Introduction
Tuberculosis is a disease of great significance in India. With the advent of the HIV/AIDS epidemic the problem has been compounded. The Millenium Development Goal number 6, target 8, is ‘Halt and begin to reverse the incidence of TB by 2015’. In order to achieve this goal the World Health Organization (WHO) launched the Stop TB program; one of the important strategies of which was education and empowerment of communities. It is hypothesized that improving the knowledge and awareness about tuberculosis in school-going children will spread awareness in the general community. This study was done to assess the level of knowledge of high school children, about various aspects of tuberculosis, and to assess the impact of a simple educational intervention on the knowledge of the children, with regard to tuberculosis.

Materials and Methods
The study subjects were students of the ninth grade of the Kaniyambadi Higher Secondary School, which has students from first grade to twelfth grade. The school is located in the project area of the Community Health and Development (CHAD) unit of the Christian Medical College, Vellore. There were a total of 470 students enrolled in the ninth grade class of the school of whom 375 participated in the study. The study was conducted during July 2008, when a questionnaire was distributed to the children for self-administration. It contained a total of 15 questions, to assess the knowledge of the students with regard to tuberculosis, on the following domains, namely, nature of the disease, disease transmission, signs and symptoms of tuberculosis, diagnosis, and its treatment and prevention. A 30-minute, audio-visual health education session was administered with the help of a PowerPoint presentation on tuberculosis, in the Tamil language, the local vernacular. Following this a printed handout was given, which contained these messages in the Frequently Asked Questions (FAQ) format, in Tamil. Subsequently an essay competition on tuberculosis awareness was conducted. The title for the essay competition was ‘Tuberculosis anywhere is tuberculosis everywhere’ — the theme of the world TB day, in the year 2008. After a week the same pre-test questionnaire was re-administered as a post test. Data were entered and analyzed in the EpiInfo 2002 software. Student paired T test was used to compare the pre-test and post-test responses.

Results
The pre-test questionnaire was administered to 375 students. Out of the 375 students 104 did not answer the post-test questionnaire. Hence, 271 students were taken for the analysis. Of the 271 taken for analysis, 141 were boys and 130 were girls. The baseline knowledge of the students about tuberculosis is as tabulated in Table 1. About 77% of the students were aware that tuberculosis was caused by bacteria and 85% were aware that it could spread from person to person. Only 28% of the students knew that the treatment for tuberculosis was for six to nine months. Eighty percent of the students knew that cough and weight loss were the common symptoms of tuberculosis, but only 52% were aware that the sputum test was the diagnostic test of choice. The mean pre-test score was 7.05 (64%) and the mean post-test score was 9.15 (83.2%). The most significant change in knowledge was for the treatment of tuberculosis. This change in knowledge is depicted in Table 2.

Discussion
Important research has been done to assess the
In a study on health awareness among school children in Chandigarh, India, it was seen that 78.5% were aware about the modes of transmission of tuberculosis, 61% were aware about the signs and symptoms, but only 46.5% were aware about the various treatment aspects.\(^5\)

In the current study about 75 to 80% of the students knew about the communicability and modes of spread of tuberculosis. About 85% knew about the signs and symptoms. However, as in the previous studies the level of knowledge about diagnosis and treatment aspects was not good. The study also showed that a simple educational intervention such as a 30-minute, audio-visual presentation and distribution of pamphlets, significantly changed the way the students perceived the disease and its treatment. There was a statistically significant change in the level of knowledge in domains such as diagnosis and treatment of tuberculosis, which indicated that the empowerment of students could guide the community on treatment aspects. The study clearly demonstrated the impact of a simple, 30-minute, educational intervention, in the form of multimedia education, on the knowledge and awareness about tuberculosis among school children. The educational module could potentially be replicated in all schools in tuberculosis-endemic countries. School children could be empowered to be the flag bearers in the fight against tuberculosis.

### Table 1: Baseline knowledge of the children about tuberculosis

| Response                                    | Percentage of students (%) |
|---------------------------------------------|----------------------------|
| TB is caused by a bacteria                   | 77.1                       |
| Lung is the most commonly affected organ    | 76.4                       |
| TB spreads from person to person             | 85.2                       |
| Tuberculosis is preventable                 | 74.5                       |
| Tuberculosis treatment is free of cost       | 71.9                       |
| DOTS refers to a method of treatment of TB   | 27.3                       |
| Smoking causes TB                            | 39.1                       |
| TB treatment is for 6–9 months              | 28.7                       |
| TB treatment is for 1 month                 | 50.5                       |
| BCG vaccine prevents TB                      | 75.2                       |
| Cough and weight loss are common symptoms of TB | 80.4                       |
| Sputum AFB test is the diagnostic test of choice | 52.1                       |

\(\text{TB} = \text{Tuberculosis}, \text{DOTS} = \text{Directly observed treatment short course}, \text{AFB} = \text{Acid fast bacilli}\)

### Table 2: Comparison of knowledge in various domains in pre-test and post-test – Student t-test

| Knowledge domain     | Difference between mean scores | t score | Significance (P value) |
|----------------------|-------------------------------|---------|------------------------|
| About tuberculosis disease | −0.416                        | −10.663 | 0.00                   |
| Disease transmission  | −0.505                        | −9.876  | 0.00                   |
| Symptoms             | −0.110                        | −4.126  | 0.00                   |
| Diagnosis            | −0.383                        | −11.600 | 0.00                   |
| Treatment            | −0.826                        | −13.687 | 0.00                   |

### References

1. Singh MM, Bano T, Pagare D, Sharma N, Devi R, Mehra M. Knowledge and attitude towards tuberculosis in a slum community of Delhi. J Communn Dis 2002;34:203-14.
2. Sharma N, Taneja DK, Pagare D, Saha R, Vashist RP, Ingle GK. The impact of an IEC campaign on tuberculosis awareness and health seeking behaviour in Delhi, India. Int J Tuberc Lung Dis 2005;9:1239-65.
3. Thilakavathi S, Nirupama C, Rani B, Balambal R, Sundaram V, Ganapathy S, et al. Knowledge of tuberculosis in a south Indian rural community, initially and after health education. Indian J Tuberculosis 1999;46:251-4.
4. Bhore PD, Bhore CP, Powar S, Nade AL, Kartikeyan S, Chaturvedi RM. Child-to-parent education: A pilot study. Indian J Lepr 1992;64:51-7.
5. Goei S, Singh A. Health awareness of high school students. Indian J Community Med 2007;32:192-4.