

Letter to the Editor

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Association Between Radiation Education and Knowledge on Thyroid Examination Among Medical Students in Fukushima, Japan

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We are writing this letter in response to a report from Horiuchi *et al.* which suggested the importance of radiation education in nursing education.¹ They concluded that evaluating the current nursing education system in Japan, which they consider inadequate, and building a new system that incorporates nuclear disaster experience, are urgent issues. We agree with their conclusions; however, it is not only nursing students who require education on radiation.

Since the Great East Japan Earthquake and the resulting Fukushima Daiichi Nuclear Power Plant (FDNPP) accident in 2011, social and professional attention regarding Fukushima has focused on whether radiation-induced cancers, especially thyroid cancer, have occurred in young people as a result. As a part of the Fukushima Health Management Survey,² thyroid ultrasound examinations are now performed on children and adolescents who exhibit no cancer symptoms.³ Examinees are properly informed about the test before undergoing the examination voluntarily because thyroid examinations can lead to the diagnosis of thyroid cancer, which is potentially much more harmful to the public than the effects of radiation on the human body themselves.⁴ Thus, we examined the proportion of students at a university in Fukushima who had knowledge of the advantages and disadvantages of thyroid examinations in order to examine our hypothesis that radiation education is beneficial for obtaining knowledge of thyroid examinations. The data were from completed questionnaires that were collected on November 24 and 26, 2020, from first-, second-, and third-year medical students, as well as first-year nursing students, who were living in Fukushima Prefecture at the time of the FDNPP accident. We compared the proportions of subjects with knowledge about thyroid examinations between the medical and nursing students.

In the third year at Fukushima Medical University School of Medicine, students learn radiation health risk science as an interdisciplinary subject that integrates basic medicine, clinical medicine, and life sciences, in a course entitled 'Radiation Biomedicine.' Therefore, we defined third-year medical students as the group that have received radiation education. The results of the present study show that the group that had received radiation education was significantly more likely to report having knowledge about thyroid examinations than the group that did not receive such education. Tsubokura *et al.* also reported that the average number of questions regarding daily practical and general scientific knowledge about radiation that could be answered in the questionnaire with evidence increased after the lecture, compared with before the lecture.⁵ Our results suggest that radiation education has the effect of increasing the proportion of those who have knowledge about the advantages and disadvantages of thyroid examination.

While thyroid examinations have advantages, they also have disadvantages, and we believe that it is important to fully understand both before deciding to undergo a thyroid examination. For this reason, we are confident that it is important to provide education on thyroid examinations, and that radiation education is necessary for medical students and students majoring any other subjects as well as nursing students.

Competing interests. There are no conflicts of interest to declare.

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