approval from the president of the neighborhood association of the temporary housing sections. Regarding support activities, the University of Hyogo recruited personnel for health measurement and health consultation, prepared record sheets, considered the content of health education, and prepared materials.

2. Discussion

1) One week after the disaster: Response & Recovery

With the University of Hyogo acting as a contact point, it is considered that a flood of inquiries from other universities and academies to Miyagi University, already struggled to correspondence after the disaster, was avoided. In addition, by distributing information of the situation within the disaster area into existing networks, quick, broad communication was possible. It is considered that from this information, each university and each academy was able to consider the support for the disaster area, each with their own expertise, from an early stage after the disaster had occurred.

From the above, it is suggested that a creation of a network in normal time with nurses' professional associations and the nursing educational community, and universities outside of the disaster area with experience of a disaster volunteering to act as the contact point is effective as a method of providing information and knowledge in and out the disaster area.

2) One week to one month after the disaster: Recovery & Rehabilitation

During this period, the role as a contact point for inside and outside the disaster area continued, and with this, it is considered that the burden of receiving and sending information was reduced for university in disaster area. Furthermore, a university with experience of a disaster assessed the received information. And because the minimal information was selected and communicated by a university with experience of disaster the time to take and select the information was reduced for the university within the disaster area, and this lead to take more time for the care and correspondence for survivors. In addition, the universities with experience of a disaster assessed the appropriate visiting period of the disaster from the acquired information, and by assessing the information actually acquired on site, information including the future outlook was provided into the network. It is considered that the resources outside of the disaster area (in this case, nurses and nursing teachers) were able to provide the criterion for determination for the support of the disaster area.

From the above, it is suggested that continuing to act as a contact point for more than one month after the disaster and to provide information after careful selection by one who has experience with a disaster is necessary in reducing the burden of the disaster area. Furthermore, it is also important to provide the opportunity aimed for the support of the disaster area with resources outside of the disaster area.

3) One month to half a year after the disaster: Recovery & Rehabilitation

During this period, for the preparation of switching to the correspondence to the current situation to the activity of the future, a specific proposal considering disaster experience and lessons is necessary. By proposing specific ideas, the disaster areas inundated with correspondence can predict the changes of the survivors in the future and create opportunities for people to convert to activities that are advantageous. From the above, it is suggested that it is necessary for universities outside of the disaster area to anticipate the future, and propose specific ideas that are advantageous.

4) After more than half a year: Rehabilitation

During this time, to implement activities that are close to the needs of the survivors, which are predicted to change going into the future, and supporting activities that match the needs of the survivors on-site by sharing ideas and discussion among related organization using information means such as e-mail and Skype is necessary. Regarding actual activities, it is believed that information sharing and role dividing is necessary in materializing the implementation of activities by utilizing each of the characteristics and situations of the universities.

From the above, regarding ideas of activities of survivor support, it is suggested that communication by using various information sources and involving the people who are related is necessary.

3. Summary

It is a method that was thought up in corresponding to a disaster that occurred in Japan called the Great East Japan Earthquake, but even in terms of countries, if one contact point within the disaster area and one contact point outside of the disaster area can be decided, in the same way, by distributing information, it can lead to the reduction of the burden on the disaster area and expansion of opportunities for support of the disaster area. In this regard, it is necessary that organizations that has experience with disasters assess the information of the situation of the disaster area, provide the appropriate information at the appropriate time and present the policies in the future.

In addition, by developing construction of relationships of information sharing into activities that support the survivors, and even developing research from that point, it is a method that can also contribute to the construction of disaster nursing knowledge.

□ · The Activities of Distributing Information about Disaster in Abroad

When Earthquake happened in Nepal, April, 2015, to gather the information in Japan, web pages which were World Health Organization (WHO), WHO-South – East Asia Regional Office (SEARO), UN Office for the Coordination of Humanitarian Affairs (UNOCHA), UN Children’s Fund (UNICEF) and Nepal Government were accessed. The information was summarized by every clusters which was decided by Inter – Agency Standing Committee. The brief reports were summarized, specially focused on Health, and distributed through the Web page of our Research Institute. These summary reports were useful and valuable to understand the situation for Health professionals. This activities represent one of ways which was information distribution as research institutions or universities outside disaster area.

Activity 6

Title: To conduct and disseminate training/educational programs for mitigation of the impact of disasters on community members, particularly those most vulnerable, including: elderly, children, bearing and rearing women, and disabled.

Description: The educational program of disaster preparedness for school students will be provided and evaluated the utilization of it. In relation with WHO WPRO, the program will be expanded to other Asian countries.

Two educational programs were conducted. Health education program for survivors in Kesennuma city where had seriously damaged by the Great East Japan was conducted with other organization. The second mitigation education program was for community residents in Akashi and in Kobe.

1. Health education programs for survivors in Kesennuma city, Miyagi prefecture

Health education programs for survivors living in temporary housing were developed based on nursing activities after the Great East Japan Earthquake and the research results of health and living conditions among survivors. Nursing activities in Kesennuma city included health check, health consultation, and lecture about health. The educational programs were conducted by Miyagi University, division of health promotion in Kesennuma city, psychological care center and University of Hyogo every two months. Six educational lectures in order to maintain good health among survivors at temporary housing after the disaster were provided from June 2014 to March 2015. The titles of educational programs were the follows: “Lecture of rethink the health condition based on measurement of physical fitness and health consultation”, “Lecture about salt consumption”, “Lecture about meal balance”, “Lecture about relaxation”, “Lecture about sleep” and “Measurement of physical fitness and Health consultation”. Each session of the programs lasted fifteen or twenty minutes. Total number of participants was 98 people

On the effects of programs, participants more kept attention to their physical conditions, and changed their life styles in temporary housing after disaster. Through health consultations provided nurses, survivors paid more attentions to own health conditions, and improved their self-care ability.

□. Disaster mitigation education for the residents in Akashi was conducted at the university campus festival. The project theme was “Learn about the dangers around you in the community where you live.” in 2014.

In order for the residents to learn about the dangers around them, a diorama of the area around the university were created and conducted a simulation using the diorama. In the diorama, a channel which could be flooded during heavy rain were created, as well as model concrete-block walls, vending machines, etc., which could fall at the time of earthquake. Facilities and locations in the diorama that could be used as resources at the time of a disaster such as an evacuation center in the area, the location of the community wireless system,

locations of pay phones, convenience stores that provide support for returning home, were also recreated. While communicating with local residents who visited the university campus festival using the diorama, dangers around them and evacuation routes to the evacuation center were confirmed with local residents. Many of the local residents knew the evacuation center's location to which they would evacuate. However it was found out that they were less conscious about safe evacuation routes from their homes to the evacuation center. Local residents simulated the evacuation routes from their homes to evacuation center and they found dangerous places on the evacuation routes in the diorama. Some of the local residents said that they would actually confirm dangerous places indicated in the diorama when walking in the area, while others said that they would confirm the dangerous places along the way to the locations (workplaces, schools, shopping) that they frequently go which are similar to those indicated in the diorama.

From the above, it was a chance that local residents improved awareness on disaster mitigation.

The other programs theme was "Find a role that you can do at the evacuation center". An evacuation center in the exhibition room were simulated with using dolls and showed up the problems that frequently occur at evacuation centers and situations of vulnerable peoples.

The problems in evacuation centers and those who need consideration that were as follows: (1) dirty bathrooms, (2) a pile of relief supplies (food and blankets), (3) several children who look bored or have nothing to do, (4) Needs of vulnerable people : A .an elderly person who needs to go to the bathroom, B. a visually impaired person, and C. a person in a wheelchair who may not be able to go and obtain relief goods, (5) a person who appears to be ill and be laying down, (6) dirty floors and trash cans filled with trash, (7) there are women who want to breast-feed and change clothes, (8) security problems = positing of information on a suspicious person received from police," and (9) shower rooms which cannot be used as they are over-crowded because there are only two of them.

Residents came the exhibition room and would be conducted as follows:

- Explanation of the evacuation center were given to residents while showing the evacuation center at the time of a disaster using photos to help them imagine that they were in the evacuation center and asked them to look around the simulated evacuation center.
- After looking around, the residents thought about how they could cooperate and what role they could play in solving the problems.
- They wrote those roles that play in solving the problems on sticky notes and put them on a prepared blank evacuation center map.

This blank map was installed in a place where all the residents could see it and the same time when residents put the sticky notes on the map, they could see the notes written by other residents.

<Results>

The number of residents was 67 and the number of sticky notes was 93. The problems that collected many roles that residents could play were (1) several children who look bored and have nothing to do (16 notes), (2) a pile of relief supplies (food and blankets) (15 notes), and (3) dirty floor and trash cans filled with trash (14 notes). They wrote that the following roles could be played to solve those problems:

(1) Several children who look bored or have nothing to do

- Play with children. Specifically, read them a book, make something using newspaper, tell them old stories, and play soccer outside
- Eliminate their concerns. Specifically, do something together with them and read a book
- Secure a play space
- Call for making a small kinder garden for children to gather and play together

(2) A pile of relief supplies (food and blankets)

- Help distributing the supplies to someone in need
- Give own supplies to someone in need
- Considerations need to be taken, so that those who are rearing babies with formula milk can receive supplies

(3) Dirty floors and trash cans filled with trash

- Segregate trash
- Set trash cans so that people can easily understand the segregation
- Those who notice the trash pick it up, put it in the trash can, and clean up
- Division of roles of the cleaning duty and environmental arrangement

<Residents Reaction>

Residents seemed to have difficulty in imagining an evacuation center and noticing the problems at the evacuation center simply by entering the venue and looking at the exhibited objects. Therefore, it was needed

to respond to the situation in order for the residents to be able to more specifically imagine them, such as providing explanations on the evacuation center, explanations on the problems in concert with the exhibition, and others, to facilitate their imaginations. As the space where the evacuation center was recreated was not separated and could not develop a realistic sense that they could feel they had come to the evacuation center, it was found out that when conducting a simulation, the setting was needed to be devised so that they could enter the simulated form reality.

On the other hand, by talking with the faculties and students, residents who did not show much interest in the beginning listed that they could do to solve the problems one after another based on experience with volunteer activities. By having conversations, it was an opportunity for them to take interest, look back on their own experiences, and confirm what they could do to mitigate a disaster.

There were also residents who learned what they could do to solve the problems, what roles they could play and ideas they could come up with while looking at the roles written by others. Furthermore, it was an opportunity where people who had an experience of being evacuated to an evacuation center provided advice on disaster prevention measures and talked about disaster mitigation with other visitors who did not have the experience of evacuation, bringing visitors together. This regional disaster prevention education through simulation can be applied to other places, so the report would be released in a journal in the future.

□ · Disaster mitigation education in Kobe, Hyogo

In Hyogo prefecture, events for “Hyogo Anzen no Hi no Tsudoi (Hyogo gathering on the day of safety)” are held on January 17 every year to reaffirm awareness on disaster prevention and transmit the experience and lessons of the Great Hanshin – Awaji Earthquake. Among such events, there is an event called “Koryu Hiroba (Exchange market)” which is held at Kobe Municipal Nagisa Park. Every year, students and faculty at the Research Institute of Nursing Care for People and Community and the College of Nursing Art and Science at the University of Hyogo participate in this event with the aim of not forgetting that day of the Earthquake and disseminating the preparations at the time of a disaster. Their activities are presented in this report.

The purpose of the activities was sharing knowledge needed at the time of a disaster and the methods to maintain health and livelihood with the local residents that participated in the event and lead to the promotion of preparatory actions.

This year represents a milestone as it is the 20th year since the Great Hanshin – Awaji Earthquake. In order to be able to pass down the experiences and lessons of the Great Hanshin – Awaji Earthquake beyond regions and generations without forgetting them, activities were conducted to introduce evacuation goods and our past activities to conduct the physical exercise, and to share experience and knowledge on preparations to be made by residents. In order for more people to participate in the activities and take interest in preparations for disaster and in order for this to become a place where they can exchange opinions for disaster and in order for this to become a place where they can exchange opinions and share information, several devices that were contents and exhibition method would be attracted people were prepared.

For the evacuation goods, an actual backpack containing food, clothes, radio, and others, necessary at the time of evacuation in a way which were exhibited so that participants could pick it up. In front of the booth, physical exercise was conducted regularly with the aim of maintaining health and preventing disuse syndrome. For the exercise, an open atmosphere would be created, so that anybody could participate, and as the motivation for the exercise, information on the health problems that tend to occur depending on the evacuation situation were provided.

A “Tree of Knowledge” to collect and share lessons about disasters from participants were created. A method was to engage them in disk awareness to lead to action by asking questions about preparations and responses at the time of a disaster, to which participants answered by imagining necessary actions.

There were 20 questions such as “Where do you obtain necessary information after a disaster?” “Please tell us what you would like to take with you the most at the time of a disaster?” “What would support you during a difficult time after disaster?” “Please tell us the matters you need to pay attention to when going to an evacuation center?” and others. Each question was written on a card. The participants pulled out a card, wrote their answer to question on a sticky note, and put it on the paper on which a tree trunk was drawn in a way to resemble leaves, so that the knowledge could be shared with many people.

There were many visitors to the booth and a total of 135 knowledge notes were collected. The activity at this time was a place where “sharing one’s knowledge with others” and “learning from the knowledge of others” could be carried out. Regarding “mobile phones” as something to take with them at the time of evacuation, those who experience the Great Hanshin – Awaji Earthquake and those who did not experience exchanged opinions, going beyond regions and generations. Among the participants, there was a person who said, “I still suffer” in regard to their experience of the Great Hanshin – Awaji Earthquake and was nearly in tears talking

about their memories even today, with 20 years having passed since that time. As there were many answers saying “Family” for the question of “What would support you during a difficult time?” many people also talked support from their families.

Activity 7

Title: To develop and conduct training/educational programs including formal and continuing programs for fostering of trainers in health emergency management.

Description: Based on the experience of the Great East Japan Earthquake, the existing training/educational programs including graduate programs and continuing programs will be changed, provided, and evaluated.

There are two educational programs; one is the continuing education of nurses and nursing teachers, and the other is education through graduate school.

1) Continuing Education

First, an open lecture consisting of six lectures in two days was implemented as continuing education for nurses and nursing faculties. The lecture included the following: knowledge structure of disaster nursing as discipline, educational methods in disaster nursing, support of people requiring special need (handicapped people/ home care patients), educational methods of disaster nursing using simulations, and educational methods using games. Seventy – eight people attended the lecture consisting of nursing faculties and nurses who are in charge of disaster prevention and education at hospitals.

In the lectures, there were explanations of overviews on the support of people requiring special help during a disaster, which is a reference to the lecture content, and knowledge structure of disaster nursing (disaster nursing core competency and ICN framework of disaster nursing competencies), which is the structure of the lecture. Furthermore, as an educational method, the lecture consisted of people participating in educational exercises using actual games and simulators.

The contents of games were allowed one to think about shelter management. Five to seven people made up one group, and by drawing cards with various problems and incidents that occur in shelters, it was a game where one learns about the situation and problems in a shelter. By participating in the game, the person was able to get closer to the survivors emotionally, and with the group members cooperating with one another, it was a game that provided an opportunity to think deeper about shelter management.

Among nurses and nursing faculties, there was not one person who had experienced evacuating into an actual shelter, and they felt the situations and problems of the shelter were very realistic. It provided an opportunity for them to think about their own roles in a certain situation. The rules were simple and easy, and with a game kit distributed to nurses and nursing faculties, many voices were raised saying they wanted to implement the game in their own offices and nursing universities/schools. It also became an opportunity to spread the simulation method through the game.

In the lectures and exercises of educational methods using a simulator, patient transport training and triage training were conducted. In the patient transport training, the people attending the lecture played the roles of the medical staff and patient, a situational setting was created, and they learned how to use equipment for transportation and actually participated in transport training. The order of priority was decided for the people playing the role of the medical staff, and they learned the methods and techniques of transport in cooperation. The people who played the role of the patient were able to experience the feeling of the one being transported, and it provided them with an opportunity to think about methods of how to transport the patient safely and peacefully.

In the triage training, the people attending the lecture played the roles of the patient and triage practitioner. A simulator was also placed as the patient, and triage was practiced as they learned the methods of the triage. In the same way as the transport training, the people playing the role of the medical staff were able to learn about the triage methods and techniques through the experience. And the people playing the role of the patient were able to experience the feelings of a patient involved in the triage process, and they were given the opportunity to think about the nursing one wants to receive after triage and learn what the necessary nursing was after triage. Furthermore, with the debriefing after the exercise, they were able to deepen their understanding and learn about the importance of debriefing after an exercise through experience.

With the lectures this time, the level of satisfaction among people who attended the lectures was high because it provided them with an opportunity to learn about disaster nursing themselves. They learned about the implementation methods of how to structure the exercise, and they were able to learn by participating. The holding of more lectures is desired in the future, and because there were requests saying they wanted to learn lectures relating to the basics of disaster nursing and to learn about the details of the support of people requiring special need, lectures regarding the basic knowledge of disaster nursing, people requiring special

need such as children and patients with chronic disease, and support are being added. And the program content of exercises, including disaster diagram training, is also being considered, and lectures are scheduled to be held in 2015.

Regarding the disaster situations people would be in and correspondence for disaster situation and people in disasters, by combining lectures, simulations, and exercised, people are able to learn the educational methods. This program would be developed in the future as a continuing educational program.

2) Graduate program

Graduate program is implemented as (1) education of clinical nurse specialists curriculum of disaster nursing and (2) five-year cooperative doctoral course of disaster nursing global leader.

(1) Education of clinical nurse specialists' curriculum of disaster nursing

With the clinical nurse specialist's curriculum, because it is practical training of a high degree, it incorporates lectures, exercise, and writing thesis into the curriculum. In the lectures, students study disasters and the reaction of people to disasters and methods of maintaining health with every disaster cycle. Later, the students learn nursing care skills during times of disaster correspondence and nursing care skills during the disaster and mid and long term by going to the emergency rooms of hospitals and temporary housing. Furthermore, by deepening the understanding in the fields where the students have the most interest, students write a thesis through practice as a practical research assignment.

In the lectures, Disaster Nursing for activities (activities in shelter, temporary housing, preparedness, and others), Disaster Nursing for Vulnerable – populations (care for elderly people, child, pregnant women, person with chronic disease, and others) were usually conducted. In this year, to the reports of the health status of the people affected by the Great East Japan Earthquake, health damage by disaster type (such as health damage caused by the tsunami), understanding for people who need special help (Handicapped person), and revisions to the disaster prevention systems was newly added in lectures, and education was conducted.

With the nursing care techniques at the time of disaster correspondence, students were able to participate in the training of DMAT (Disaster Medical Assistance Team), and they were able to learn about the medical systems and care techniques at the time of disaster. Furthermore, in the emergency room of the hospital, it created an opportunity for students to learn how to assess the patient being transported, how to treat the patient as a team, and the actual details of the treatment and treatment techniques. Since the training took place in a hospital where many patients are transported, students were able to learn the triage within the hospital, and how to progress the treatment by protecting the safety of the patient when there is not a sufficient number of medical staff, and incidents that may occur during the period of a disaster.

Regarding nursing care techniques in mid and long term after disaster, an opportunity to learn was created by staying at the disaster area of the Great East Japan Earthquake. At home visit to the temporary housing, the life of the survivors in the temporary housing was understood, health assessment among the survivors' health status were learned, and how to visit the temporary housing was also understood. By actually talking to the residents of the temporary housing, students were able to learn that people with chronic diseases were living and thinking of ways to live by maintaining their health in the temporary housing. Furthermore, in order to support the health of these people as a specialist, it became an opportunity for students to learn about the importance of understanding resources and networking with cooperating among the related institutions, NGO, and related organizations by sharing information.

In the practical research assignment, thesis theme of the disaster preparedness for special need people in disaster were selected by student based on the work experience of the student.

(2) Disaster Nursing Global Leader Degree Program

The education of new doctoral degree course for Disaster Nursing Global Leader was started in 2014 with the participation of the 5 universities (including University of Hyogo) in Japan. This program's purpose was below.

- To conduct innovative research and develop theories which can be applied to nursing practices in cooperation with other professionals in related disciplines
- To contribute towards promotion of human security through educating nurses with profound understanding in disaster nursing.

The target is to create global nurse leaders who can respond to and solve a wide range of problems in disasters and exercise interdisciplinary leadership in international settings. There are two educational outcomes. One is that problem-solving skills related to disasters with multiple and systemic perspectives and comprehensive and international framework. Other is nursing leaders who can respond to local/global disasters. Curriculum was consist of 6 courses: Basic Courses in Nursing, Courses on Disaster Nursing Global Leadership Skills, Courses for Disaster Nursing Science, Disaster Nursing Seminar, Disaster Nursing Practicum and Disaster Nursing Dissertation Research.

Our institute joined the education as faculties, as giving a chance of education about risk management in health and simulation education of disaster nursing.

Activity 8

Title: To clarify roles and functions of nurses by disaster cycle

Description: The roles and functions of nurses at each of disaster cycle will be explored through interview to nurses providing care at the Great East Japan Earthquake.

Nurses' roles and functions were clarified based on a disaster cycle which consists of 3 phases – response phase, recovery/rehabilitation phase and preparedness phase. Since it is becoming apparent that the roles and functions of nursing by phase of the disaster or being inside or outside of the disaster area is different through examination of documents and interviews, it is as described below.

1) Nursing Inside of the Disaster Area During the Response Phase

(1) Nursing in Hospitals

The response phase refers to about one week immediately following the occurrence of the disaster. The nursing at hospitals within the disaster area is responding to inpatients and emergency outpatients. With emergency outpatients, the nurses are conducting triage, providing support of the treatment, and treating patients who are determined to have minor illnesses from the results of the triage. In addition, explanations are given to many of the patients with minor illnesses who are waiting for treatment, and the nurses listen to what the patient has to say. They were managing groups of people so the treatment could be provided for patients quickly and safely. Furthermore, during the Great East Japan Earthquake, since the medicine of patients with chronic illnesses were washed away by the tsunami, many patients rushed to the hospital looking for prescriptions, and there was much confusion temporarily. Therefore, medical examinations were conducted by interview through the arranged prescription outpatient care, the patients were listened to, and the nurses managed groups of people so there was no confusion in the places where patients were waiting. From the above, one can understand that because more patients gather at hospitals during a disaster than usual, the nurses play the role of managing groups of people by not allowing confusion to occur, giving explanations, and listening to patients. With this role the nurse play, it is believed that patients were able to receive medical care quickly and safely. This is a role that had been implemented in the past, but it had not been clearly indicated. With this, it can be understood that there is “care and management for patient groups” as one of the roles for nurses at hospitals within the disaster area during the response phase.

(2) Nursing Management in Hospitals

Regarding nursing management at hospitals during the response phase, one of the large roles includes organizing the structure for providing nursing care so treatment and nursing is provided for patients safely. Therefore, in order to provide nursing for many of the patients who come to the hospital or for those who are admitted, securing of nursing was conducted.

(i) For Nursing at One's Own Hospital

Changes were made to the nursing shifts at one's own hospital and nurses that had arrived for the disaster had been arranged. Furthermore, in order to provide nursing safely, the organizing of the nurse's living environment who had been affected by the disaster, more specifically, the opening of a dormitory, securing of transportation, and opening of special nursery schools were conducted.

(ii) For Nursing that is dispatched

In addition, request for dispatch of nursing was being made from outside of the disaster area to hospitals of the same group, disaster countermeasure offices, and nursing associations, and they were also corresponding to acceptance of dispatches. Furthermore, living environments and work environments were being organized so nursing from outside of the disaster area can take place, along with correspondence to issues and troubles with regard to nursing.

Regarding the role of the hospital's nursing management during the disaster response phase, there are a number of reports of actual experiences, but there is not much research being conducted that clarifies the role of nursing during a disaster. For this reason, further research in the future, clarification of the role of nursing management, and the creation of core competency is necessary.

2) Nursing Outside of the Disaster Area During the Response Phase

Nursing from outside of the disaster area during a disaster will work at the affected hospitals and shelters of the disaster area as organizational dispatch workers or personal volunteers, and each will play the role as nurses.

(1) The Role of Nursing Dispatched to a Hospital

At the hospital, human resources are necessary for maintaining the medical functions after the occurrence of a

disaster, and it is now apparent that dispatched nurses play the role of compensating for the lack of human resources and a substitute role of filling in while the nurses working at the disaster site rests. With this, dispatched nurses were able to reduce the burden of the duties of disaster nursing. Furthermore, the hospitalized patients who were not able to talk about their disaster situation and feelings due to being considerate of disaster nurses who had been affected in the same way were able to talk to nurses outside of the disaster area. The dispatched nurses played a role that can only be fulfilled by them. In addition, the nurses of the disaster area were not able to talk to other nurses of the disaster area about his or her feelings due to the different disaster situations, however, there were nurses saying they can talk to nurses coming from outside of the disaster area and were able to cry for the first time. It can be said that this is also a role that can only be played by a nurse from outside of the disaster area.

In this way, it is now understood that nurses outside of the disaster area plays diverse roles as providing support for disaster nurses such as substituting for nurses inside of the disaster area at hospitals, providing emotional support, and being someone to talk to about the disaster. In addition, for patients, the nurses outside of the disaster area plays the role of providing nursing care in the place of disaster nurses, and being someone they can talk to about the disaster. It is now understood that these nurses outside of the disaster area has their own individual role.

(2) The Role of Nursing Dispatched to a Shelter

At the shelter, for residents who have evacuated, health consultations and screening of people who require special assistance were implemented, and also provided support of the health status and living conditions of the residents as a substitute for nurses who are lacking in the disaster area. Regarding the details, it is described in the ID13 report. Here, the same roles as the roles of nursing at a shelter described to this point was found, and there were no new roles to be specially described.

3) Nursing Dispatched from Outside of the Disaster Area Medium to Long-term

(1) Role of Nursing Working in Temporary Housing

In temporary housing, home visits are made for the residents, and support for the living situation and health consultations were implemented. And in playing a substitute role for the nurses working at the disaster site, they were providing support for the health status and living conditions of the residents. Regarding the details, it is described in the ID13 report.

Regarding the role of nursing within the disaster area medium to long-term, there aren't many documents at the hospitals, and there is a need for acquiring data through new investigations such as interviews. Regarding the role of nursing regionally, there are some activities that took place with nurses of certain regions, but there is not enough data to clarify a role, and an implementation of a new investigation is necessary.

4) Role of Nursing in the Preparedness Phase

In the preparedness phase, one of the roles is conducting activities of preparation for a disaster in the institutions the nurses belong to and in the regions the institutions belong to. Specifically, there are preparation activities for a disaster by the institution the nurses belong to and educational activities related to preparation for a disaster for the residents of the region. The specific examples of educational activities related to preparation for a disaster for residents of the region is described in ID8.

Regarding the preparation education for a disaster, it is the duty of nursing to provide the knowledge to protect oneself, to provide a place to share the knowledge one may have personally in preparing for a disaster, and to provide an opportunity for people to think about the preparation for a disaster in the region. The role of providing an opportunity to point the interest of the residents of the region to the preparation for a disaster is important. There have been a number of cases that have been reported where nursing teachers belonging to an educational institution implemented preparation education for a disaster for residents of the region. Furthermore, there are many reports of nurses belonging to a hospital implementing preparation activities at their own belonging institutions. However, there are not many reports of cases where the nurses belonging to a hospital implemented preparation education for a disaster for inpatients and outpatients, or cases where the nurses of the region implemented preparation education for a disaster for the people of the region. In order for many nurses to recognize that the implementation of preparation education which is one of the activities in preparing for a disaster is one of the roles as a nurse in the preparedness phase, it is believed that its development is necessary while including activity examples.

Activity 9

Title: To identify activities among support nurses coming from outside the disaster site

Description: The activities of support nurses coming from outside the disaster will be identify with interview to nuses experiencing care provision at the Great East Japan Earthquake. After obtaining results, it will be vali

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< Purpose >

The objective of this research is to make apparent the details of the health support activities conducted by public health nurses sent in from outside the disaster-affected areas, as well as the issues that they noticed, their self-evaluation of their activities, the nursing needs in areas struck by a massive natural disaster, and the roles and functions required of public health nurses that are sent in places outside of the disaster-affected areas. To achieve this objective, research was conducted in the following areas; and analysis of activity reports; analysis of experience-based reports. The following is a report on the results of each of these research subjects.

< Ethical Consideration >

The two surveys were conducted upon receiving approval from the Bioethics Committee of Sonoda Women's University. Details of the research follows.

Research 1: Analysis of activity reports

1. Target

Of the 1,257 reports written by public health nurses sent by B prefecture from outside the disaster areas (hereafter "dispatched public health nurses") to conduct disaster-response healthcare activities at A prefecture, which had received catastrophic damages from the Great East Japan Earthquake, a total of 1,072 documents were selected for this analysis after having removed those reports that failed to include basic information such as place of activity and its time period, as well as other documents such as calculation sheets. The documents were reports titled "Status Report on Making the Rounds of Shelters and of Visiting Homes" and "Status Report of Health Service Activities." Reports that were used were those that covered a seven-month period from March 2011 to October of the same year.

2. Method

Quantitative data listed in the "Status Report on Making the Rounds of Shelters and of Visiting Homes"—such as the numbers of staff, consultations/visits, and persons with symptoms—were tabulated, and its trends were analyzed.

Qualitative analysis was also conducted on what dispatched public health nurses felt were problems with the structure of operations. This information was gathered from the opinions expressed in the box provided in the "Status Report of Health Service Activities" for the nurses to write freely about such things as the conditions at the disaster site and the details of their operations.

Based on the results of these analysis, discussions were held on the nursing needs and the activities conducted by dispatched public health nurses in areas affected by large-scale disasters.

3. Results

Trends in the activities of dispatched public health nurses were discerned from the "Status Report on Making the Rounds of Shelters and of Visiting Homes." The sending of public health nurses from B prefecture to A prefecture started on March 14, three days after the disaster struck. In general, public health nurses from B prefecture were sent in pairs to each municipality, and by two-weeks after the disaster, the number of dispatched nurses reached a maximum of eight persons. Until about three months after the disaster, B prefecture continuously provided public health nurses to the shelters in teams of four. The sending of nurses continued until October. As for making the rounds of the shelters, until about three months from the disaster, one team would visit one to six locations in one day. As for home visits to those remaining in their homes, operations started eight days after the disaster and continued for two months, after which it gradually decreased. After three months from the disaster, the dispatched public health nurses began making the rounds of people in temporary housing. The activities of these nurses focused on providing support at temporary housing until about four months after the disaster, up to the period when people started getting used to their life in temporary housing. After half a year from the disaster, the number of dispatched public health nurses providing support at temporary housing had decreased. At the shelters, the number of people who needed follow-ups on physical concerns was about 60 persons per day. These cases started immediately after the disaster, with the most coming one week after the disaster in which more than 150 persons needed to be seen in on day. After one month from the disaster, the number of people requiring follow-ups for physical concerns had declined dramatically to less than 10 cases. As for people requiring psychological follow-ups at the shelters, although the number was low immediately after the disaster with only a few cases per day, this number increased steeply to 40 cases in one day after one week from the disaster. Although the number of

persons requiring psychological follow-ups was less than those requiring physical follow-ups, a few cases required long-term follow-ups. Looking at the trend in the conditions of persons who needed follow-ups, up to about two months from the disaster, most of the cases were those who had chronic illness that required continuous medicinal and other treatment, such as high blood pressure, psychotropic drugs, diabetes, and dialysis. After two months had passed from the disaster, the number of follow-ups for particular diseases declined to only a few cases.

From the details described in "Status Report of Health Service Activities," it was revealed that there are 13 categories in which the dispatched public health nurses felt that there are problems with the current system. These categories are shown in brackets ([]) below. Immediately after the disaster, issues related to providing assistance at the disaster site were [establishment of a base and structure of operation] as well as [acquiring an understanding on what needs there are in times of disaster involving catastrophic damages and large number of shelters]. After relief activities were started at the disaster areas, there were problems in sharing information and in gathering operational results, arising from the fact that countless people were involved in providing assistance to the disaster area. These problems can be placed into such categories as [information sharing between the cities and towns of the disaster-stricken areas and the public health nurses from the prefectural health centers], [information sharing between public health nurses from the disaster areas and the public health nurses from outside the disaster areas], [information sharing between different occupations and support teams within the community and shelters], and [gathering operational results, such as of visiting shelters and homes]. As the relief activities lengthened into the long-term, groups that had been in the area immediately after the disaster began to pull out or change their system, which gave rise to such problems as [ensuring the availability of health and medical assistants at the shelters] and [developing a system of healthcare activities for the long-term post-disaster period (restoration period), after outside support groups have pulled out]. Moreover, there was the need to provide [support towards the physical and mental wellbeing of public health nurses and staff in the disaster areas] who were working without rest from the time the disaster occurred. Another important issue was in coming up with [measures to prevent contagious diseases at shelters] when there was a lack of a hygienic environment. When people started moving into temporary housing, it became necessary to change the support system, which had previously been centered at shelters, to [creating a support system for residents in temporary housing]. Also, the [influence of the healthcare system practiced during ordinary times] was significant in how it affects healthcare activities during times of disaster, thus creating [conflict among public health nurses in determining concepts and policies for proceeding with healthcare activities after a disaster].

4. Considerations

Public health nurses are sent to disaster-stricken areas from non-affected areas after a few days from when the disaster strikes. Thus, in the meantime, it is important to answer healthcare needs within the disaster areas with the limited number of people available, and at the same time, make preparations in creating a system for accepting public health nurses sent in from outside areas.

Activities of public health nurses changes with the changes in the living locations of the disaster-affected people, beginning with making the rounds of the shelters, and after one week from the disaster, changing to making visits to the homes, and after three months, changing to visiting temporary housings. Where the dispatched public health nurses should be allocated needs to be predicted based on the size of the disaster and the location of where the people affected are residing, and groups of public health nurses must be formed accordingly. Another effective means would be to request support from the national government as well as the Japanese Nursing Association.

As for the status of people at the shelters who have conditions that require follow-ups, the peak in the number of people having either physical or psychological issues came at one week after the disaster, thus showing that a system for providing healthcare and medical services must be developed at an early stage. Many of the people requiring follow-ups needed continuous medicinal and medical treatment, thus pointing to an urgent need to develop a structure to provide continuous medical treatment for such issues as high blood pressure, psychological illness, and dialysis. Also, it was found that a support system that begins early and continues over the long term is needed for people requiring psychological follow-ups.

Many problems were made clear from the details given in the activities report. Some of the reasons for the problems were due to the fact that the areas affected by the Great East Japan Earthquake were large in scope, and because relief activities needed to be provided starting from a situation where the staff did not yet have a base of operation. An operation base serves as a place for sharing and collecting information, as well as to give overall supervision. Thus, what was brought to light was the importance of creating an operation base in some level before actual operations begin. As many people become involved in disaster-relief

operations from both in and outside of the affected areas, the issue of sharing and collecting information became a major problem. The reason for this was because the scope of the disaster was large, and as the local government organizations were also devastated, it could not serve its function of providing overall supervision. Thus, it is necessary to create a system, not only within a prefecture but also across the board in coordination with other prefectures, that prepares for large-scale disasters of a similar or greater scope as the Great East Japan Earthquake. Furthermore, information other than those related to healthcare and medical services need to be shared in order to better support the people affected by the disaster. This points to the legitimacy of creating a collaborative system, such as holding regular meetings with participation by people in a wide variety of fields. Sharing information is important towards taking effective actions, and to realize this, it brought to attention the importance of gathering information on operational results and of organizing records. A standardized format for keeping records needs to be created, in a manner that would make it possible to share information depending on the type of disaster. In developing this format, it should use as reference the activity records and lists of people requiring follow-ups that were developed during the Great East Japan Earthquake. As for operational structures during disaster, this is greatly affected by operational structures that are practiced during normal times. Thus, even during ordinary times, people and organizations must work closely together, and public health nurses need to put into practice a method of operation that allows them to have a comprehensive understanding of the situation within the area that they are responsible.

Research 2: Analysis of experience-based reports

1. Target

Of the 202 "Experience Reports," written after their return by public health nurses who were dispatched to A prefecture (from March 13, 2011 immediately after the Great East Japan Earthquake until November 9 of the same year) about what they had experienced at the disaster site, 96 reports written by those who had been dispatched as public health nurses to B prefecture were used for the analysis.

2. Method

Qualitative and recursive analysis was conducted.

As for the method of analysis, after a note was created of the experience-based reports that were read and considered to qualify for this analysis, sentence segments were extracted from texts that had significance. Later, it was divided into the four categories of "activities of public health nurses to support the disaster areas," "healthcare in disaster areas (side accepting support)," "preparations during normal times (training, system development)," and "expectations towards public health nurses of B prefecture," and a code matrix was developed in accordance to the natural disaster cycle.

3. Results

Experience-based reports provided by 96 dispatched public health nurses were based on their experience from being sent to the disaster area one or two times. The 804 sentence segments acquired from the reports were largely divided into four areas in following with the analysis procedure, and a code matrix was developed, whereupon 21 categories were extracted. The following shows the categories in brackets ([]), and the codes in chevron (< >).

1) Activities of dispatched public health nurses

The following 12 categories were extracted: [team structure: Union of Kansai Governments], [team structure: coordination among multiple occupations], [team structure: staffing structure], [development of a base of operations], [meetings], [care for staff in disaster areas], [hand-off to succeeding dispatched team], [format for record-keeping], [division of work of dispatched teams], [structure for dispatch activities], [information management at the disaster area], and [thoughts of dispatched public health nurses]

Sending of public health nurses to the disaster area this time was conducted in coordination with special municipalities (Union of Kansai Governments) and prefectures. Thus, <information management>, <safety and security>, and <effective operations> were considered to have been enabled by [team structure: Union of Kansai Governments]. Also, <timely relief activities> were enabled through [team structure: coordination among diverse occupations], and also showed the necessity of <dispatching teams for mental care at an early stage>. As for [team structure: staffing structure], it showed the need to <develop a team that includes drivers and a person who will serve as point of contact> that takes consideration of the people's <experience in being dispatched for disaster response, years of experience as a public health nurse, and the possession of a driver's license>.

For [development of a base of operation], it was stated that <setting up the base with tents, etc.>, <acquiring a means of communication>, and <acquiring cars, maps, and items> are necessary.

For [meetings], it was stated that meetings are <effective in finding out the current situation and its issues>.

but that there are also problems, such as <a need for a place to liaise with public health nurses in the disaster area> and <a need for a place to exchange information with people dispatched for purposes other than healthcare].

For [care for staff in disaster areas], due to the <extreme fatigue> of local staff, <importance of providing mental care> and <a need to setting up a proper environment such as providing a place for the staff to rest > were stated.

For [hand-off to succeeding dispatched teams], it was noted that the following enabled an effective transfer of operations: <handing over time charts on the area's situation and the aid received>, and <resolving feelings of insecurity by acquiring information from dispatched persons by e-mail and other means before being sent in>. However, problems in <the need to share the overall flow and course of direction when the dispatch extends over a long period of time> were also noted.

As for unifying the [format for record-keeping] and [division of work of dispatched teams], there were problems with <liaising and coordinating with multiple municipal organizations in the dispatched area> and in <clarifying the division of roles between the municipal organizations in the disaster area and the supporting organizations>. For [information management at the disaster area], there were issues with <the need to form an information management system of people requiring follow-ups from the time immediately after the disaster> and <the need to create a system of follow-ups that can be continued when the people move from shelters to temporary housings>.

For [structure for dispatch activities], issues such as <the need to conduct self-sufficient operations that will not be a burden to the disaster areas> and <the need to supplement the local health centers in the disaster areas> were noted. There were also issues raised on <providing psychological care to dispatched staff> and <developing a dispatch system that allows the provision of long-term support>.

As for [thoughts of dispatched public health nurses], attention was also given to <the stress of staff providing logistical support to dispatched personnel>, showing that people <received shock from having seen the situation in the disaster areas> and <felt strong stress from the fear of aftershocks and tsunamis>. And as the public health nurses conducted their activities, they felt that <the starting point for public health nurses in their operations is to show deep understanding towards the residents>, and raised the need to <conduct activities that grasp the current situation and have a clear course of direction towards the future>.

2) Activities of public health nurses at disaster areas (side accepting support)

The three categories of [structure of activities], [environment of activities], and [deployment of activities] were extracted.

For [structure of activities], there was a need for <establishing a clear line of command from normal times> and for <leader public health nurses in disaster areas to have the wisdom and skills to enable them to coordinate operations>. As for the [environment of activities], the necessity of <acquiring means of communication> and <managing the physical wellbeing of the staff> were noted.

For [deployment of activities], public health nurses are asked to perform a <variety of operations such as operating the shelters, distributing food, removing debris, burying the dead, acquiring temporary housing, and coordinating volunteers>. It was also stated that there was a need to <prevent problems of alcohol and isolation> as well as to <take measures against heatstroke and food poisoning at shelters and temporary housings>.

3) Preparations during normal times (training and system development)

The five categories of [cooperative structure between prefecture and towns in times of disaster], [cooperative operation of related organizations], [training and system development for activities by public health nurses in times of disaster], [development of a dispatching system], and [preparations towards disasters] were extracted.

It was noted that [cooperative operation of related organizations] was an issue, such as the development of a [cooperative structure between prefecture and towns in times of disaster], as well as <increasing public awareness of local residents on disaster preparations>, <management system in accordance to the disaster area>, and <including an operation manual for dispatches of staff made by Union of Kansai Governments>. For [training and system development for activities by public health nurses in times of disaster], there was the need to <pass down information based on experience from being dispatched during times of disaster>, <conduct regular training>, and <develop personnel who can act as leaders and coordinators in times of disaster>. To realize this, it is necessary that <public health nurses continue to have an attitude of wanting to improve their skills on a daily basis>.

As for [development of a dispatching system], it was stated that there is a need for <reorganizing the manual of operations for public health nurses> and <indicating a dispatching standard for sending nurses during times

of disaster>. As for [preparations towards disasters], it was noted that <developing and saving a list of persons requiring support> and <allocating all prefectures with unified items to be sent out in times of disaster > were necessary.

4) Expectations towards public health nurses of B prefecture

There was a large amount of <trust in public health nurses of B prefecture from having experienced a major disaster in the past themselves>, and they were able to conduct <activities that reflected the experiences from past disaster>, and were asked for advice on <planning the allocation of relief groups, timing of transitioning into regular operations> among others.

4. Considerations

An analysis of the experience-based reports showed that there were problems in developing a system and creating an environment for enabling smooth operations at the site of the disaster, and that there is a need to be prepared from normal times.

In terms of equipment and other physical aspects, likewise with Research 1, there was a need to establish an operation base for taking action within the disaster area. Thus, this indicated the necessity of acquiring and setting up such items as tents, communication equipment, and means for mobility. Of particular note, with regards to this particular case of dispatch, it is believed that meaningful operations was made possible because they were able to acquire and establish a base of operation quickly by using the items brought over by B prefecture. Therefore, this shows that establishing an operation base is of high priority upon first arrival, in case of conducting dispatched operations.

As for the structure of the dispatched teams, B prefecture sent in the teams from a Union of Kansai Governments in their special local government organization. Thus, it allowed them to acquire a broad and reliable information network, which made it easier to understand the overall situation of the disaster and to know what measures are being taken, which also gave safety and security in the environment of where they were providing relief operations. By working as a member of a large organization, it is believed that the public health nurses were able to go on with their activities with a sense of being guaranteed of their safety, while also having access to reliable information. Meetings that were held at the site of the disaster were used effectively as a place for exchanging information. But in order to make enough time to perform their relief activities, they needed to figure out ways for selecting members who would participate in such meetings, and find methods for exchanging information. This shows that there is a need to figure out a way for liaising with the public health nurses in the disaster area. Creating a common format for record keeping was raised as one way of enabling such sharing of information. If there is a standardized record-keeping form that can be used by public health nurses nationwide, this may further enhance the speed and accuracy in managing information when staffs are dispatched in future disaster.

While there was much confusion at the disaster site from this massive disaster, the handover of jobs from one dispatched team to the next was considered important. Thus, those working at the site found ways to manage information and to share information as necessary, so that the operations being performed would be continued by the succeeding teams. It is believed that the effectiveness of handover operations were continuously improved by the individual efforts made by the dispatched public health nurses in coming up with ways to conduct the handoff and to figure out how to make them more effective.

However, public health nurses in the disaster areas were themselves victims of the disaster, and as the dispatched public health nurses had also seen first hand the catastrophe brought by this unprecedented disaster, they all held stress and psychological shock. B prefecture determined that they needed to provide psychological support towards the staff in the disaster-affected areas, and sent in a team for providing mental care from an early stage. However, psychological care is also necessary for the dispatched staff, and thus, it is believed that care for the psychological wellbeing of the dispatched staff must be provided after they return to their homeland.

For the side of the disaster-affected areas, in order for them to accept dispatched public health nurses in an effective manner, the key lies in having a health nurse in the disaster area who could be counted as a leader, and who has good coordination skills. As for dispatched public health nurses, they must recognize the need to establish public health nurses who can act as leaders and coordinators even during normal times, and as such, the issue has been brought to attention on the necessity of nurturing such public health nurses. This is an important issue that needs to be incorporated into the training provided to current public health nurses. Moreover, as preparation during normal times, there is a need to develop a list of people who requires assistance, as well as a list of items that are needed when dispatched. These are concerns that are necessary from the initial moments immediately after a disaster, both on the side of the public health nurses in the disaster area and by those who are being dispatched there. Thus, these issues must be in readiness in

preparation for disaster.

By having the public health nurses of B prefecture reflect back on their experiences and write a report on their activities from their dispatch after the Great East Japan Earthquake, it helped them to discover the problems that lie in healthcare operations with regards to health and crisis management. They are now trying to reflect these discoveries into making preparations for future disasters. By reviewing the problems that were extracted from such records and reflecting such findings into the disaster manual for public health nurses, it will help the public health nurses to pass down their operations in times of large-scale disaster (activities of public health nurses at the disaster site, activities of dispatched public health nurses) to future public health nurses.

< Summary >

As a result of combining the report analysis, the details of healthcare activities in times of massive natural disasters, and how it changes with the times, were made clear. Moreover, the following were noted in how operations should be conducted by both the public health nurses in the disaster area, and the public health nurses that had been dispatched from outside.

The following issues on providing support from outside of the disaster area were raised: (1) problems related to the disaster relief system; (2) problems related to information management; and (3) the needs in the disaster areas and the measures to answer these needs. The report enabled being able to see these issues from the perspectives of both the side of those who send dispatched personnel, and from the side of those who receive the dispatched personnel; and it is believed that effective operations can be conducted by coordination between both sides. Also, in order to conduct effective dispatch operations for disaster relief, what was discovered was the importance of being prepared for disasters during normal times. It is also important to keep a record of activities, as well as collect details of activities conducted, which can be used in preparing for future disasters and for developing manuals that can be used in a wide area. Such information will also prove useful in having the public health nurses reflect back on their activities, and for passing down information on their experiences to their colleagues.

In order to further develop a generalized understanding of how to accept dispatched public health nurses from outside of the disaster area in times of massive natural disasters, as well as in how to receive dispatched public health nurses among others, the gathering and analysis of data will be continued in the future. This work was supported by Pfizer Health Research Foundation and JSPS KAKENHI Grant Numbers 23593204.

2. Please briefly describe your collaboration with WHO in regards to the activities of the WHO collaborating centre during the past 12 months (e.g. means of communication, frequency of contact, visits to or from WHO). Please feel free to mention any difficulties encountered (if any) and to provide suggestions for increased or improved communication (if applicable).

Regarding the collaboration with WHO in 2014, there was attendance at a conference held by WPRO and a lecture jointly held with WKC. At the lecture held by our institute, the head of WKC gave a lecture, and at a forum hosted by WHO, the head of our institute gave a lecture.

□ · Attendance at a Conference Held by WPRO

First Regional Forum of WHO Collaborating Centres in the Western Pacific Region was held on November 13th and 14th at Manila, Philippines. Two of faculties joined in this forum

At the forum, the activities of our institute were introduced with a poster. Mainly, it consisted of the methods of providing care during a disaster and the activities and research involving the Great East Japan Earthquake. And opinions were exchanged with other faculties of WHOCC that had an interest in disasters and nursing. In particular, there were chances to talk with a person working on the creation of a disaster prevention manual for handicapped children, and to exchange opinions about each other's activities and research. It was beneficial.

Furthermore, with the Human Resources for Health group, we talked about specialized education and basic nursing education, and whether we can look to create an educational system by utilizing the strengths of each of the WHOCC. First, the need for sharing strengths, such as what fields of post MDGs the activities of WHOCC covers, was confirmed.

With this forum, it was recognized that WPRO regions, including Japan, is a disaster-prone region, and that it is a region carrying various health-related challenges. By exchanging opinions, creating relationships in a manner where the faces of one another can be seen, and getting to know each other's resources. This forum would be effective in having a common understanding for facing the health challenges of the WPRO region.

□ · Lecture Jointly Held with WKC

The theme of the lecture was creating resilient society and community for ageing populations in disaster situations.

Japan has reached a super-aging society, and as a result, in both the Great Hanshin-Awaji Earthquake of 1995 and the Great East Japan Earthquake of 2011, the elderly account for more than half of the deaths. It has impacted society in a big way. In this super-aging society, the challenge of emergency is to think about what sort of emergency correspondence is required during a disaster and how to assist the survivors. With this, as a specialist of nursing, the head of our institute gave a lecture with regard to how to create a resilient society and community for ageing populations in disaster situations. The lecture consisted of health consultations conducted by nurses in the temporary housing during the Great Hanshin-Awaji Earthquake and activities of creating circles among the residents, along with the introduction of the activities of "Town Health Care Room" in each of the regions. Based on the results of the health/living surveys acquired through these activities, the lecturer stated the importance of support for the bodies of the elderly survivors and support on a social level.

□ · Lecture Hosted by Our Institute

Alex Ros, The head of the WHO Kobe center gave us a speech on the 10th anniversary of our institute. He affirmed our knowhow of research and education of nursing in disasters, and also gave us instructions about new movement of WHO in the near future. The summary of his speech follows below.

For the past decade, the School of Nursing of the University of Hyogo has conducted invaluable research and training for many countries, focusing on creating a more effective and resilient health workforce and community before, during and after a natural disaster or public health emergency.

The increasing worldwide frequency and impact of natural disasters and health emergencies increases vulnerability for over a billion people and cause enormous economic costs and social disruption. Next month we will commemorate the 20th anniversary of Great Hanshin Awaji Earthquake, and in March 2015, the Third United Nations World Conference on Disaster Risk Reduction (WCDRR) will review and update the Hyogo Framework for Action.

Japan is a world leader in designing and implementing universal health coverage (UHC), long term care insurance, as well as increasing longevity of its population through good health. Similarly, the University of Hyogo, School of Nursing has been sharing many lessons related to how nurses contribute to health and development, both from and to Japan.

Learning from the Great Hanshin Awaji and Great East Japan Earthquakes, it is very important to focus on both key vulnerable groups (e.g., aged, disabled), and the long term psycho-social needs of survivors, and first responders. Another priority is making sure that the health care delivery and public health systems are rebuilt and rehabilitated, with a focus on safe hospitals and clinics, and human resources for health.

The inter-relationship between global and local needs, action, and sharing of lessons will increase greatly.

The School of Nursing of the University of Hyogo, and its serving as a WHO Collaborating Centre, is a very important part of linking the lessons between Akashi, Hyogo and Japan with many countries around the world.

The WHO Kobe Centre will keep working closely with the University to achieve mutually desired goals.

□ · Lecture Hosted by WHO

In relation to the UN World Conference on Disaster Risk Reduction held in Sendai in March of 2015, a forum was held hosted by WHO, UNAIDS, UNFPA, and UNISDR with the theme of "Protecting the People's Health from Disaster Risk." In this forum, there were seven sessions, and the head of our institute gave a lecture in the session of "Health in Disaster Recovery & Rehabilitation Phase of Emergencies." The theme of the lecture was "Lessons from the Great Hanshin-Awaji Earthquake (Kobe)." After the disaster, it is important to support the health and life of the survivors in the med and long term, and "home visits" and "health consultation" were conducted after the Great Hanshin-Awaji Earthquake. With this activities, the understanding of the health status of the survivors, connection with the appropriate specialists, and support for the survivors to live a healthy life were possible. After the Great East Japan Earthquake, in a joint effort with Miyagi University located in the disaster area, "homes visit at the temporary housing" and "health consultation" were conducted. An explanation was given that the institution was playing a part in the system of supporting the health of the residents with the cooperation of related institutions in the region.

3. Please briefly describe any interactions or collaborations with other WHO collaborating centres in the context of the implementation of the above activities (if any). If you are part of a network of WHO collaborating centres, please also mention the name of the network, and describe any involvement in the network during the last 12 months.

Regarding collaboration with WHOCC, there was attendance at a conference sponsored by WHOCC Global Network, submission to a magazine published by WHOCC Global Network, attendance at an APEDNN conference where other WHOCC chapters also attended, and a collaborating research was conducted with other WHOCC.

□ · Submission to the magazine LINKS

At the WHOCC Global Network related to nursing and midwifery, in order to share the results of research and activities of each of the WHOCC, a magazine is published. In the magazine, as an activity of WHOCC, an article regarding support for an academic conference for knowledge building for disaster nursing was submitted. The article is the following.

“The Research Institute of Nursing Care for People and Community (RINCPC), University of Hyogo, aims to support people around the world in order to live a healthy life by promoting the development of disaster nursing. To promote the development of disaster nursing, it needs to promote accumulation of knowledge and sharing of experience in disaster nursing. A global academic network is one of the strategies that researchers around the world share their knowledge and experience. One such world-level network is the World Society of Disaster Nursing (WSDN). RINCPC, whose executive director has also served as chairperson of the WSDN, has endeavored to manage and organize for activation of academic society as one of our roles.

On June 21 and 22, 2014, the 3rd International Conference of WSDN was hosted by Chinese Nursing Association in Beijing. RINCPC supported organizing the conference by providing advice on the conference program, thereby enabling participants to gain knowledge and share their experience in disaster nursing. This academic conference, which was attended by participating researchers from 25 countries, included active discussions and sharing of knowledge and experience. The conference also supported participating researchers to build their networks. Furthermore, the results of our research projects were presented at the conference, thus contributing to building knowledge on disaster nursing.

RINCPC will continue to contribute to people's health through the development of disaster nursing by promoting sharing of knowledge and experience and expanding various networks for disaster nursing.”

□ · Attendance at an APEDNN Conference

We sent one of our faculties to Asia Pacific Emergency and Disaster Nursing Network (APEDNN) conference which was held between 20th November, 2014 to 24th in Wuhan, China for sharing information about nursing supportive network in disasters. We also demonstrated our knowledge gained from the Great Hanshin Earthquake.

Moreover, research results about the Nursing Supportive Network in the Great Eastern Japan Earthquake were presented as well. In details, how the nursing system worked and adjusted itself to meet the needs during the disaster, the continuity of nursing support in disasters and the mechanism/effects of the cooperative/supportive network were clarified by analyzing two years literatures after the GEJE happened. During the conference, experiences and knowledge about the GEJE were shared and we have got a hint of how to build a effective supportive nursing network in disasters.

□ · A Pilot Study for a Survey on Health-related Lifestyle and Psychosocial Health Behavior among Adolescents in Six Asian Countries: A Report based on the Japanese Adolescents' Data

1. BACKGROUND

For some Asian countries with a declining birthrate and a growing proportion of elderly people, there are high expectations for the young people. Therefore, children in these countries might get a lot of pressure from the society, and it seems they might have a common problematic life style and health behaviors among the countries. However, their actual conditions are not well documented so far. Hence the researchers from World Health Organization Collaborating Centre in 6 Asian countries decided to conduct a survey on health-related lifestyle and psychosocial health behaviour among adolescents. Prior to an international survey, we performed a pilot study. In this summary the results obtained from Japanese data are reported.

2. PURPOSE

The purpose of this pilot study is to describe the lifestyle and psychosocial health behaviors among adolescents in Japan. This report focuses with psychosocial factors among adolescents especially in relation to the sleep quality and habits.

3. METHOD & MATERIAL

1) Participants & Data collection

In this survey we selected two elementary schools in Tokyo and two junior high schools in Hyogo by convenience sampling method. The subjects of the study were adolescents who were 10 to 15 years old. The researchers visited the four schools and explained about the survey, then distributed the questionnaire to the students. The self-report questionnaires were filled out anonymously, and they were collected by mail or picked up at a later time by the researchers at the schools. The data collection was performed from October 2014 to January 2015.

2) Questionnaires

The basic attribute of the subjects was asked and following eight scales were used to assess their lifestyle, psychosocial health behaviors, and sleep quality and habits.

a) Pediatrics Quality of Life Inventory: PedsQL (Varni, Seid, & Kurtin, 2001). Subscales: Physical Functioning, Emotional Functioning, Social Functioning, and School Functioning.

b) Adolescent Lifestyle Questionnaire: ALQ (Gillis, 1997). Subscales: Physical Participation, Nutrition, Social Support, Stress Management, Identity Awareness, General Health Practice Awareness, and Safety.

c) Rosenberg Self-Esteem Scale: RSES (Rosenberg, 1965)

d) Strengths and Difficulties Questionnaire: SDQ (Goodman, 1997). Subscales: Emotional Symptoms, Conduct Problems, Hyperactivity/Inattention, Peer Relationship Problems, and Prosocial Behavior.

e) General Self-efficacy Scale: GSE (Schwarzer & Jerusalem, 1995)

f) Multidimensional Scale of Perceived Social Support: MSPSS (Zimet, Dahlem, Zimet & Farley, 1988). Subscales: Family, Friends, and Significant Other.

g) Depression Anxiety Stress Scales: DASS21 (Lovibond & Lovibond, 1995). Subscales: Depression, Anxiety, and Stress.

h) The Pittsburgh Sleep Quality Index: PSQI (Buysse, Reynolds, & Monk, 1989). Subscales: Duration of Sleep, Sleep Disturbance, Sleep Latency, Day Dysfunction due to Sleepiness, Sleep Efficiency, Overall Sleep Quality, and Need Meds to Sleep.

3) Ethical consideration

The present study was approved by the ethical committee board at the University of Hyogo. Permission for accessing the children in the school was obtained from each head master. Prior to the data collection from children, written explanation was distributed to the parents.

4) Analysis

Relationships between the sleep variables obtained from PSQI and the other variables obtained from the demographic data and seven scales were examined using Spearman's correlation coefficient test and Mann-Whitney U test. For all statistical analysis, IBM SPSS Statistics 22 was used, and the statistical significance level was set at $p < .05$.

4. RESULTS

Questionnaires were distributed to 1,253 students with a response rate of 69%. Among 869 respondents, 540 (62%) were elementary school students, and 499 (57%) were boys.

Although many variables had a moderately strong correlation ($.4 \leq r < .7$) with PSQI total score, there was no variable that had a strong correlation ($r \geq .7$) with the score. The variables having moderately strong relationship with PSQI total score are PedsQL (total score), DASS (total score), SDQ (Total difficulties score) among junior high school students. In addition to those variables, MSPSS (total score) had a strong relationship with PSQI total score among elementary school students. When analyzed separately by gender, girls had more number of items that had a moderately strong correlation than boys, especially among junior high school students the difference was more than three times. When sleep duration was divided into three based on 7 to 8 hours-sleep as a middle length, a significant difference was found for the length of internet use per day and many psychosocial variables except GES. Among junior high school students, shorter sleep duration was moderately correlated with depression score. Regarding the wake-up time, participants who wake up before 6:20 had a significantly higher Physical Activity score in ALQ scale. As for the bed time, children who go to bed after 22:00 had significantly worse scores in many psychosocial variables except the GES score only among elementary school students.

5. DISCUSSION

The present survey showed that low sleep quality and poor sleep habits were related to low quality of life, high perception of difficulties in daily life, low social supports, and depression among Japanese adolescents. Moreover, comparing with the boys, low sleep quality was associated with many more poor psychosocial variables among the girls, and the tendency was noteworthy among junior high school girls. Thus, these results suggested that we should recognize the elementary school students and the junior high school students are not the same as well as the boys and the girls are not the same when dealing with adolescents

sleep problems.

6. ACKNOWLEDGEMENT

We would like to thank all the children and teachers who willingly contributed to this survey. This research was supported by the Grant-in-Aid from Ministry of Health, Labor and Welfare.

7. RESEARCH MEMBERS in JAPAN

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REFERENCES

Buysse, D. J., Reynolds III, C. F., & Monk, T. H. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Journal of Psychiatric Research*, 28 (2), 193-213.

Gillis, A. J. (1997). The adolescent lifestyle Questionnaire: Development and psychometric testing. *Can J Nurs Res*, 29 (1), 29-46.

Goodman, R. (1997) The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581-586.

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales*. (2nd ed.) Sydney: Psychology Foundation.

Rosenberg, M. (1965). *Rosenberg self-esteem scale*. MD: University of Maryland.

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In Johnston, M., Wright, C., & Weinman, J. *Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs* (pp.35-37).

Windsor, UK: NFER-NELSON.

Varni, J. W., Seid, A., Kurtin, P. S. (2001). PedsQL 4.0: reliability and validity of the pediatric quality of life inventory version 4.0 generic core scales in healthy and patient population. *Medical Care*, 39(8), 800-812.

Zimet, G.D., Dahlem, N.W., Zimet, S.G. & Farley, G.K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52, 30-41.