Importance of a standardized oncology curriculum in Malaysia

Sangeetha Poovaneswaran, Rumi Khajotia, Thiruselvi Subramaniam

Abstract: The incidence of cancer in Malaysia is rising alarmingly and newly qualified doctors will be expected to be competent in the basic management of cancer patients. However, the opportunity to gain experience in oncology management will remain limited unless these students are stationed in an oncology unit which is solely dedicated to the treatment of such patients. Therefore, it is essential that undergraduate medical school training equips students with a sound knowledge-base, so that they can confidently manage basic oncological conditions appropriately. With the many private and local medical universities across the country, it is important that oncology training be standardized and reflective of the local resources available, and government health policies. As a result, having a standardized curriculum would help create a framework whereby competencies in cancer management would be accurately assessed.

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The National Cancer Registry reported that 67,792 new cancer cases were diagnosed in Peninsula Malaysia alone from 2003 to 2005.[1] This translates to an estimated lifetime risk of developing cancer of 1 in 7 for Malaysian men and 1 in 6 for Malaysian women.[1]

The incidence of cancer among Malaysians is rising due to a number of factors, namely an increasing population, longer life-expectancy, and an unhealthy lifestyle. The prevalence of cancer is also on the increase due to significant developments in cancer treatment increasing the number of survivors either still with, or cured from their cancer.

Coupled with the increasing number of cancer patients, there is a significant shortage of oncologists, with fewer than 60 oncologists in the private and government sectors combined. More than half are based in the Klang Valley and some states sadly do not have access to a resident oncologist in their general hospitals. As such, the majority of newly qualified doctors will be working in hospitals that do not have an oncology department. There will also be little avenue to gain experience and knowledge regarding basic oncology management unless newly qualified doctors are stationed in an oncology unit.

As such, it is vital that undergraduate medical school training equips the students with a sound knowledge base so that they can confidently manage basic oncological conditions appropriately.

Oncology is a multi-disciplinary specialty which involves a variety of disciplines such as medicine, surgery, pathology, radiology and palliative care. Also, teaching now is a learner centered process with didactic lectures phased out in favour of small group problem based learning and experiential learning with the use of portfolios. As such, teaching oncology within the curriculum tends to be fragmented.

A report to the Commission of European Communities from the consensus workshop was published in 1988 detailing a framework for the oncology curriculum for medical students.[2] It proposed that in clinical teaching, attention should be given to the natural history of the common types of cancer, early symptoms, diagnosis and the principles of treatment. It recommended the multi-disciplinary approach to cancer management be taught to avoid bias towards one medical discipline.[2]

In 1994, the International Union Against Cancer (IUCC) published a monograph which described global concerns about the status of medical student education about cancer and provided a model curriculum.[2] However, it did not provide a framework in terms of how oncology should be taught in the learner centered undergraduate curriculum which utilizes problem based learning and self-directed learning.

The curriculum which is most reflective of the current medical undergraduate curriculum is The Ideal Oncology Curriculum. It not only takes into account the current

International Medical University, Seremban Clinical School, Jalan Rasah, 70300 Seremban, MALAYSIA

Address for correspondence:

Dr Sangeetha Poovaneswaran, International Medical University, Seremban Clinical School, Jalan Rasah, 70300 Seremban, MALAYSIA
Email: sangeetha_poovaneswaran@imu.edu.my

teaching model; it also recognizes that clinical training will occur in hospitals in rural areas as well as in cities; as such exposure to oncology may be varied. It was initially devised in 1988 by the then Australian Cancer Society and revised in 1999 by an Oncology Education Committee (OEC) of the Cancer Council of Australia.[3]

The curriculum provides a comprehensive checklist for course design that allows adaptation to local conditions, as well as a checklist against which outcomes can be monitored. Each learning objective is illustrated by a representative question indicating the minimum knowledge expected of the medical student.[3] The Ideal Oncology Curriculum has been endorsed by IUCC which is a reflection of its international relevance.

International Medical University utilizes problem based learning and self-directed learning formats. Hospitals used for clinical teaching include both general hospital in semi-urban populations as well as district hospital. None of the hospitals have a dedicated oncology centre and cancer patients are managed by general surgeons and physicians with the input from visiting oncologists. More complex cases are referred to hospitals with an oncology centre.

Students are exposed to oncology in all disciplines during the clinical phase of their training. Specifically relating to breast cancer, which is the commonest cancer in Malaysia; students attend combined multidisciplinary breast cancer clinics and are exposed to both surgical and non-surgical aspects of management. Also they have ward based case presentations specifically relating to cancer management in all stages.

Based on the criteria set by the 'Ideal Oncology Curriculum', undergraduate student's competencies on common cancers were retrospectively analyzed. Analysis of two exam questions on oncology for the final year students at International Medical University, Malaysia are illustrated below. The first exam question analyzed was a Multiple Essay Question (MEQ) comprising of 5 components, all pertaining to different aspects of breast cancer management. The students had been allocated 30 minutes to complete the question. The second oncology exam question was in the form of an objective structured clinical exam (OSCE) which was allocated 10 minutes.

The multiple essay questions (MEQ) on breast cancer; the first question analysed was set for the penultimate exam for final year students in August 2010. There were 80 students who were eligible to sit the exam, however, one student failed to attend. As such, analyses were done on the results of the 79 students.

Three forms of analysis were done. Firstly, the complexity of the questions was graded using Bloom's taxonomy.[4] Secondly, using the comprehensive checklist, 'The Ideal Oncology Curriculum' created by the Cancer Council of Australia; the questions were assessed to see if all key components were tested. Thirdly, the students' results were analyzed using SPSS v17.

The MEQ on breast cancer was divided into 5 parts; namely A, B, C, D and E. The question assessed various levels of the cognitive domain of Bloom's Taxonomy. Part A and B assessed predominantly knowledge, comprehension and application. Parts C, D and E assessed higher cognitive domains; analysis, synthesis and application.

Components assessed based on the checklist of 'The Ideal Oncology Curriculum' were public health, cancer biology, patient management, diagnosis and treatment.[3] Communication skills, ethics and clinical experience could not be directly assessed as it was a written paper.

Based on the cognitive domain of Bloom's Taxonomy and the checklist from 'The Ideal Oncology Curriculum', the student's results revealed that when higher levels of the cognitive domain were tested, they performed less well. Analysis using box plot for questions assessing higher level of cognitive domain suggested discrimination between good and weak students.

Bloom's Taxonomy[4]

   Level 1 – Knowledge
   Level 2 – Comprehension
   Level 3 – Application
   Level 4 – Analysis
   Level 5 – Synthesis
   Level 6 – Evaluation

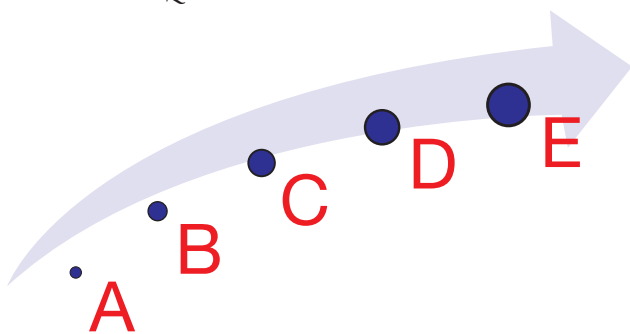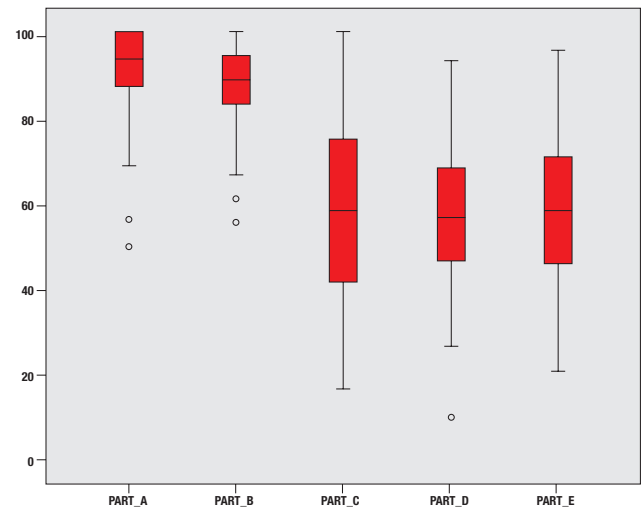Fig.1: Illustration showing that higher levels of the cognitive domain was tested in the latter parts of the MEQ.

Fig.3: Box plot illustrating better discrimination in Parts C,D and E of the MEQ

Fig.2: Tables illustrating the mean, standard deviation, minimum and maximum mark obtained for each part of the MEQ.

Parts of MEQ	A	B	C	D	E	TOTAL
Mean Mark	7.3608	7.8418	3.4873	8.5759	6.9177	34.1835
Total Marks allocated	8	9	6	15	12	50
Mark in percentage%	91.25	87.1	58.1	57.17	57.65	68.37

	A	B	C	D	E	Total
N Valid	79	79	79	79	79	79
Missing	1	1	1	1	1	1
Mean	7.3608	7.8418	3.4873	8.5759	6.9177	34.1835
Std. Deviation	.77185	.96258	1.33727	2.45091	1.94216	4.98085
Minimum	4.00	5.00	1.00	1.50	2.50	22.50
Maximum	8.00	9.00	6.00	14.00	11.50	44.50

The results suggest that the level of complexity of the question to assess competence in breast cancer management is appropriate as reflected in the results. However, they performed less well when higher levels of cognitive domain were tested suggesting that perhaps more clinical exposure of breast cancer management may be warranted.

The second question analyzed was the OSCE on communication skills in dealing with a simulated patient's wife. The case scenario was that of a man who was recently diagnosed with end stage lung cancer. The question had two components; speaking to the wife who did not want the patient to be informed of his diagnosis and the second component involved discussion of euthanasia. The students were then asked two questions by the examiner relating to the patient's right to decline chemotherapy and what issues would need to be addressed.

The 79 students were graded using the global rating system. Three students failed, 10 students were graded as borderline, 53 students had a clear pass and 13 students were awarded a distinction grade. The median mark was

76% (range 30 -100). Box plot analysis suggested that the question did not discriminate the good students from the weak students.

'The Ideal Oncology Curriculum' state that relating to communication skills, medical students should be proficient in communication, counselling and education of patients and provide family and community support.3 Also, they should be aware of ethical issues concerning cancer patients. The results from the analysis suggested that generally students have adequate competency in communication pertaining to ethical issues in terminal cancer patients. However, the question failed to discriminate the weaker students from the good students.

Currently there is no standardization in the oncology curriculum at a national level, with more than 20 private medical universities along with the local universities and medical twinning programs with various partner medical universities in India, United Kingdom and Australia. It is crucial, that newly qualified doctors entering housemanship in Malaysia are equipped with the appropriate skills and understand the local resources available so that they can manage the cancer patients in a holistic manner.

It is vital that oncology is written into the syllabus as a core curriculum in all undergraduate medical programs in Malaysia and that the breadth of topics covered includes screening programs to diagnosis and treatment to end of life care. Newly qualified graduates need to be equipped with up-to-date, relevant and comprehensive knowledge, as well as the skills and attitudes to address the needs of cancer patients and survivors. As more clinical schools utilize district hospitals in more rural areas, a standardized Malaysian curriculum in oncology will ensure that there is consistency of oncology teaching and training of medical students regardless of which medical university they receive their degree.

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