

BPKIHS TB MODULE: AN INNOVATIVE WAY TO TEACH TUBERCULOSIS TO MEDICAL UNDERGRADUATES

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ABSTRACT

Introduction: Tuberculosis is a major public health problem in Nepal. Medical schools need to practice evidence-based medicine for national TB control programmes. The objective of the study is to know the feedback about TB module from medical undergraduates.

Methodology: This is descriptive study designed to know the feedback regarding content and usefulness of TB teaching module from medical undergraduates of BP Koirala Institute of Health Sciences. The total duration of the study was from March 2004 to May 2008.

Results: The feedback about the TB teaching module was taken from 471 students. Out of them 64.7% (305) were males and 35.3% (166) females. Almost all students replied that objective of the module was clear and relevant. "TB teaching module is very useful" was the overall comments of the respondents particularly in respect of structured interactive session (SIS), Lecture, and Field visit to Primary Health Care Center, Britain Nepal Medical Trust, Nepal Anti Tuberculosis Association (NATA). Regarding the relevancy of the module, around 98% students' response was "relevant" and regarding the contents, 11% students' response was "content is too much".

Conclusion: It is recommended that this innovative BPKIHS TB module may be implemented in other medical schools of SAARC countries after necessary modifications in their own context.

Key words: Tuberculosis, Teaching module, Medical schools, Nepal

INTRODUCTION

Tuberculosis (TB) is a major public health problem in Nepal. Every year about 40,000 people develop tuberculosis; nearly half of them have infectious sputum positive tuberculosis and are capable of spreading the disease to others.¹ It is estimated that around 45% of the country's population infected with TB. Introduction of Directly Observed Treatment

Short Course (DOTS) has already reduced the number of deaths. However, 6,000 to 7,000 people still die every year from this disease.^{1,2} DOTS, has been implemented throughout the country since April 2001. A key feature of DOTS in Nepal is the National TB Programme (NTP) partnership with organizations at the national, regional and local levels.^{2,3} Successfully implementing the DOTS strategy requires that doctors to be trained to manage TB properly. Obviously, the active participation of doctors in tuberculosis control will lead to a change in the attitude of other health care providers and their involvement will be achieved more easily.^{4,5}

Revised National TB Control Program (RNTCP) is implemented in India through the primary health

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care system; under the guidance of a MBBS passed medical officer (MO).⁶ Medical schools must adopt and use their potential to contribute proactively in shaping the future of the health system. By introducing changes in medical education, research and delivery of care for TB control, medical schools have the unique opportunity to demonstrate social accountability. Medical schools should provide every medical graduate with the knowledge, skills and attitudes essential to the management of TB in the patient and in the community as a whole. They should have an effective educational strategy to provide such ability to their students.⁴ Medical schools need to practice evidence-based medicine and thus contribute towards developing future guidelines for national control programmes. In order to improve their relevance, teaching medical institutions should redefine their mission statements and make essential modifications to unify teaching and practice.⁵

The BP Koirala Institute of Health Sciences at Dharan was the first institute in Nepal to set up a DOTS teaching centre. Concerted efforts have been made to orient training to the perceived needs of the community and to the principles of the national control programme.⁷ A major step to control tuberculosis is by providing assistance to the national programme in three main areas: Teaching, Service and Research.

Teaching Practices of BPKIHS: The MBBS curriculum of BPKIHS is thoroughly integrated and community oriented and partially problem-based,

incorporating a need-based approach. During the first two years, emphasis is laid on the pre and para clinical sciences along with community medicine and professional skills; and in the next two and half years, the emphasis is on clinical sciences with a high degree of integration between clinical disciplines and community medicine; while the foundation of pre and Para clinical sciences continues to be strengthened. The curriculum incorporates early patient contact and emphasizes the importance of the study of community medicine and behavioral sciences from the beginning. Teaching through lectures has been restricted to a bare minimum while problem-based and hands-on learning experiences are encouraged. During the clinical posting, the students are regularly taken once a week to the District Health Office to orient them to the major local health problems and the various national health programs. In view of the seriousness of the problem of tuberculosis in Nepal, the Institute has developed a module on tuberculosis for teaching undergraduate students of medicine.

BPKIHS, Teaching Module of Tuberculosis:

The module respects the need for imparting teaching in class, laboratory and field involving various teaching departments. The aim is to provide students with a broad and comprehensive knowledge of tuberculosis and especially to develop skills in diagnosis and management of the disease, in compliance with the National TB Control Program of Nepal.

Table 1. BPKIHS, TB teaching module for medical undergraduates		
Topics of Structured Interactive Session (SIS)	Department	Duration
Magnitude of TB problem and national tuberculosis program.	Community Medicine	1 hour
Laboratory diagnosis of tuberculosis	Microbiology	1 hour
Pulmonary tuberculosis (Pathogenesis, clinical features, complications)	Medicine	1 hour
Extra pulmonary tuberculosis (TB meningitis, Lymph node involvement, pleural effusion)	Medicine	1 hour
Genital tract TB in females	Gynae/Obstetrics	1 hour
Management of childhood tuberculosis and neonates born to mothers suffering from TB	Paediatric	1 hour
Treatment of tuberculosis including in special situations e.g. pregnancy, renal failure, elderly, liver disease, etc.	Medicine	1 hour
Intestinal tuberculosis; abdominal tubercular lymphadenitis	Surgery	1 hour
Bone and joint TB including hip and knee joint TB	Orthopaedics	1 hour
Spinal tuberculosis including cold abscess	Orthopaedics	1 hour
Urogenital tuberculosis in males	Surgery	1 hour
TB with HIV & emergencies in tuberculosis	Medicine	1 hour
Skin manifestations of TB	Dermatology	1 hour

Table 2. Teaching methods, duration and involving different departments in the TB Module for medical undergraduates

Student's Seminar (SEM)	Department	Duration
Tuberculosis with special reference to Nepal		
Epidemiology National tuberculosis control programme Multi-drug resistance tuberculosis New advance in the diagnosis and management Prevention of tuberculosis	Community Medicine, Medicine, Surgery, Paediatrics, Gyne/Obs, Pharmacology	2 hours
Small Group Discussion (SGD)		
X-ray	Radiology(batch wise)	2 hours for each batch
LABEX		
ZN staining and Mantoux-testing	Microbiology(batch wise)	2 hours for each batch
Slide Session		
Gross and microscopic lesions in tuberculosis of various organs	Pathology	2 hours for each batch
Case Based Learning in Field (CBLF)		
Visit to NGO (Britain Nepal Medical Trust, Nepal Anti Tuberculosis Association)	Community Medicine	1 day
Visit to Madhuban/Ithari – DOTS clinic	Community Medicine	1 day
Case Based Learning (CBL)		
Hospital Indoor (Wards)	Medicine, Paediatrics, Surgery (batch wise)	2 hours for each batch

During Phase I (first two years of MBBS course); TB is taught as Problem Based Learning (PBL) duration of one Week and major departments involved in this program are Community Medicine, Medicine, Microbiology, Pathology, and Pharmacology. In phase II (next two and half years), over 13 hours of structured interactive sessions, are conducted by various departments (Table 1 & Table 2) in addition to those, seminars and small group teachings activities were in third year of MBBS course. The Case Based Learning in Field (CBLF), visit to NGO (Britain Nepal Medical Trust, Nepal Anti Tuberculosis Association), Primary Health centre DOTS program was conducted by the department of Community Medicine. Case Based Learning (CBL) in hospital Wards of Medicine, Pediatrics' & Surgery departments were also done in different batches. To know the feedback about BPKIHS TB Module from 3rd year medical undergraduates.

METHODOLOGY

A descriptive study was applied for the study over period from March 2004 to May 2008. The study

was conducted by the department of Community Medicine, BP Koirala Institute of health sciences. Feedbacks were taken from 3rd year MBBS students of the batches from 2004 to 2008, who had gone through teaching method of TB Module. Semi structured questionnaire was used to perform interview applying convenience sampling technique. The key data information included different characteristics of TB module like content, relevancy, objective, student participation, time adequacy and some suggestion to improvement.

The collected data were entered into computer using excel data sheet. The qualitative data were summarized and expressed as frequency, percentage and presented in tables, bar diagram and pie chart.

RESULTS

A total of 471 students participated in the study (Table 3). The distribution of student's number was different from 2004 to 2008. Male students were found more than females.

Table 3. Yearly batch wise students participated in the study

Year	Male (row %)	Female (row %)	Total
2004	47 (62.7%)	28 (37.3)	75
2005	66 (66.0%)	34 (34.0%)	100
2006	65(67.7%)	31 (32.3%)	96
2007	62 (62.0%)	38 (38.0%)	100
2008	65 (65.0%)	35 (35.0%)	100
Total	305 (64.7%)	166 (35.3%)	471(100%)

In the present study 87.2% students told that contents of TB was adequate (Table 4). Most (82.7%) of the students said that student’s participation during teaching TB module was enough. Majority (89.2%) of them replied that time allotted for teaching module was adequate.

Table 4. Different characteristics of BPKIHS TB Module

Characteristics	Adequate	Too much	Inadequate	Total
Content of the Module	87.2%	11.4%	1.4%	100%
Students participation	82.7%	0%	17.3%	100%
Time allotted	89.2 %	9.1 %	1.7 %	100 %

Regarding objective of the module, almost all students replied that that objective of the TB module was clear,

A significant positive response was found among the students (97.5%) related to relevancy of the contents of the TB module (Figure 1).

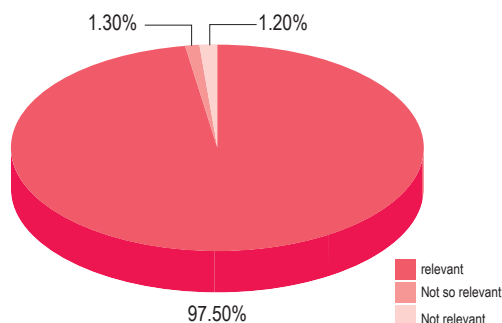


Figure 1. Relevancy of the contents of TB module

Majority of the students (97-98%) appreciated the field visits to PHC DOTS program and NGO/ INGO supported DOTS clinics (BNMT, NATA). They found

these field visits very useful & informative. Similarly 98.4% students reported that the methodologies used for different activities and sessions in TB modules were. (Structured, interactive sessions, Lectures, Seminar) appropriate and very useful for them (Figure 2)

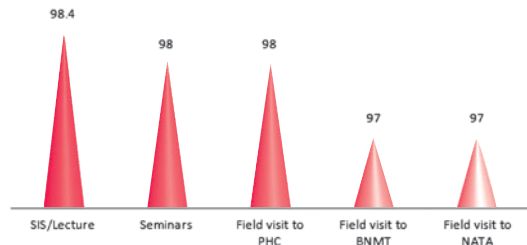


Figure 2. Responses of different teaching methods used in TB module

DISCUSSION

The BPKIHS TB module, is thoroughly integrated, community oriented, field based and case-based, incorporating a need -based approach. The module was well received by medical undergraduates. Almost all reported that the objective of TB module was clear. Regarding content and relevant of the module around 98% replied that it was relevant where as 11% said “its contents are too much”. Nearly Ninety eight percent (97.5%) replied that TB module was relevant with TB diagnosis and treatment. Duration of the TB module was reported to be adequate by majority (89.2%) students where as few (1.7%) opined as inadequate.

Student’s knowledge, based on assessments, increased to satisfactory levels. A study by N Selvakumar et al, Proficiency to read sputum AFB smears by senior tuberculosis laboratory supervisors under training at reference laboratory, the sensitivity to read sputum AFB smear by fresh trainee with little or no experiences increased from 75% to 94% during the carefully planned training programme; the specificity increased from 88% to 99%.⁸

Almost all (98%) students felt that field visits were very useful & informative; health workers in NATA and primary health center (PHC) were helpful and gave opportunity to learn in friendly environment. Such field visits help to understand the real scenario of care providers and problems faced by them during diagnosis & treatment.

Regarding methodology for the module, they replied that it was appropriate and useful (98.4%). The novel aspects of teaching included reading chapters in classroom followed by Problem Based Learning (PBL) & seminar, modular assessments were highly rated.

Similar result was found in the study done by Harries AD et al, the Malawi experience, teaching tuberculosis control to medical undergraduates by using the teaching module from 2000 - 2002.⁹

Suggestions provided by students: The student's suggestions were that the module should include management of MDR and XDR TB, as well as BCG vaccination. Interaction with TB patients should be encouraged during the field visits. Student's participation should be increased as much as possible. The module should have more practical aspects. Similar type of teaching module should be developed for other disease like Malaria, Kalaazar and HIV/AIDS.

CONCLUSION

The module was well received and appreciated by the undergraduate medical students. It is recommended that this innovative BPKHIS TB module may be implemented in other medical school of SAARC countries after necessary modifications in their own context.

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