

## Knowledge and Attitudes of Final Year Medical Students to Radiation Oncology as a Specialty.

Adenipekun A.A., Elumelu-Kupoluyi T.N., Oladeji A.A.

Department of Radiotherapy, College of Medicine, University College Hospital, Ibadan, Nigeria.  
[adenipek2000@yahoo.com](mailto:adenipek2000@yahoo.com),

**ABSTRACT: Background:** Radiation therapy is a medical specialty in which ionizing radiation is used to treat malignant diseases and occasionally benign conditions. The specialty has been in existence since the discovery of X-rays by the German physicist, Wilhelm Conrad Roentgen in 1895. A student doctor Emil Grubbé in Chicago was reported as the first person to use radiation to treat cancer, and three years later, two Swedish doctors used radiotherapy to cure several cases of cancer of head and neck. In Nigeria like many developing countries Radiation therapy also called Radiation oncology is relatively a new specialty compared to other medical specialties. There are only five centers having Radiotherapy Facilities in Nigeria to a population of over 140 million. There is a general lack of knowledge about Radiation therapy among health professionals including medical graduates, this is worse among general public with unfounded and exaggerated fears about the discipline. In University College Hospital, Ibadan (UCH), Radiotherapy facilities have been in place for more than two decades. This study was conducted among final year medical students at University College Hospital, Ibadan to assess their level of knowledge about the specialty and to estimate the percentage of those who will consider Radiation oncology as career option. **Materials and Methods:** A cross sectional study was conducted in the Radiotherapy department of University College Hospital, Ibadan Nigeria, among final year students of MBBS degree programme. A total of 114 willing medical students participated in the study. A semi-structured questionnaire was used for data collection. The questionnaire consisted of 3 sections, Section A addressed demographic data, while Section B addressed issues about knowledge of Radiotherapy and Section C addressed attitudes and possibilities of choosing Radiation oncology as a career. The data was analyzed using statistical software SPSS version 16.0. **Results:** 114 participant were enrolled, Majority of the student 95.6% responded affirmatively to awareness of radiotherapy as a specialty, Of which 78.8% got the information during their posting lecture, 94.7 of the total responded have rotated through radiotherapy department. Of all the responded, 33.3% believed radiotherapy is not as exciting compare with other specialties, and 21.9% believed radiotherapy is not as rewarding as other specialties. 78.1% were scared of radiation exposure and its danger, 66.7% believed that radiotherapist are at risk of infertility and 74.6% believed that radiotherapist are at risk of cancer. However despite the high percentage of students having negative attitude towards radiotherapy, 57.0% said they would consider radiation oncology as a career. **Conclusion:** The results of our survey showed that the medical students were not exempted from the group of people that express wrong fears towards radiotherapy which is mainly due to inadequate knowledge. There is therefore the need to ensure that adequate importance is given to Radiotherapy in the MBBS curriculum so as to enhance awareness regarding the subject and to equip the students with more knowledge on radiation safety and quality control.

[Adenipekun A.A., Elumelu-Kupoluyi T.N., Oladeji A.A. **Knowledge and Attitudes of Final Year Medical Students to Radiation Oncology as a Specialty.** *J Am Sci* 2012;8(7):6-10]. (ISSN: 1545-1003). <http://www.americanscience.org>. 2

**KEY WORDS:** Medical Students, Radiation oncology.

### INTRODUCTION

Radiation therapy (RT) is a medical specialty where ionizing radiation is used in the treatment of malignant tumors (and occasionally benign conditions). It is relatively a new medical discipline especially in the developing world. It came into existence after the discovery of X-rays by the German physicist, Wilhelm Conrad Roentgen in 1895.<sup>1</sup>, weeks later, Emil Grubbé, a student doctor in Chicago became the first person to use radiation to treat cancer, and three years later, two Swedish doctors used radiotherapy to cure several cases of cancer of head and neck<sup>2</sup>.

Radiotherapy is a technology oriented subject,

and due to the rapid progression of this technology, it has evolved relatively faster than most other medical discipline<sup>3</sup> and has risen within the rank of organized medicine to a position of recognized authority and academic respectability.

Radiation oncology along with other oncology specialties; surgical oncology and medical oncology are major modalities of cancer management. Radiotherapy is an important and useful treatment modality for cancer patients. Currently cancer is said to be 2<sup>nd</sup> leading cause of death after cardiovascular diseases<sup>4</sup>. Radiotherapy has become a standard treatment option for a wide range of malignancies. The U.S. Surveillance, Epidemiology, and End Results

data show that radiation is commonly included in primary oncologic interventions, and more than half of cancer patients require radiotherapy during at least one point in their care<sup>5</sup>.

Although Radiotherapy requires installation of heavy and costly equipments; it is a treatment modality that is simple, noninvasive, and painless. With current and modern sophisticated RT techniques, the treatment is very precise and safe, with good clinical results and tolerable side effects.<sup>3</sup>

Despite the fact that Radiotherapy is a dynamic specialty, with evolving technologies and novel therapeutic offerings, with huge investment especially by IAEA to Africa (over \$44 million was allocated under Technical Cooperation Fund (TCF) to Africa for 2007-2008), Radiotherapy is still considered a low priority subject in many developing countries.<sup>6</sup>

According to statistics, the number of radiation oncologists in developed world has been growing steadily, there were 1,169 radiation oncologists in 1975, 2,272 in 1985 and 3,630 in 1995 and in 2008, there were 4,563 licensed radiation oncologist in United State alone<sup>7</sup> whereas in Nigeria the licensed radiation oncologists are less than 30 in a country of over 140million inhabitants, and rising cancer incidence.

Medical graduates rarely choose Radiation oncology as a specialty and very few consider it as a career option. This could be due to several factors, including low awareness, the fact that there is limited number of institutions with recognized postgraduate Programme in radiation oncology, limited job prospects because of few Radio- oncology centers currently in Nigeria, also there are lot of unfounded fears of risk of radiation exposure and effect e among general public, hospital workers inclusive . However, the main factor could be inadequate exposure during the undergraduate medical education

University College Hospital (UCH), Radiotherapy facilities have been in place for over two decades and medical students usually have their first contact with the Department after passing their first major examinations at the commencement of clinical postings this correspond to their third year in the medical school. .

This study was conducted among final year medical students to assess their level of knowledge and attitudes towards Radiation Oncology as a specialty and estimation of future consideration of radiation oncology as career option.

## MATERIAL AND METHODS

### Can radiotherapy as a specialty put you at risk of cancer?

	Frequency	Percent	Valid Percent	Cumulative Percent
Completely agree	30	26.3	26.3	26.3
Moderately agree	25	21.9	21.9	48.2
Slightly agree	30	26.3	26.3	74.6
Slightly disagree	12	10.5	10.5	85.1
Moderately disagree	11	9.6	9.6	94.7
completely disagree	6	5.3	5.3	100.0
Total	114	100.0	100.0	

A cross sectional study was conducted in the Radiotherapy department of University College Hospital, Ibadan Nigeria, among final year students of MBBS degree programme. A total of 114 willing medical students participated in the study. A semi-structured questionnaire was used for data collection. The questionnaire consisted of 3 sections, Section A addressed demographic data, while Section B addressed issues about knowledge of Radiotherapy and Section C addressed attitudes and possibilities of choosing Radiation oncology as a career. The data obtained through the questionnaire was entered and were analyzed using statistical software SPSS version 11.0.

## RESULTS

A total of 114 students responded to the questionnaire. 74 (64.9%) were males while 40 (35.1%) were females. The age of the students ranges from 21- 40 years. Majority of the students that responded were from South Western part of the country 87(3.7%). Others are South-South 17(14.9%), South East 9(7.9%) and North central 4(3, 5%). 109(95.6%) responded affirmatively to awareness of radiotherapy as a specialty, while only 5(4.4%) claimed ignorant of radiotherapy. Of which 91(78.8%)

got the information during their posting lecture. 108(94.7) of the total responded have rotated through radiotherapy department. Of all the responded, 38(33.3%) believed radiotherapy is not exciting like other specialties, 89(78.1%) are scared of radiation exposure and its danger, while 76(66.7%) believed that radiotherapist are at risk of infertility and 85(74.6%) believed that radiotherapist are at risk of cancer. 43(37.7%) of students believed that radiotherapists will be perpetually sad because they take care of moribund patients and 25(21.9%) believed radiotherapy is not as rewarding as other specialties.

**Age Group**

	Frequency	Percentage
21-25yrs	80	70.2
26-30yrs	25	21.9
31-35yrs	6	5.3
36-40yrs	3	2.6
Total	114	100.0

**If yes, how?**

	Frequency	Percent	Valid Percent	Cumulative
Class Lecture	89	78.1	78.1	78.1
Posting Lecture	2	1.8	1.8	79.8
Others	23	20.2	20.2	100.0
Total	114	100.0	100.0	

**Can you consider radiation oncology as a career?**

	Frequency	Percent	Valid Percent	Cumulative
Valid Yes	65	57.0	57.0	57.0
No	49	43.0	43.0	100.0
Total	114	100.0	100.0	

**Radiotherapy is not as rewarding as other specialties**

	Frequency	Percent	Valid Percent	Cumulative
Completely agree	2	1.8	1.8	1.8
Moderately agree	7	6.1	6.1	7.9
Slightly agree	16	14.0	14.0	21.9
Slightly disagree	20	17.5	17.5	39.5
Moderately disagree	20	17.5	17.5	57.0
Completely disagree	49	43.0	43.0	100.0
Total	114	100.0	100.0	

However despite the high percentage of students having negative attitude towards radiotherapy, 64(57.0%) said they will consider radiation oncology as a career while 49(43.0%) said they would not consider radiotherapy as a career.

**DISCUSSION**

Majority of the students fell into the 21 - 25 years age group and males were more than females, 74(64.9%) and 40(35.1%) respectively. 95.6% of the students admitted to have heard of Radiation Oncology as a specialty while only 5(4.4%) have never heard of the specialty. One would have expected that all should have heard of radiotherapy because they were final year students and the specialty has been in existence in the hospital since 1987 and moreover they receive introductory lectures at the beginning of their clinical years in the medical school ( i.e 300 level), this is reflected in their response to the question on how they got to know about Radiotherapy 89(78.1%) got to know through lectures. Though they do rotate through the department, the period is rather too short to make any meaningful impact on them. By the time they are in their final year 2 - 3 years after their initial rotation to Radiotherapy, they have lost touch with the specialty. The students 83(72.8%) claimed they had one week rotation in Radiotherapy but this is actually , a period of one week shared with Radiology Department, which is grossly inadequate.

**I am scared of radiation exposure and its dangers**

	Frequency	Percent	Valid Percent	Cumulative Percent
Completely agree	36	31.6	31.6	31.6
Moderately agree	25	21.9	21.9	53.5
Slightly agree	28	24.6	24.6	78.1
Slightly disagree	6	5.3	5.3	83.3
Moderately disagree	10	8.8	8.8	92.1
Completely disagree	9	7.9	7.9	100.0
Total	114	100.0	100.0	

**A Radiotherapist will be perpetually sad because they take care of moribund patients**

	Frequency	Percent	Valid Percent	Cumulative Percent
Completely agree	4	3.5	3.5	3.5
Moderately agree	18	15.8	15.8	19.3
Slightly agree	21	18.4	18.4	37.7
Slightly disagree	13	11.4	11.4	49.1
Moderately disagree	10	8.8	8.8	57.9
Completely disagree	48	42.1	42.1	100.0
Total	114	100.0	100.0	

Thirty-four (29.8%) of the students have information about the type of machine and radio-nuclide we have in the department, majority had

partial knowledge of the types of machine while 10(8.8%) do not even have a clue, having spent 3 years in the clinical side of their training.

When asked about their perceived fear about the specialty, 85(74.6%) believed that Radiation.

Oncology as a specialty puts them at risk of developing cancer and 74(66.7%) also believed that they are at risk of infertility in as radiation worker. This is a reflection of high level of ignorance about radiotherapy among final year medical students who had just few weeks to graduate to become doctors in a college where Radiotherapy facilities have been in existence for over two decades. In a similar studies conducted by Adeyekun(2003) on attitudes of medical students to Radiology, he reported that majority had poor knowledge and negative attitude to Radiology.

Thirty five (33%) of the students described Radiotherapy as a non exciting specialty, however, majority 76(69.7%) disagreed with that opinion and they also disagreed that the Radiation oncologists are perpetually sad because most of their patients are moribund.

This question was necessary to assess the students' emotional disposition to the care of the advanced cancer patients seen in this environment, studies have demonstrated that over 70% of our patient presents in advanced stage when cure is almost impossible. It is encouraging that majority of the student did not feel sad managing these patients and 89(78.1%) also 64(57.0%) believe in Radiotherapy as a career in future. This is also heartwarming because presently there is a dearth of radiation oncologists in the country to manage the ever increasing number of cancer patients. Nigeria presently has just about twenty Radiation Oncologists, and 5 Radiotherapy centers to a population of over 140 million people. Even though there is a plan to increase the number of centers to ten by the Federal Government, these will still not be adequate.

To have a meaningful impact at least every state should have a center. These future centers will require the services of Radiation Oncologists hence the need to train more doctors in the specialty, its therefore necessary to increase the awareness of the specialty among our medical students. This could be achieved by increasing their period of radiation oncology posting from the present one week in all, to a four weeks posting period. This the authors believe will be addressed in the new proposed medical education curriculum of the university. and also hope that other universities in Nigeria while reviewing their MBBS curricular will put this into consideration.

This study showed a similar result with the work done by Sharma DN et al of department of Radiation Oncology India. In his study he concluded that

radiotherapy is still a low priority subject in India, mainly due to the poor exposure to the discipline and low awareness of the subject of radiotherapy during the undergraduate medical programme<sup>3</sup>.

In conclusion, medical students are not exempted from the list of people that express wrong fears towards radiotherapy which is mainly due to inadequate knowledge. There is therefore the need to equip the students with more knowledge on radiation safety and quality control. There is also need to increase the radiotherapy training centers to be able to accommodate the interested future MBBS graduates that will consider radiotherapy as a career, thus producing enough Radiation Oncologists to take care of increasing number of cancer patients in the future.

Corresponding Author:

Dr . A. Adenipekun  
Department of Radiotherapy  
University College Hospital  
Ibadan.  
adenipek2000@yahoo.com

**REFERENCES**

1. Glasser O. Wilhelm Conrad Roentgen and the early history of the Roentgen rays. Springfield: Charles C. Thomas; 1934.
2. Dursun, Polat MD; Gultekin, Murat MD; Ayhan, Ali Professor; The History of Radical Hysterectomy Journal of Lower Genital Tract Disease: July 2011 - Volume 15 - Issue 3 - pp 235-245
3. Sharma DN, Rath GK, Parashar A, Singh P. Survey of undergraduate medical students on their understanding and attitude towards the discipline of radiotherapy. J Can Res Ther 2010;6:11-4
4. WHO report 4 February 2011
5. Philip P. Connell, and Samuel Hellman Cancer research ;Advances in Radiotherapy and Implications for the Next Century: A Historical Perspective; Cancer Res January 15, 2009 69; 383
6. B M Biswal, MD, A Zakaria, PhD\*, A A Baba. MRCP\*\*, R Ja'afar. MHPEd Assessment of Knowledge, Attitude and Exposure to Oncology and Palliative Care in Undergraduate Medical Students; Med J Malaysia Vol 59 No 1 March 2004
7. Physician Characteristics and Distribution in the U.S., 2010 Edition, 2004 IMV Medical Information Division, 2003 SROA Benchmarking Survey

5/22/2012