PRESENT SITUATION AND THE ROLE OF THE RADIATION CONTROL EDUCATION FOR HEALTH PERSONNEL BEFORE LEAVING SCHOOL

T. Orito, *S. Koga, S. Suzuki and *M. Nakamura

Department of Health Physics, School of Health Sciences, *Department of Radiology, school of Medicine, Fujita Health University, Toyoake, Japan

ABSTRACT

For purpose of investigating the present situation of radiological technologist education for radiation protection and control before leaving school, questionnaires were sent out to 28 school for radiological technologist in Japan.

For purpose of characterizing each school, it is permitted by the " Designation rules for schools and training schools for radiological technologist " to use 500 school hours for any of the subject, mainly special subjects, that are selected by the school. In investigating the 500 school hours which are left to the discretion of each school for characterization , some of these hours are used for radiation control-related subjects in 20 schools from which answers to questionnaires were obtained. Briefly, 15 to as many as 210 hours are spent for lessons regarding such subjects.

INTRODUCTION

Utilization of radiation in medical treatment has made a large contribution to society as a whole. On the contrary, radiation may bring about serious social problems not capable of being solved within the field of medicine, if used in an inappropriate manner. In this paper, the present status of radiation protection and control education for radiological technologist as health personnel before leaving school is investigated from the standpoint of the curriculums being taught and the results of a questionnaire for finding out the present situation of such education in individual schools are described.

METHOD AND DETAILS OF THE QUESTIONNAIRE

A total of 29 schools for radiological technologist exist in Japan. The students received until the year of completion are present in 28 of them. The questionnaire was sent out to the teachers in charge of radiation control in these 28 schools, with 20 of the answering the

questionnaire.

RESULTS OF THE QUESTIONNAIRE

For purpose of characterizing each school, it is permitted by the " Designation rules for schools and training schools for radiological technologist " to use 500 school hours for any of the subjects, mainly special subjects, that are selected by the school. Table 1 shows the proportion of these school hours assigned to the subjects related to radiation control. Only six of the schools had no classes in radiation control-related subjects. A varying number of school hours are assigned to these subjects in the remaining 20 schools.

Tables2, 3and 4 show the subjects which are also taught by teachers of radiation control, radiation health and related laws, respectively.

Table 1 Of the 500 Hours Left to the Discretion of Each School, the Following Number of Hours are Assigned as Extra Hours to Radiation Control-related Subjects.

Radiation control-related subjects are not included	6 number of school
15 hours	1
21 hours	1
30 hours	5
45 hours + 120 hours (only for students who selected the subjects)	1
50 hours	1
60 hours	1
70 hours	2
120 hours	2

The teachers of radiation control-related subjects are also in charge of various other subjects as well.

DISCUSSION

As leading experts to apply radiation to the field of medical treatment, medical radiological technicians have a much higher degree of knowledge and technological level. On the other hand, they may be less interested in radiation protection or control, due to the fact that they are experts. If they had received fundamental education for

Table 2 Names of Subjects Taught by Teachers also in Charge of Other Subjects

Number of subject	Total number of teachers	Number of subject	Total number of teachers
Medical act, et. al.	7	Practice of radiation physics	1
Radiation measurement	7	Radiation physics	2
Radiochemical practice	5	Image science	1
Radiation health	3	X-ray instrument experiment	1
Radiation control experiment	2	Radiochemistry	1
Radiation measurement experimet	2	Radiation engineering	1
Nuclear medicine technology	2	Instrumental engineering	1
		Anatomy for radiography	1
		Radiobiology	1
		Radio-pharmaceuticals	1
		RI experiment	1
		Single subject	1

Table 3 Names of Subjects Taught by Teachers of Radiation Hygiene

Number of subject	Total number of teachers	Number of subject	Total number of teachers
Radiobiology	8	Radiation physics	1
Single subject	5	Biochemistry	1
Anatomy for radiography	3	Photographic technology	1
Radiation measurement	2	Experiment on measurement	1
Medical introduction	2	Special lecture on nuclear medicine technology	1
Radiation control	2	Special lecture on clinical radiation	1
		Outline of radiation medicine	1
		Radio-pharmaceuticals	1
		Radiochemical experiment	1
		Biology	1
		Mathematics	1
		English for biology	1

Table 4 Names of Subjects Taught by Teachers of Related Laws

Number of subject	Total number of teachers	Number of subject	Total number of teachers
Radiation control	7	Radiation measurement	2
Paractice of radiation control	2	Experiment on radiation photography	1
Radiation control experiment	2	Radiation physics	1
Practice of radiochemistry	2	Practice of X-ray photographic technology	1
Practice photography	2	Nuclear medicine technology	1
Radiaion instrument engineering	2	Radiochemistry	1
Single subject	2	Radiobiology	1
		Radioactive drugs	1
		Radiological examination	1
		Jurisprudence	1
		X-ray photographical technology	1

radiation protection and control before they leave school, they would tion control, radiation health and related laws directly related to them were investigated from the standpoint of curriculums by means of carrying out a questionnaire in the present study. In investigating the 500 school hours which are left to the discretion of each school for characterization, some of these hours are used for radiation control-related subjects in 20 schools from which answers to questionnaires were obtained. Briefly, 15 to as many as 210 hours are spent for lessons regarding such subjects. These results suggest that radiation protection and control are considered very important by teachers actively engaged in the education of students who want to be radiological technologist. Radiation protection and control are expressed more clearly in curriculums for radiological technologist than for any of the other kinds of medical professionals. Moreover, many hours are used to lecture on these subjects. It is conceivable

from these findings that the role of radiological technologist in radiation protection and control is one of their most important tasks. To our surprise, however, the lessons on radiation control, radiation health and related laws are given by teachers who are also in charge of other subjects. The absence of true professionals may be seen by the fact that lessons on radiation control-related subjects are given by teachers who are in charge of a wide range of subjects. Taken altogether, it must be said that the content of education for radiation protection and control is seriously lacking, though these subjects are deemed important in the education of students who want to be radiological technologist. Accordingly, it may also be an urgent necessity to bring up the level of teachers specializing in subjects related to radiation protection and control. Taking this need into consideration, education for radiological technologist must be conducted not only in training schools and junior colleges but also at the university level as well. It is necessary to activity introduce these subjects into university education and to develop a system of radiation protection and control.

CONCLUSIONS

For purpose of investigating the present situation of radiological technologist education for radiation protection and control before leaving school, questionnaires were sent out 28 schools for radiological technologist. Based on the answers obtained from 20 of them, the following conclusions were able to be obtained.

(1) Of the 500 school hours left to the discretion of each school, 15 to 120 hours are assigned to radiation control-related subjects in 14 of the 20 schools.

(2) Since many teachers are in charge of classes of radiation control, radiation health and radiation-related laws as well as other classes, it is necessary to increase the number of teachers who are actually specializing in radiation control-related subjects.

(3) The range of related laws actually taught is wider than prescribed in the designation rules.

REFERENCE

1) Ministry of Education and Ministry of Health and Welfare: Enforcement of ordinances for partial revising of the designation rules for schools and training schools for medical radiological and X-ray technicians (1981).