

Case Report

Role of undergraduate teaching: a link between patients and program implementation

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ABSTRACT

In India, tuberculosis (TB) remains to be one of the communicable diseases of major public health concern. Majority of the vulnerable population remain in urban parts of India. The role of active case finding and notification takes a spotlight for the successful implementation of the program. This article gives a case report of how an undergraduate training in conducting a house-house field survey as a part of community postings have enabled a TB patient from getting a timely diagnosis and treatment follow up. The stigma associated with the disease still continues, which has been appropriately addressed by our urban health training center. This has enabled the patient to complete the treatment successfully and become a TB champion. This case report depicts the importance of community-based field training to undergraduate medical students to enhance their skills and ability as well as to strengthen the ongoing national programs, a blessing in disguise.

Keywords: Communicable diseases, Active case finding, Undergraduate training, TB

INTRODUCTION

Tuberculosis (TB) is one of the ancient diseases of mankind. After the discovery of *Mycobacterium tuberculosis* by Dr Robert Koch in 1882, the disease's diagnosis and treatment had gained momentum. Around 1.7 billion people in the world who gets infected are at the risk of developing the disease during their lifetime. An estimated 10.0 million (range, 9.0-11.1 million) people fell ill with TB in 2018. There were 1.2 million (range, 1.1-1.3 million) TB deaths among HIV-negative people (a 27% reduction from 1.7 million in 2000) and an additional 251 000 deaths (range, 223,000-281,000) among HIV-positive people. South East Asia contributes 44% to global burden of TB.¹ In India, the total TB incidence was 2690 thousand, at a rate of 199 per lac population as per India TB report 2018.² Though the directly observed therapy short course (DOTS) has cured millions of people, the incidence of diseases is still high.

It remains to be the most common infectious agent causing highest mortality and morbidity leading to health and economic burden of India. According to WHO, a third of three million TB cases are either undiagnosed or remain unnotified.³ Persistent high TB burden can be ascribed to many reasons a few of which are: social conditions, co-morbidities (malnutrition, diabetes, HIV), shortfall in implementing the sanctioned infrastructure, weak advocacy around TB, low awareness among the public, more utilisation of private facilities than free service from public facilities, high out of pocket expenditure (OOPE), social stigma and delays in seeking appropriate care.⁴ In India, the median delay in seeking care was found to be around two months and patients had consulted almost three physicians before getting the diagnosis.⁵ Largest and dense set of vulnerable population remain in the urban areas of India contributing to high transmission rates. Hence strengthening the urban

primary health facilities will be a key contributor in reducing the burden.⁶

One of the key focus areas for National Strategic Plan (NSP) 2017-2025 is to include active case finding and contact tracing in high risk / vulnerable population in order to achieve the goal of ending TB by 2025.⁷ According to sustainable development goal (SDG) 3, under target 3.3, TB epidemic has to be ended by 2030.⁸ In order to reach the goal of 80% reduction in incidence of TB and 90% reduction in TB deaths, there are three pillars of action suggested by WHO. They are: 1. Integrated, patient-centred care and prevention, bold policies and supportive systems and intensified research and innovation.⁹

As the importance of treatment is reiterated, so is the value of active case finding and notification. Here we have presented the success story of how an undergraduate teaching activity has indirectly served the purpose of active finding and led to the initiation and maintenance of treatment to the patient.

CASE REPORT

There are more than 400 medical colleges for undergraduate medical training in India with more than 52,000 students in total.¹⁰ The total duration of training is five and a half years which includes a final internship to be certified as Bachelor of Medicine and Bachelor of Surgery (MBBS). There are in all three community medicine postings of total 12 weeks duration (225 h) spanning over the first, second and third parts of undergraduate medical training. The vision document of the Medical Council of India (MCI) proposes the introduction of new teaching elements that emphasise training at primary and secondary level with compulsory family medicine training.¹¹ Community exposure and community projects are one of the many examples of newly introduced 'electives' which aid flexible learning

A batch of 25 students was were posted from 1st July to 3rd July 2018 for a family survey. The students were divided into eight groups, with each group having both genders to facilitate communication in the family. During this survey, the 3rd professional medical students identified a 19-year-old female who was a known case of TB not taking TB medications properly. "Patient was suffering from a lot of side effects like vomiting, headaches, skin rashes, but her complaints were not addressed in the government set up. Since she felt that the drugs were not suitable for her, she consulted a private practitioner. Again, the patient was dissatisfied with the care provided. Patient's verbatim: "On the first day after taking medications I felt like I was going up and down [experiencing nausea and dizziness]; I could not sleep the whole night. Everything was rotating, I felt as if I did not exist. Taking 6-7 pills was impossible for me...I am already weak, even when you utter the name of taking medicine, my head starts cracking." After 1 month "I was

not able to see properly; I had itching all over my body. I had abdominal pain in the morning, and I could not sleep. I used to cry...I used to get up at midnight, talked like anything, not able to understand what is happening to me. My memory was going down. Sometimes I could not bear the pain, sometimes I had thought of committing suicide."

After understanding the gravity of the problem, the UG students timely reported the entire scenario to Senior faculty who accompanied them for the family survey visit. After which patient was taken to district hospital and necessary investigation were done and found that the patient was suffering from multi drug resistance (MDR) TB and treatment was started in intensive phase injectables and oral drugs as per the guidelines for shorter regimen for MDR TB with kanamycin, moxifloxacin, ethionamide, clofazimine, pyrazinamide, high dose isoniazide, ethambutol in intensive phase for 4 months and high dose moxifloxacin, clofazimine, pyrazinamide and ethambutol in continuation phase for 5 months.

Patient also reported being socially isolated and discriminated against for being infected with MDR-TB. This fear of discrimination directly interfered with MDR-TB treatment and activities to promote adherence. Patient did not want health workers to visit their home for adherence counselling and did not want to attend their local treatment centre due to a potential disclosure of their disease. In particular, addressing issues of social stigma for an unmarried women infected with MDR TB was challenging for providers. So, the patient was followed up regular basis in our urban training centre where she was given counselling and medical management for the side effect of the medication. Nutrition support was also provided under nutrition support programme. At her diagnosis she weighed 39 kg and at end of her intensive phase the weight gain was 2 kg and by end of 6-month total weight gain was reported to be 5 kg and by end of treatment total weight gain was 7 kg. After the completion of treatment, sputum was tested at 9 month and was found to be negative for acid fast bacilli.

DISCUSSION

With 1.3 million deaths annually, tuberculosis remains one of the leading causes of mortality worldwide. The emergence of multidrug- and extensive drug resistance (MDR-TB and XDR-TB, respectively) is a major public health problem that threatens progress made in TB care and control. Drug resistance arises due to improper use of antibiotics in drug-susceptible TB patients, which includes administration of inappropriate treatment regimens and failure to ensure that patients complete the whole treatment course. Essentially, drug resistance arises in geographic locales with weak TB control programs. A patient who develops active disease with a MDR-TB strain can transmit this form of TB to other individuals. Our finding of a negative relationship between experiencing adverse effects to MDR-TB treatment and adherence is consistent with previous studies.¹²⁻¹⁴ Vega et

al described psychiatric issues in the management of patients with MDR-TB including depression and anxiety, two issues vividly described during patient interviews. A shorter duration of MDR TB treatment and addressing psychiatric issues in patients that arise during treatment have been recommended as potential strategies to improve adherence.^{15,16} A medical student, being the link between patient and policy maker is a key position that carries benefits for the entire health policy-making process and the individuals involved.

“Service learning” is a recognized approach within health policy education. This involves students participating in community-level service using principles learnt in formal academic programs. Given that teaching in medical school should already be well established with set learning outcomes, introducing a community activity could provide a choice of enrichment experiences. The question of whether formal lecture-based teaching time should be reduced in order to include the practical aspect would require greater discussion. Interestingly, a study by Patel et al found that students who received an intensive course on health systems self-reported three to four times greater perception as appropriately trained compared to those with a lower intensity course.¹⁷

Medical and health care-related education is currently changing, educators have realized that learners need to see the relevance and be actively engaged in the topic under study. They serve as a useful platform for sensitising medical students towards rural living and health needs with the added advantage of rapport building of medical colleges with the rural community. They serve to bridge the disconnect that can occur between medical colleges which are usually located in urban areas, training urban students but covering rural field practice areas. This type of learning has been shown to enhance clinical knowledge, improve teamwork, clinical skills, practice behaviour, and patient outcomes.

CONCLUSION

Multiple factors influenced the patient's decision to adhere to MDR-TB treatment. Self-motivation, awareness about disease and treatment, counselling support, family support, nutritional support and social support were important drivers for successful treatment. Providers related that motivational counselling, nutritional support, family support and social support encouraged treatment adherence. To improve MDR-TB treatment adherence, a patient-centric approach should be considered at the programmatic level. There is a need to formulate strategy that includes the above-mentioned factors for treatment adherence. Participants suggested a patient support group led treatment care model for better adherence and treatment success rates in MDR-TB treatment. There is need for such programs to lay a strong foundation for the potential medical fraternity. Hence, we recommend that such training programs should be conducted regularly in all the medical colleges and at all the levels possible to

sensitize the potential learners with essential knowledge which will lay a sound foundation for their pursuit of learning across the under-graduate program and also in their career of medicine.

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