

Report

**Advanced Education for Radiation Nursing Practice
and Training in Fukushima**
—Consideration of the Specialty of Radiation Nursing after
Completion of a Radiation Nursing Practicum—

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I entered the Radiation nursing program, at the Graduate School of Kagoshima University in April 2013. In the second year, after the accident at the Fukushima Daiichi Nuclear Power Station operated by Tokyo Electric Power Co., Inc., I attended lectures and participated in practicums in emergency medicine for radiation exposure and underwent practical training as a certified nurse specialist under the supervision of cancer nursing specialists in Fukushima Medical University Hospital. I recognized the importance of nursing based on theories and verbalized my performance for advanced practice nursing when I sought to become a certified nurse specialist for radiation nursing. I expect that radiation nursing specialists will improve systematic education and ongoing clinical post-graduate education for radiation nursing.

Key words: radiation nursing, advanced practice nurse, certified nurse specialist

1. Introduction

The use of radiation for healthcare has developed, advanced, specialized and expanded broadly. The Japanese people clearly recall the Great East Japan Earthquake and the accident at the Fukushima Daiichi Nuclear Power Station (nuclear accident) with significant fear and anxiety. The effects of the nuclear accident persist and radiation exposure remains an ongoing concern even though 4 years have passed since then¹⁾.

However, many nurses do not have the opportunity to take any radiation-related courses during their nursing

training. Prof. Kusama said that the main purpose of radiation nursing is radiation protection and safety in nursing. Therefore, it is important to make radiation *visible* and acquire systematic knowledge and techniques for radiation protection, including protection of the nurses themselves from exposure, as part of the basic nursing education along with practical experience²⁾.

The Graduate School of Kagoshima University started the radiation nursing specialist course in the first semester of the doctoral program in April 2012.

2. Education program of the radiation nursing specialist course

1) My background

My nursing work involved the care of patients undergoing radiotherapy of the head and neck. The goal for these patients includes both survival and completion

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of treatment, as scheduled, with the least incidence of adverse events during and after treatment. Patients who undergo chemoradiation often exhibit significant adverse events. Nurses frequently suffer as a result of the patients becoming exhausted during treatment and fear facing them. Some nurses feel inadequate to support these patients, resulting in distress.

During this period, I cared for patients suffering from mucositis and radiodermatitis and wanted to learn basic knowledge about radiation and understand the medical information in order to relieve patients of pain as much as possible. I entered the graduate school after working for 6 years as a nurse.

2) Curriculum of the radiation nursing specialist course
A certified nurse specialist (CNS) in Japan is a nurse with outstanding nursing performance in specific fields. The main work includes advanced practice, education, consultation, management, measures to deal with ethical problems and research. A CNS is required to complete a specialist course in a graduate school, which includes advanced practice nursing, and to then pass an examination set by the Japanese Nursing Association.

I completed the radiation nursing specialist program (26 credits). Students in this program receive 8 credits in common subjects, including nursing research, nursing education, consultation, nursing ethics and nursing management. Major subjects include 6 credits of basic radiology, radiation protection and clinical radiology, and nursing subjects include 6 credits of radiological diagnostic nursing, radiotherapy nursing and international radiation disaster nursing. After completion of these courses, students take a radiation nursing practicum (6 credits) in the second year.

3. Practical training in Fukushima

The radiation nursing practicum involved 3 weeks of work in Kawauchi Village (Fukushima Prefecture) and the Education Center for Disaster Medicine, Fukushima Medical University. After the nuclear accident Fukushima, I developed significant experience in lectures and in the practice of emergency medicine for radiation exposure. I gained knowledge on the current conditions after the earthquake and participated in local activities. Furthermore, I took part in the health consultation project, visited disaster areas, and observed and joined in the initial practice of treating injured patients with radioactive contamination; thus, I deeply understood their situation.

In the next program, I underwent 3-week practical training in Fukushima Medical University Hospital. The CNS of radiation nursing has not yet been established and a CNS of cancer nursing supervised me. I participated in

practice activities and was trained by the CNS of cancer nursing in clinical practice. I cared for two patients, in order to understand the role of practice and management in radiation nursing. Specifically, in supporting self-care for adverse events due to radiotherapy, I deeply understood the management of symptoms. Under the supervision of the CNS of cancer nursing, I understood the physical and mental pain of the cancer patients and was required to provide high-level nursing based on the QOL of patients and their family. I recognized the importance of having knowledge about radiation in order to understand the patient's background and support them to undergo treatment at ease.

While I underwent practical training, I always asked myself what is the CNS role in radiotherapy and what can I do? During the training, I recognized the importance of nursing based on theories and verbalizing my performance for advanced practice nursing and found the nursing tasks necessary for me.

4. Required performance

When utilizing radiation exposure in healthcare, it is important to control treatment with knowledge of radioactive contamination. Therefore, it is necessary to provide the healthcare staff with appropriate knowledge and to prepare and provide general healthcare as an essential role in the treatment. It is critical to work with accurate knowledge about radiation. In radiotherapy, exposure of patients to radiation is critical for I¹³¹ ablation and interventional radiology. It is necessary for nursing specialists to perform intentional intervention with accurate knowledge. Nurses who have been trained in radiation nursing can minimize the exposure doses of the healthcare staff with their knowledge about radiation protection and their experience/information as a nurse.

If radiation nursing is approved as subspecialty in future, I would choose radiotherapy without hesitation. I am proud of the specialty of radiation nursing in minimizing occupational exposure of nurses with knowledge of radiation protection, predicting adverse events based on the changes in the radiation dose and in assessing the patient's self-care.

5. Essential tasks for the specialty and problem-solving measures

In Japan, the CNS in radiation nursing has not yet been established. However, the CNS in radiation nursing was approved as a specialty field, with conditions, in 2014. If nurses who complete the education program work actively, the CNS in radiation nursing will become recognized by the public.

On the other hand, Hamaguchi *et al.* indicated that

nursing of radiotherapy for cancer has not been established. Consequently, nurses learn and practice nursing for cancer radiotherapy through trial and error³⁾. We can improve the care for patients, who may suffer from intractable problems, and their families, through cooperation between CNSs with specific knowledge and techniques in order to efficiently provide high-level nursing care, and liaison between different professionals.

Conclusion

The main problem is that while radiation is frequently used in clinical practice, there are no nurses who learn about radiation and can share their knowledge and experiences with others. I expect that radiation nursing specialists will improve systematic education and ongoing

clinical post-graduate education for CNS in radiation nursing.

Disclosure

The authors declare that they have no conflict of interest.

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