5. Rudenchik M. In Primorye "four-legged psychotherapists" help children with special needs to learn to communicate with the world.- Russian Federationn News [Electronic source] URL: https://www.1tv.ru/news/2017-12-29/338760-v_primorie_
chetveronogie_psihoterapevty_pomogayut_detyam_s_osobennostyami_razvitiya_ nauchitsya_obschatsya_s_mirom (accessed date:16.01.2018)

6. Sharonova E.G. Social Rehabilitation of Schoolchildren in Cooperation with Nature / E.G.Sharonova //Pedagogics. - 2005. - № 6. – P. 55–59

7. Собака своим лаем вывела хозяина из комы, поразив врачей // Международный медиапроект Epoch Times URL: https://www.epochtimes.ru/sobaka-svoim-laem-vyvela-hozyaina-iz-komy-poraziv-vrachej-99058774/ (дата обращения: 16.01.2018)

8. Корейцы клонируют вынюхивающую раковые клетки собаку // medlinks.ru URL: http://www.medlinks.ru/article.php?sid=32667 (дата обращения: 16.01.2018).

9. Французские ученые научили собаку определять рак простаты по запаху // medkurs.ru URL: https://www.medkurs.ru/news/33693.html (дата обращения: 16.01.2018).

10. Эпилепсия и обучение // Невролог Волгоград URL: http://nevrologvolgograd.ru/yepilepsiya-i-obuchenie/ (дата обращения: 16.01.2018).

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AWARENESS OF YOUNG PEOPLE ABOUT IONIZING EFFECTS ON THE HUMAN BODY: A SURVEY OF MEDICAL AND NON-MEDICAL STUDENTS

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Annotation: This article is devoted to the analysis of knowledge and attitudes of young people to the ionizing effects on the human body, which is considered one of the potentially dangerous phenomena.

Key words: radiation, hormesis, prevention, ecology.

Introduction

Ionizing radiation defined as a stream of particles (electrons, protons, neutrons) emitted by atoms of radioactive materials. The effect of radiation on the human body is described in many guidelines, manuals and scientific publications [5, 6]. However, a single system for assessing the risk of ionizing radiation effects has not been

developed. Currently, there exist two models that can help to determine the danger of ionizing radiation. The first one is based on the generalization of the results obtained comparing the effects of large doses with those of small doses. Thus, even a small dose can increase the likelihood of cancer and other diseases [4]. The second model is based on the existence of a threshold dose below which radiation cannot cause the radiation hormesis. The concept of "radiation hormesis" is determined by the following fact: large doses of ionizing radiation are harmful to living organisms, but in small doses it can cause stimulation of a positive effect on the body, which is determined by the increase in the functions of cells, as well as an increase in the life expectancy of various biological objects [1, 2]. If the action of small doses is favorable for the body, it may be necessary to change the policy of rationing the maximum of permissible ionizing radiation the population is exposed to. Currently, the fact that it affects the health of many people, makes the problem of radiation hormesis relevant for the research [3].

The aim of the research was to study the knowledge of young people about ionizing radiation, the concept of hormesis and determine the level of awareness about the possible harm of ionizing exposure.

Materials and methods

In February 2019, we conducted a survey of 207 respondents aged 18 to 20 years, who were students of medical and non-medical universities in Yekaterinburg. The aim of the study was to evaluate students' awareness of ionizing radiation and compare data obtained from students of medical and non-medical specialties.

The questionnaire included questions on general knowledge of life safety and physics, as well as possible outcomes and precautions for radiation. In addition, there was an open question requiring a detailed answer concerning the awareness of radiation effects on the human body.

The results of the study and discussion

The survey involved 104 medical students and 103 non-medical students. We compared their responses and presented them in the tables below. Answers to questions about the general knowledge and awareness of medical students and non-medical students are presented in tables 1, 2.

Table 1

General attitude to radiation among students of medical (n=104) and non-medical (n=103) specialties

	Medical students, %	Non-medical students, %
Positive	5	2
Negative	38	69
Neutral	57	29

Based on the results, the general attitude to radiation differs significantly among medical students and students of other specialties.

Table 2

Awareness of medical (n=104) and non-medical (n=103) students about the impact of ionizing radiation on the human body

Question	Medical students, %		Non-medical students, %	
	Yes	No	Yes	No
Is there a link between cancer and radiation?	37	63	32	68
Are even small doses of radiation dangerous?	33	67	38	62
Do You know the concept of radiation hormesis?	16	84	3	97

Medical students as well as students of non-medical specialties are informed about the effects of ionizing radiation, but this results are unsatisfactory, as about 33% of participants from both groups answered incorrectly. As expected, concerning the issue related to the concept of radiation hormesis, a group of medical students showed better results compared to those in the second group, but the awareness remains quite low (less than 20%) among medical students too.

Conclusion:

In general, medical students know a little more about the effects of radiation than students from other universities. Medical students showed broader knowledge of the effects and possible consequences of radiation exposure including sickness, complications, and clinical signs. However, their knowledge is insufficient. Therefore, to improve the quality of research in the field of radiology, and in order to increase attention to the problem of hormesis, it is necessary to apply various methods of teaching young people, both from the general population and from the medical environment. It is especially important to spread knowledge about the effects and prevention of radiation exposure among students.

List of references:

1. Ivanovsky Y.A. Radiation hormesis. Are small doses of ionizing radiation favorable? / Y. A. Ivanovsky. - Vladivostok, 2006. - 86 pp.

2. Kuzin A.M. Ideas of radiation hormesis in nuclear century / A.M. Kuzin. - M.: Science, 1995. - 158 pp.

3. Morozova I.M. Radiological situation as one of the environmental problems of the city of Yekaterinburg / I. M. Morozova. - Yekaterinburg, 2015. - 70 pp.

4. Petin V.G. Analysis of the action of low doses of ionizing radiation on human cancer / Petin V. G., Pronkevich M. D. - Obninsk: fsbi mrnc Ministry of health of Russian Federation, 2012. - 39 pp.

5. Semenov S.V., Ionizing radiation in our life / S.V. Semenov. - Moscow: MIEE, 2009. - 3 pp.

6. Who Issue of ionizing radiation [Electronic resource] / world health organization.: Who, 1999. URL: https://www.who.int/topics/radiation_ionizing/ru/ (Accessed: 22.02.2009)