

Factors Affecting Radiographers' Professional Lifelong Training Attitudes in Public and Private Healthcare Institutions

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Abstract

The main objective of this paper is to study the factors that affect the creation of appropriate conditions and trends in scientific training, lifelong learning and professional development of radiology technicians-radiographers, aiming to devise specialized training programs to meet the needs of each group. The research was based on questionnaires distributed to 130 technicians-radiographers who work in three representative hospitals, a public one, a private and one based on a University in the same health district. Data analysis has led to a number of conclusions related to age groups, gender, professional experience, general education level of the respondents and other factors. The main conclusion of the research is that there is virtually no real interest in additional scientific training because of several endogenous reasons mainly related to the education system and the lack of commercial incentives.

Keywords: Radiography, Lifelong Training, X-ray Departments, Healthcare Professionals, Biomedical Technology, Hospital Services

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1 Introduction

Lifelong training is of the utmost importance for health professionals, and radiographers are no exception. Radiography is affected by changes in health care, as it also happens to all healthcare professions. The only way for radiographers to remain competent, useful and accountable is through participation in lifelong training programmes.

The rapid growth of biomedical technology (LT-B.) offers new perspectives in medical imaging, new anticipations for humanity but also demand for specifically trained manpower [1, 2]. It is very important to find out about the post-graduate training possibilities and prospects for all involved in the use of radiodiagnostic equipment so that the most efficient operation of laboratories of medical imaging [3, 4] can be achieved.

The term "radiology technologists" will be used for the sake of brevity, including those who operate radiodiagnostic equipment, i.e. for 2 year –trained operators of medical imaging devices. The survey aims to determine the impact of various factors involving medical radio-technologists in different training processes and activities, which would make their involvement with the cognitive and professional object of their work more efficient.

2 Theoretical background

The modern hospital type and configuration of the hospital management has been based on hospital administration decisions in medical informatics [5] and biomedical technology [6]. The out-of-date technology, as well as the lack essential equipment has led in providing low-quality health services, resulting in making citizens-hospital employees to move to other technologically advanced countries in search of better working conditions or better health care [7].

The biomedical technology and its development affect the functioning health systems [8]. The costs and resulting profits (if demand does not decline) will increase due to the expensive services provided to the patient whenever the evolution of BIT is applied either on a therapeutic or diagnostic basis [9]. Tipping point in the service process is the maintenance of the medico-technical equipment at a high level of quality and operational safety [10, 11].

This can be achieved through programs of maintenance or replacement of equipment for proper handling and fully utilization of all the capabilities of the machinery taking into account specific markers for proper evaluation of usage data [12, 13]. Parameters that are supported by the right in-depth and ongoing training [14] and retraining of the personnel who makes use of the equipment BIT. The Commission of the European Union has approved an action plan for a comparative evaluation of medical equipment [3].

A large number of studies have been conducted on a number of health profession groups that produced differing results for deterrents to participation [15, 16, 17 and 18]. These studies noted the 'complexity and multidimensionality' of the issues involved. The complex nature of participatory behaviour makes it impossible to make generalizations from one group of health professionals to another. Of the demographics found to affect participatory behaviours, highest educational attainment has been the most cited demographic in the literature as a predictor of participatory behaviour [19, 20-27].

One of the most recent paper found on the topic [28] examined the quality and consistency of post registration training and development for extended role activities

undertaken by radiographers. Although the undergraduate curriculum has changed to some extent to accommodate expanded role requirements, much of the training does not, and cannot, take place until radiographers are qualified and are in post. The research also identified concerns among managers regarding the training currently available and indicated potential career disadvantages for radiographers receiving unaccredited development.

It is worth noting that no previous research has ever been found that relates to postgraduate training for the radio-technologists in Greece.

3 Research Methodology

For the needs of the survey a questionnaire has been developed which consists of nine questions to be answered anonymously. Data processing and analysis of the results was performed with the help of the statistical package SPSS version 14.

One hundred and thirty (130) copies of the questionnaire were printed and handed in as many radiology technicians employed in radiological units: a) of a University Hospital, b) of a public hospital and c) of a private hospital. The hospitals involved belong to the same geographic area and within the limits of the same Health Region. It should be stated that ultrasound clinics do not employ radiology technicians in any organization. All the laboratories of these hospitals have got classical x-ray equipment, mammography, tomography and some have got angiography suit and MR.

The questionnaire included questions related to:

A) the gender, the age group, the educational level (degree), the experience (estimated in years of total employment in all establishments), the attendance, or the lack of it, of various postgraduate courses within the last two years.

B) the contribution of companies manufacturing and marketing radiological equipment B-IT., the organization and performance of various postgraduate courses which the participants had got the opportunity to attend, whether ultimately attended or not.

C) the support provided by the administration of the institution where they are employed for further training programs.

Only the statistically significant findings are presented on the results of the survey ($\chi^2 \leq 0,005$).

4 Survey Results

Research shows that the majority of the radiology technicians attend several postgraduate training courses (Figure 1). The percentage of male professionals who do not attend any training (24%) is significantly lower if compared to that of female (41%).

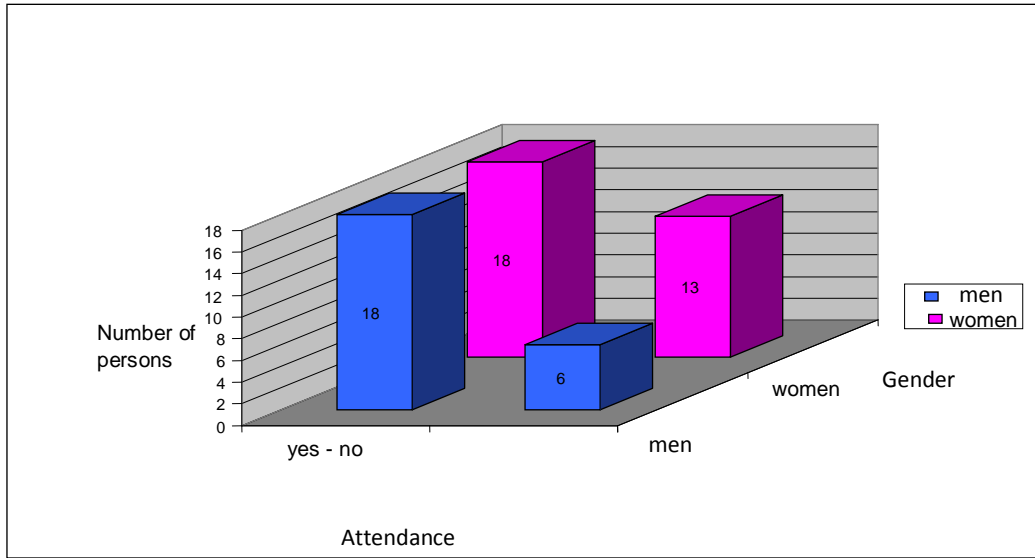


Figure 1: The impact of gender upon further training involvement – number of participants/attendance/gender

Most radiology technicians are older than 25 years. The numerical differences between radiology technicians who do not attend and those who attend training courses in any age group decline with age (Figure 2).

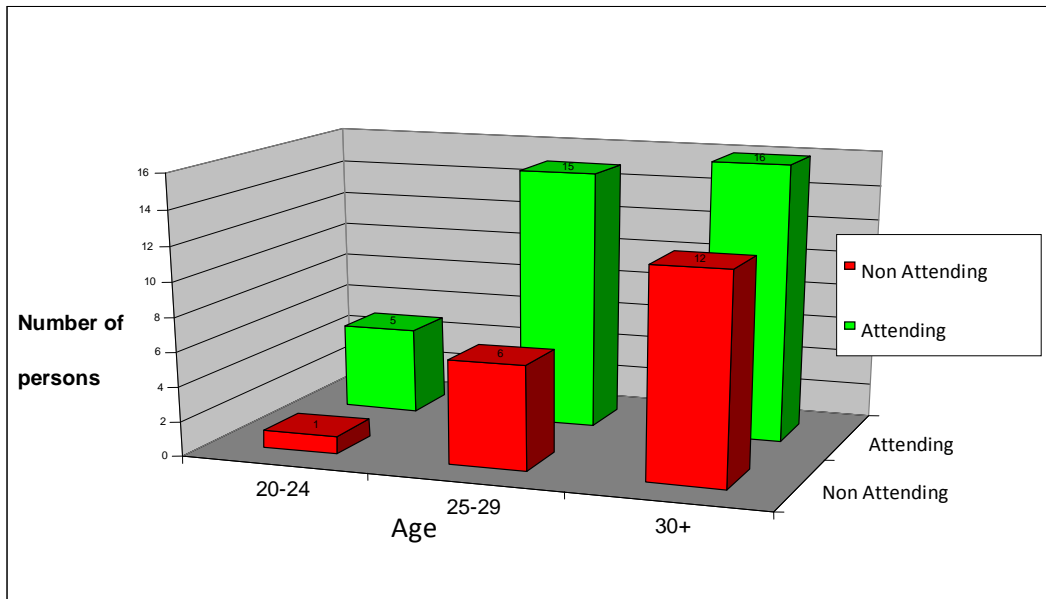


Figure 2: The impact of age upon further training involvement

The participants belonging to the group with the minimal education, i.e. employees with no radiography degree do not participate in this research by completing a questionnaire by choice. The graduates of the technological educational institutions (T.E.I.) and of the

professional training institutions (I.E.K.) staff almost equally the radiological laboratories used in this study (Figure 3).

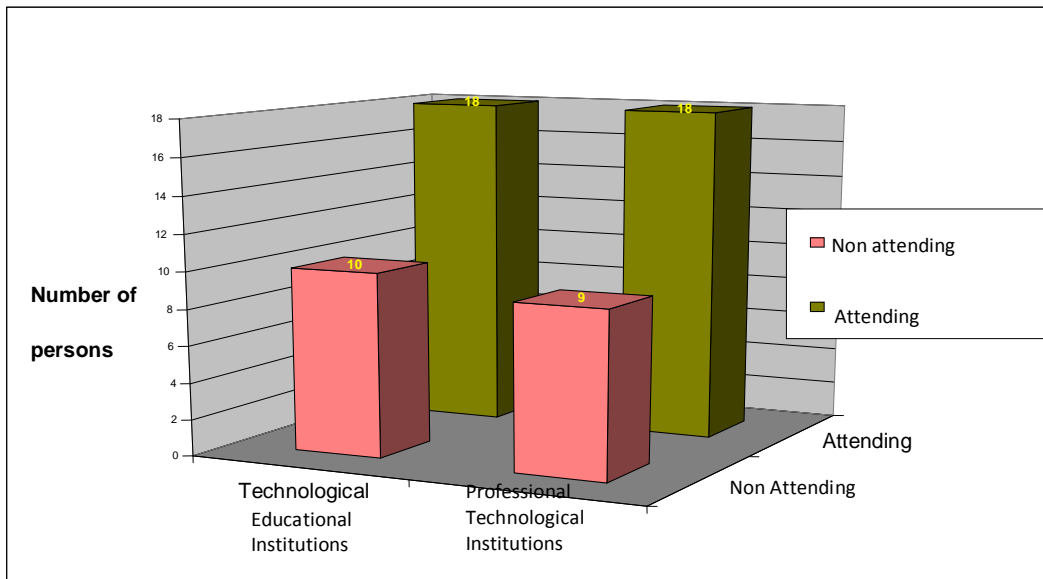


Figure 3: The impact of education upon further training involvement

It was, also, proved that the percentage of attendance of retraining courses is not reduced if associated with years of the total work experience of the participants. The difference appears to be slightly lower in those with experience of 3 to 5 years (Figure 4).

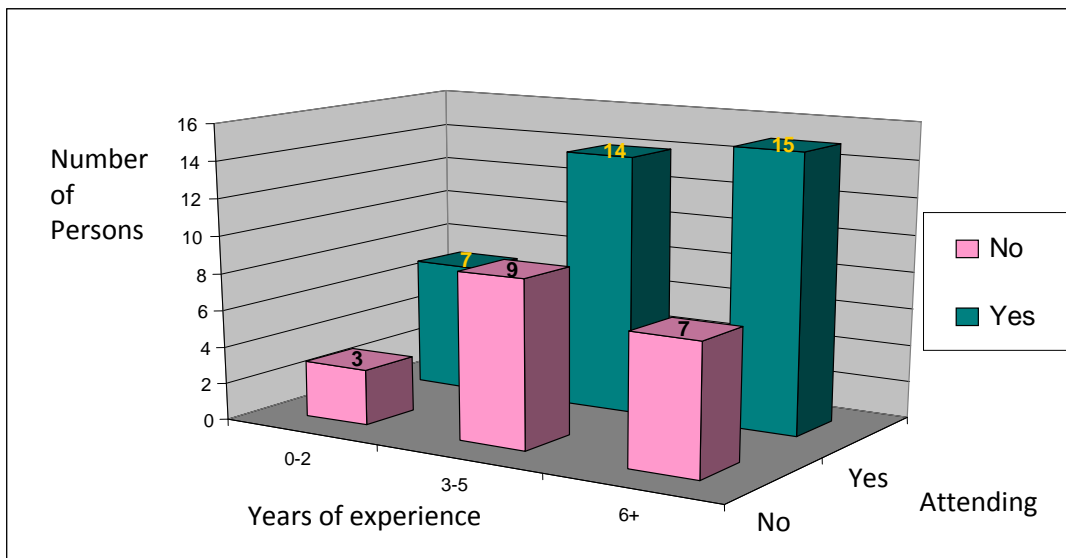


Figure 4: The impact of work experience upon further training involvement

The percentage of attendance of further training amongst radiology technicians of public and private sectors seems to be about the same. However, the radiology technicians working at the University Hospital laboratory seem to attend many more further training courses because medical technology companies contribute to the organization or the funding of these courses (Figure 5).

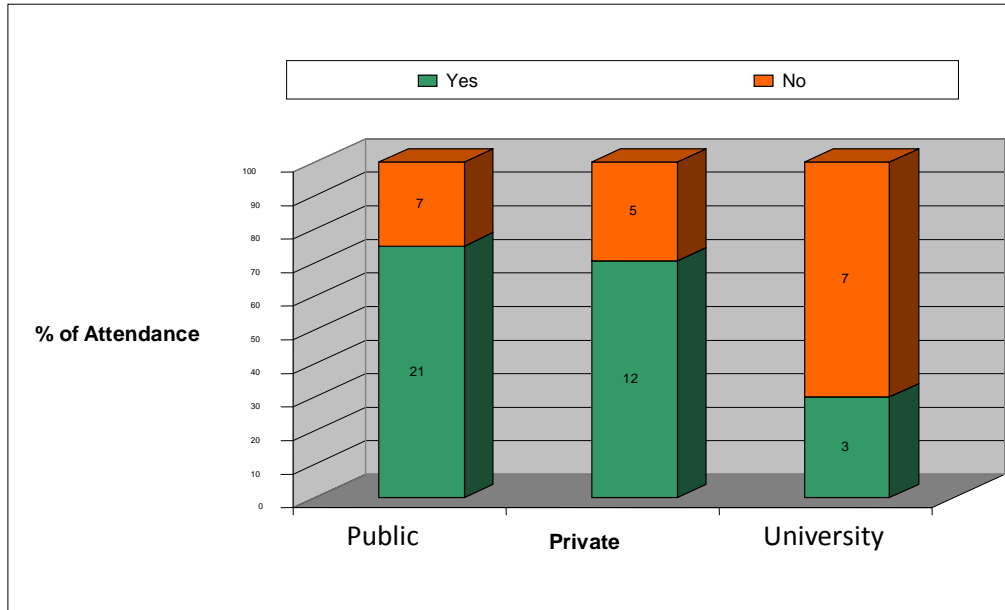


Figure 5: The impact of work environment upon further training involvement

The majority of the radiology technicians who participate in further training courses acknowledges the support of the administration of their Hospital in the organization of the training programs (Figure 6).

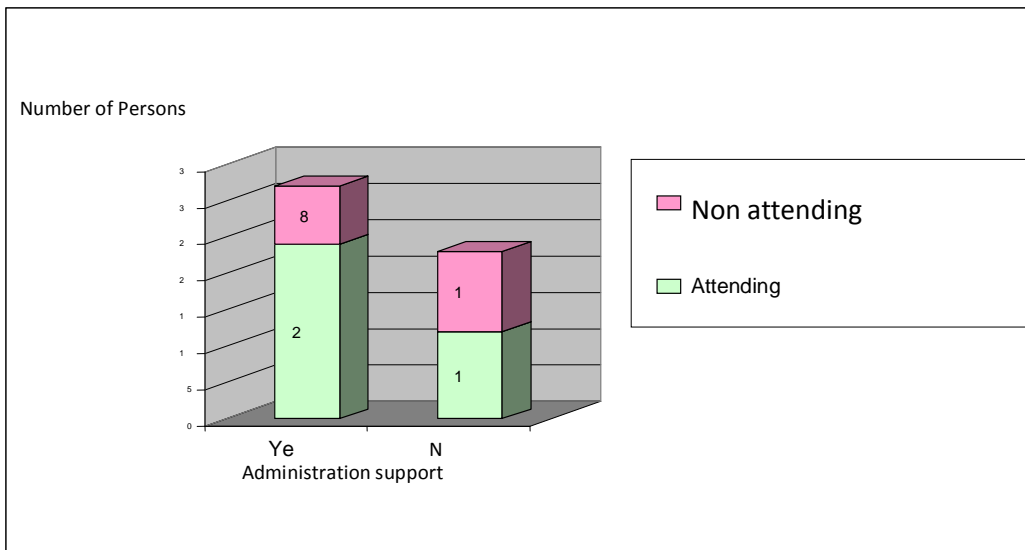


Figure 6: The impact of administration support upon further training involvement

The radiology technicians, who acknowledge the contribution of the bio-medical technology companies in their in-service training, participate entirely in further training courses provided to them (Figures 7 & 8).

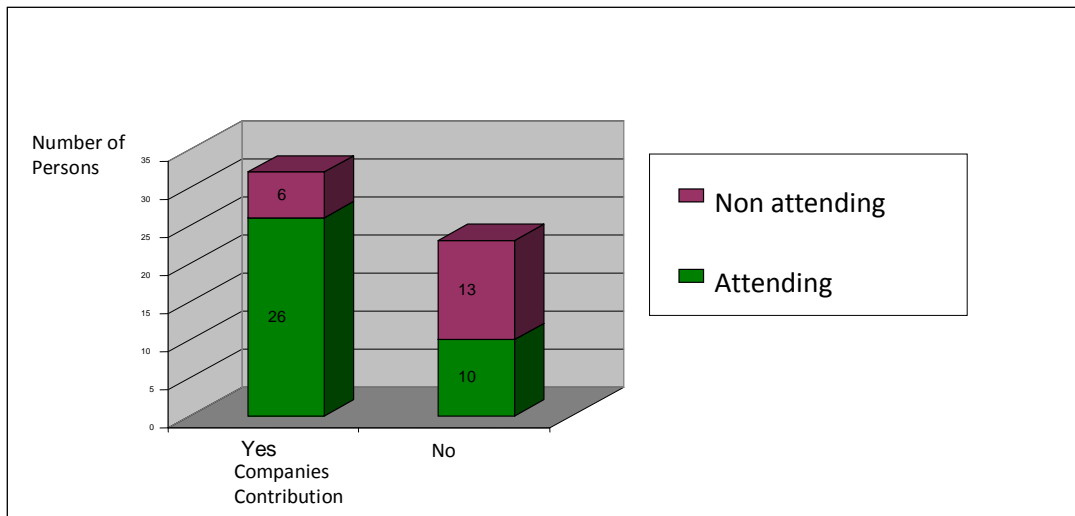


Figure 7: The impact of contribution of the bio-medical technology companies upon further training involvement

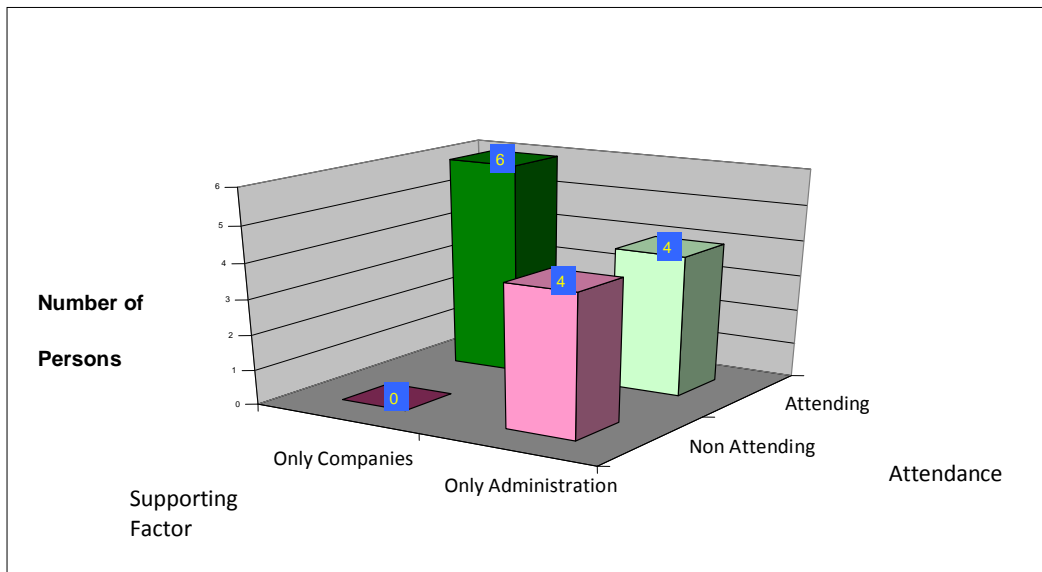


Figure 8: Relevance of companies' contribution and administrative support

In this research the participation in further training is not affected by work experience and age without taking into consideration the expectancy of years for retirement in relation to age (Figure 9).

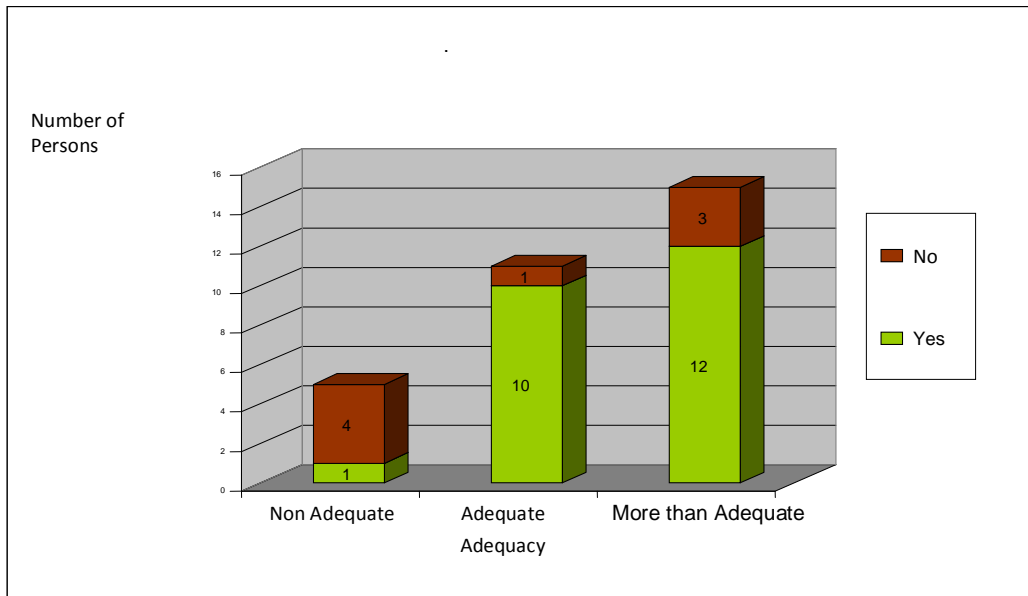


Figure 9: Further training in relation to the adequacy of administrative support

Looking into the survey data it is evident that nobody responded affirmatively to the question relating to the owning of a Master's degree or doctorate. Monitoring of postgraduate or further training courses in Greece is not part of any planning, even when aiming to maintain the professional work license. In addition, there are conditions and criteria documented by a certification body for training centers and trainers.

5 Conclusions

The knowledge of the factors influencing postgraduate life-long education and further training enables radiographers to attend the evolution of Bio-Medical Technologies (BMT). The purpose of this paper was to evaluate the impact of different factors in the postgraduate life-long education of Radiographers in Medical Imaging, in this era of evaluating BMT.

The research was based on questionnaires distributed to 130 radiographers working in Public, University and Private Healthcare Institutions. The questionnaire consisted of nine questions, regarding gender, age, primary qualification and work-experience, participation in postgraduate courses / seminars / congresses, the contribution of companies of BMT and the administrative support of their Department, to be completed anonymously. The Radiology Departments selected were equipped with X-Rays, Mammography, Computed Tomography equipment and some of them Angiographic Suite and Magnetic Resonance Imaging equipment. No radiographers are occupied in ultrasonography.

In Greece the percentage of radiology technicians holding a University graduate degree in their subject remains low as there are not enough Postgraduate Studies in higher education. As a result, in case somebody is willing to take a postgraduate course, they are obliged to go to universities abroad.

The main conclusions of this research are related to the high-level requirements of the everyday work in the subject; radiology technicians appreciate the most the contribution

of the Bio-Medical Technology companies in the organization and the development of further training opportunities by participating in seminars organized by private healthcare companies; on the contrary, this is not the case when the management of their Hospitals undertake to carry out the organization of in-house training activities.

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