



Technical visit - a possible tool for public communication

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Introduction

Since 1895, ionizing radiation is a kind of radiation used throughout society. However, the population as a whole does not know as much about its concerns and benefits, associating the terms "radiation" and "nuclear energy" as evil, in other words this subject is not well understood by the greater public. As nuclear solutions like nuclear power are an integral part of society, the best method of gaining the public's confidence is through increased protection [1]. In addition, the general population has already heard of X-rays and ultraviolet rays, for example, but does not understand their effects on living organisms, because they do not know the difference between ionizing and non-ionizing radiation. They are not fully aware of the damages and benefits of radiation, ignoring much of their industrial applications. Therefore, these preconceptions point to the need to construct a more precise and grounded knowledge about radiations in a formal learning situation [2]. Thus, there is a growing need for the nuclear area to promote a more open dialogue with the public, increasing the public acceptance of nuclear energy, mainly due to the fact that it is a risk technology. Therefore, risk communication is directly associated with risk perception, which considers the difference between how the risk is perceived by the public versus how the risk is actually assessed and measured by the specialists. Indeed, the purpose of risk communication is not to force a shift between the divergent views of the specialist and the public, but it is a question of developing an understanding of these factors so that they can be considered and treated [3].

Methodology

The Institute of Radioprotection and Dosimetry (IRD), an institute linked to the Brazilian Nuclear Energy Commission (CNEN), responsible for radioprotection procedures, has been carrying out various teaching activities to improve the understanding of nuclear energy concepts, as well as offering continued education courses for professionals in the area. One of these activities is the Technical Visits, which are the guided visits inside the Institution, directed to a specific department or more departments.

To verify how the personnel of the Brazilian Armed Forces (in this case, Army and Navy), whose role will be to work during radiological emergency procedures, understanding nuclear energy, during the visit to the Emergency Division, this work has the objective of illustrating the value of the Technical Visit process and its contribution to the training in Emergencies and how it can improve understanding of technical concepts.

To measure the level of information of visitors was evaluated in pre and post-test. Thus, prior to the visit, a presentation was made of the activities of the IRD and a test was answered by the visitors, in which questions were asked about notions of radioactivity and about the activities of the Institute. After the visit, the same test was again applied. At the end, the answers were checked to understand the impact of the visit on the concepts of radioactivity and IRD activities.

The questions of the test were taken from the CNEN website and another source [4; 5], which analyzed the most frequent doubts in the area:

1 - What is the National Nuclear Energy Commission (CNEN)?



- 2 - What is radioactivity?
- 3 - What is the difference between irradiation and contamination?
- 4 – Do X-ray devices have radioactive material?
5. The area of a facility that has a higher level of radiation is called a controlled area.
a) True; b) False
6. During a radiation exposure, we can say that time and distance are factors that directly influence the absorbed dose.
a) True; b) False
7. Is a sheet of paper enough to shield the alpha radiation?
a) True; b) False
8. Irradiation of food prolongs its durability, however this process can contaminate the food.
a) True; b) False
9. Which of the following symbols is related to Nuclear Energy?

a)



b)



c)



d)

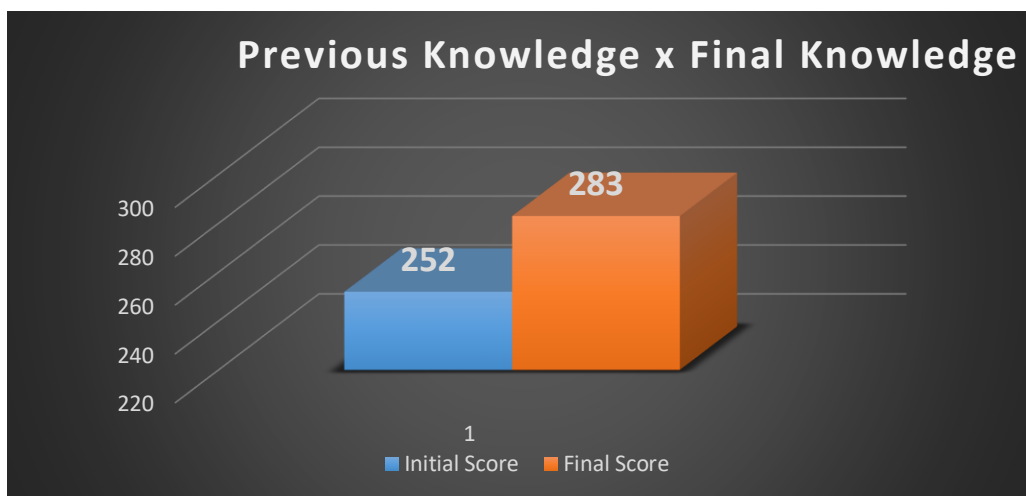


10. How well informed about nuclear energy do you consider yourself?
() Very well informed; () A little informed; () Uninformed

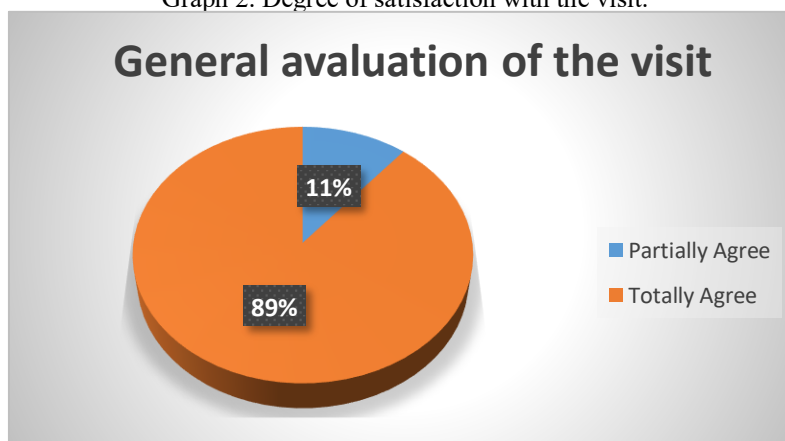
Results

The analysis of the tests verified the following results, presented in Graph 1 (comparison between before and after correct responses). Another questionnaire was about the degree of satisfaction with the visit, where it was asked whether the visit helped in understanding concepts about nuclear energy and emergency procedures (Graph 2). The results are tabulated in Graphs 1 and 2 as shown below:

Graph 1. Comparison between the answers before and after the visit.



Graph 2. Degree of satisfaction with the visit.





Regarding the visit to the Emergency Department, an explanation was made of the basic procedures to be adopted, and a practical activity was carried out with detectors using radioactive sources to be located in the teaching laboratory.

Conclusions

Although the visitors belong to the Armed Forces and work in the Emergency area, there was only an improvement in the accuracy of the answers by 11%, demonstrating that, even for the experts who work in the area, there are still some doubts regarding concepts and practices. Regarding the visit, the great majority considered it satisfactory, showing that the Technical Visit can serve as a great tool for public communication processes in relation to Emergency Communication. This need for improvement in communication is not only a constant dialogue with the public, but also the preparation of specialized personnel for moments of accidents or incidents that can educate the population about the true myths and risks in each situation, reducing fear and increasing assertiveness of prevention and containment actions. In conclusion, it is becoming increasingly necessary to deepen radioactivity knowledge through training and teaching tools.

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