

Oncology knowledge gap among freshly passed interns in a Government Medical College of Eastern India

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Abstract

Objectives: A survey was conducted among freshly passed undergraduate doctors of a medical college in Eastern India with the aim to investigate their exposure to oncology patients, their knowledge about various aspects of oncology patient management and their confidence in managing patients with cancer. **Materials and Methods:** One hundred and twelve newly passed interns of a Government Medical College in Kolkata were interviewed using semi-structured partly open ended and partly closed end questionnaire. The questionnaire dealt with the qualitative and quantitative aspects of knowledge and perception of the interns about the problem of cancer and its management. **Results:** A total of 82 interns responded to the questionnaire, with a response rate of 73.2%. About 53% of the respondents have seen less than five patients during their undergraduate ward/clinical postings. Among the respondents, 71% felt they were confident in diagnosing cancer, and about 56% were confident in counseling of patient and their relatives about cancer. About 63% were aware about the role of surgery; however, only 32% and 37.5% were aware about the role of radiotherapy and chemotherapy, respectively. A dismal 12.5% were confident of care of terminal and late stage patients. Preparedness was correlated with exposure to patients with cancer ($P = 0.03$). Majority (87%) felt the need for incorporating oncology training at the undergraduate level and the most frequent method (67%) suggested for doing so was having separate posting in radiotherapy department/oncology wards. **Conclusion:** There is glaring knowledge gap among newly passed doctors and integrated oncology postings during undergraduate training and during internship may help seal this gap.

Key words: India, interns, oncology knowledge, undergraduate teaching

Introduction

In India, during the year 2001, nearly 0.80 million new cancer cases were estimated and this would increase to 1.22 million by 2016 as a result of change in size and composition of population. In a country like India the only way to fight this scourge is to have a pragmatic program which should necessarily have components for education and training for health care workers including doctors.^[1] With a miniscule number of oncologists or doctors with postgraduate/postdoctoral training in oncology available, the non cancer specialist doctors are often the first caregiver of cancer-diagnosed patients.^[2] These doctors without a postgraduate training/degree in oncology have limited opportunities to gain knowledge and skill subsequently in practice; thus their undergraduate teaching is of great importance. There is concern about how well prepared they are for this role since radiotherapy/oncology *per se*, is considered a low priority subject across the world and in India, one of the main reason for the same being a lack

of proper exposure during the undergraduate (UG) medical education.^[3,4] The medical council of India has nonspecific guidelines for RT/oncology posting during internship period and therefore majority of medical colleges have no mandatory RT/oncology posting.^[5]

A survey was conducted among freshly passed undergraduate doctors, undergoing compulsory rotatory internship in a medical college with the aim to investigate the exposure of oncology teaching in the undergraduate curriculum of medical students and the knowledge gap and preparedness of the interns in managing patients with cancer in terms of diagnosis, multimodality therapy, and palliation and thus to ascertain the training needs perception of these doctors on the various aspects of cancer care.

Materials and Methods

Each year, about 150 students pass their final MBBS examination (qualifying) and before they receive their degree, they undergo a compulsory rotatory internship for one year (12 months). One hundred and twelve of these newly passed interns (February 2011, MBBS pass out batch), all of whom were present during the time of the study doing the four major postings in the hospital of a Government Medical College were selected for this cross-sectional observational study. The study was approved by the institutional review board. The interns were interviewed in person using a questionnaire between June through August 2011. The rest were absentees or in the field posting or supplementary examination pass outs, and hence excluded. Care was taken to include those who have completed or undergoing one major clinical posting during the interview period. The medical college is equipped

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with a radiotherapy department, but without post graduate training in radiotherapy/oncology. The questionnaire was developed by a brainstorming session among radiotherapy, surgery, gynecology and medicine department faculty members. The semi-structured partly open ended and partly closed ended questionnaire comprised three blocks. Block A dealt with the qualitative survey about the awareness, knowledge about cancer care, and status of oncology training (in terms of number of classes) in their undergraduate years using open ended questions. The second block (B) included a quantitative assessment of knowledge and confidence of interns in dealing with various aspects of oncology from diagnosis to palliation. This had close ended questions with Likert's scale on 10 different aspects of cancer care and management. The final block C, included open ended questions about the options of integration of oncology training into the undergraduate medical curriculum. The questionnaire was pretested using a small subset (ten) of the responders and checked for reliability and validity. Data was analyzed using SPSS software version 16. Basic tables were generated about awareness and knowledge in various aspects of cancer care. The quantitative assessment of knowledge and confidence was scored for the ten points in oncology management. An association between exposure knowledge and confidence was tested using Pearson's Chi-Square test.

Results

A total of 82 interns out of 112 actually participated in the survey and responded to the interview, with a response rate of 73.2%, of which 46 were males (56.1%). According to the respondents, the most common cancer in the country was breast cancer and lung cancer followed by cervical cancer and head and neck cancers [Table 1]. However, when asked about the most common cancers examined in the wards and outpatient department, about 92.3% mentioned breast cancer, 50% mentioned lung cancer, and 57.7% mentioned cervical cancer, whereas only 19.2% mentioned head and neck cancers. About 53% of the respondents had seen less than 5 patients during their undergraduate ward/clinical postings, and about three quarter of them had seen less than 10 patients [Table 2]. Also 46% of the respondents did not attend a single lecture class on oncology during their undergraduate training years and another 43% recalled attending less than 5 lecture classes [Table 3]. When asked regarding the common modality for treating cancer, 74.4% mentioned all three modalities of surgery, chemotherapy, and radiation, 17.1% said surgery and chemotherapy alone and 8.5% said surgery alone. A total of 77 out of 82 respondents were aware of TNM staging; 10 were aware of FIGO (for gynecological malignancies) staging. When asked about the approximate percentage of cancer patients that need chemotherapy and radiotherapy, 75.6% of the respondents felt that less than 20% need any radiotherapy and 51.5% of the respondents felt that less than 20 percent of all cancer patients need chemotherapy in any form. Regarding pain management,

Table 1: Most common cancer presenting to the hospital OPD according to the respondents

Most common cancer presenting to the OPD	Number of respondents	Percentage
Breast	73	88.5
Lung	73	88.5
Cervix	57	69.2
Head and neck	38	46.2

*the sum is more than 100% since there were multiple answers, OPD=Outpatient department

Table 2: Exposure to cancer patients during undergraduate training

Number of cancer patients seen during undergraduate tenure	Frequency	Percent
<5 patients	38	46.3
5-10 patients	15	23.2
10-20 patients	8	4.9
>20 patients	11	25.6

*the sum is more than 100% since there were multiple answers

Table 3: Attendance of lecture classes on oncology during undergraduate training

Number of lecture session attended on oncology topics	Frequency	Percent
None	38	46.3
Less than 5	35	42.7
5-10 teaching classes	5	6.1
More than 10 classes	4	4.9

only 6 out of 82 interns who participated are aware of WHO ladder; 25.6% recommended NSAIDs for cancer pain and 67.1% recommended opioids for the same.

When interviewed using close ended questions, 71% of the respondents felt they are confident in diagnosing cancer, and about 56% were confident in counseling the patient and their relatives about cancer. About 63% of respondents said they have adequate knowledge about the role of surgery; however, only 32% were aware about the role of radiotherapy and 37.5% were aware about the role of chemotherapy [Figure 1]. There was a significant association with the exposure to cancer patients expressed as number of cases seen and examined during ward rounds of undergraduate training period and the self assessed knowledge regarding the role of radiotherapy [Table 4] and chemotherapy [Table 5], respectively. A dismal 12.5% were confident about the care of terminal and late stage patients; 27% were confident about adequate pain management; and only 13.5% were confident in dealing with oncological emergencies. Preparedness, in terms of self assessed confidence in dealing with various aspects of cancer care was correlated with exposure to patients with cancer during undergraduate training; interns who had seen more than 20 patients were most confident in diagnosing and treating cancer patients ($P = 0.03$).

A total of 73 out of 82 respondents felt the need for including 'oncology' as a separate subject/part of a subject

Table 4: Association of self assessed knowledge on role of radiotherapy and exposure to cancer patients

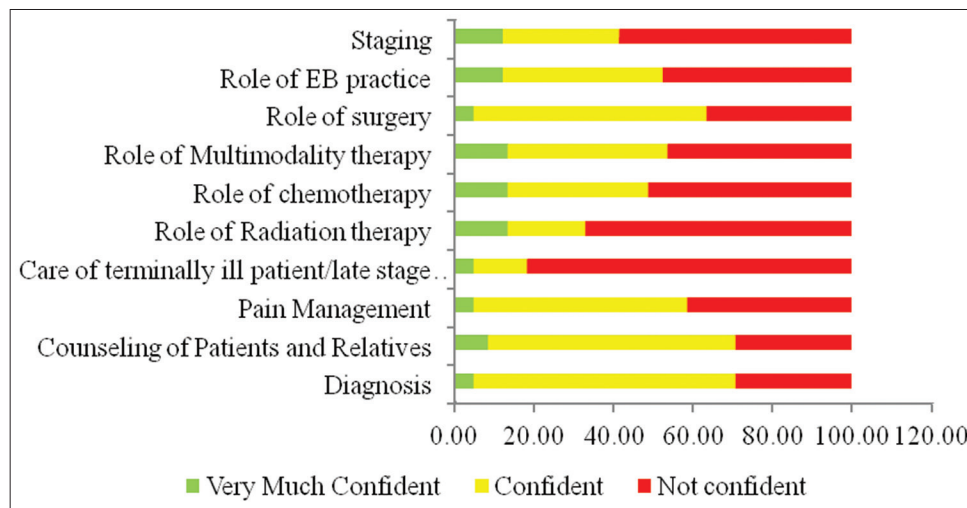
Knowledge about role of radiation therapy	Exposure to cancer patients during undergraduate rounds				Total
	<5 patients	5-10 patients	10-20 patients	>20 patients	
Poor	43.8	40.6	15.6	0.0	100.0
Average	48.3	34.5	3.4	13.8	100.0
Good	47.6	19.0	14.3	19.0	100.0
Total	46.3	23.2	4.9	25.6	100.0

$P=0.045$, Pearson's Chi-Square

Table 5: Association of self assessed knowledge on role of chemotherapy and exposure to cancer patients

Knowledge about role of chemotherapy	Exposure to cancer patients during undergraduate rounds				Total
	<5 patients	5-10 patients	10-20 patients	>20 patients	
Poor	40.0	25.0	35.0	0.0	100.0
Average	52.9	23.5	20.6	2.9	100.0
Good	44.4	22.2	22.2	11.1	100.0
Total	46.3	23.2	4.9	25.6	100.0

$P=0.075$, Pearson Chi Square

**Figure 1: Self assessed preparedness of interns in dealing with various aspects of cancer care (in percentage)**

in their undergraduate curriculum, whereas the remaining 9 felt there is no such need as oncology topics are already covered under other subject headings. When asked about the best time to integrate oncology teaching into their undergraduate curriculum, 36.6% felt it should be integrated during the third professional MBBS, whereas 30.5% felt it should be integrated during the internship. Majority of the respondents (35%) felt the best way to integrate oncology teaching would be to have separate postings or ward rounds in radiotherapy oncology department; about 17% felt the best way would be to have more lecture classes on oncology, whereas about a quarter of them felt that they should have both more lecture classes and separate oncology/radiotherapy postings to improve their knowledge and confidence in dealing with cancer patients.

Discussion

The need for oncology training among undergraduate students was felt by the policy makers worldwide in 1950s. In 1992, the UICC recognized the imbalance between

prevalence of cancer cases and the number of physicians adequately trained in oncology. It suggested that integration of radiation oncology into the clerkship of radiology would help to address this issue. It was also found that inclusion of oncology topics significantly improves knowledge.^[6] Surveys across the world have identified problems with undergraduate oncology teaching including inadequate coordination, insufficient resources, and variability in curriculum^[7] Though the medical council of India recognizes the need for integration of oncology into the undergraduate curriculum, the inclusion is made optional due to non-uniformity of available resources across the country. The allotted teaching duration for radiation oncology is within 2 weeks demarcated for radiology, where the facility exists.^[5] There is also very limited literature on the oncology knowledge and training of the undergraduate medical students of the country. In a survey conducted among undergraduate medical students of various medical colleges of the country, it was found that about one third respondents did not have separate posting in RT.

Since there was an inherent bias in the above survey as it was not stratified according to the medical college, the real pan-India proportion can be expected to be much higher.^[3] In the present study, about half of the respondents (46%) said they have not attended any lecture class on oncology. This figure is similar to a survey among undergraduate students of Australia in the 1990s, where several reforms were undertaken to improve attendance to various oncology clinics. Lack of posting in RT or oncology leads to lack of knowledge, and preparedness in oncology care. In the above comparative study knowledge among students in the 1990s and 2000 from Australia, it was found the attendance in various multimodality clinics increased over a decade with increasing knowledge of multimodality therapy among undergraduates.^[8] In the present study, no significant association was found between the number of classes attended and the self rated knowledge/confidence regarding role of radiotherapy and chemotherapy.

Among the various points in oncology care, knowledge regarding pain and palliative care was found most lacking. Since the majority of medical colleges do not have palliative care units, this void might not be filled by mere posting in the oncology wards. An initiative by the Indian association of palliative care of 1 year certificate course in pain and palliative care, which includes module based distant education and contact classes followed by a passing examination could be a suitable answer to address this issue.

The aim of undergraduate training is to prepare them for their first year of work as doctors; however, evidence points towards inadequate preparation for the same. The preparedness varied across various aspects of the subject and is mostly dependent on the level of teaching and exposure at the undergraduate level. As evident in the present study, the existent structure of the course curriculum does not permit much exposure to cancer patients during undergraduate years. There is a significant association between the amount of exposure to cancer patients and the preparedness regarding the role of radiotherapy and chemotherapy, which further validates this point. Hence the exposure to cancer cases is of primary importance and posting in radiotherapy department (where such departments exist) might help to reduce the knowledge gap regarding treatment options of common cancers. Integration of oncology teaching in the form of lectures and didactics is also a valid option to increase the preparedness as suggested by studies, though rotation in medical and radiation oncology department is a good way to learn clinical oncology.^[9,10] In the present study, the respondents themselves felt that oncology postings were a better option as opposed to lecture classes for the same. Other methods of module based and web based study were not found to be popular with interns in this study as compared to those

from other parts of the world.^[11] However, as opined by Denis K E B, it is not just integration that is important, the evaluation of knowledge is also important as assessment drives performance, and hence leads to retention of knowledge gained by any of the above methods.^[12]

Summary and Conclusion

There is worryingly low exposure to cancer patients and very few dedicated lecture classes on oncology during undergraduate training. Though the awareness level was quite satisfactory, the most important gap in the training of the undergraduate students in oncology deals with the role of radiotherapy and chemotherapy and the care of terminally ill cancer patients. Compulsory oncology postings during undergraduate training/during internship might help to bridge these knowledge gaps among the newly passed-out doctors.

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