



RESEARCH PAPER

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Knowledge Advancement and Awareness Level Improvement on Tuberculosis among National Service Training Program Students

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Key words: Tuberculosis, Health, Awareness, Improvement, Philippines.

<http://dx.doi.org/10.12692/ijb/18.6.37-41>

Article published on June 6, 2021

Abstract

In this modern era, tuberculosis remains one of the leading causes of mortality among humans, especially in the Philippines. Lack of awareness and proper information dissemination are considerable reasons why cases are exponentially increasing despite the available treatment and advanced technology. With this, the tuberculosis awareness program was conducted among the National Service Training Program (NSTP) students of Southern Leyte State University – Bontoc, Bontoc, Southern Leyte in December 2019. Thirty-six sample participants were randomly selected among the total population who were assessed in their knowledge on Tuberculosis using a test questionnaire prior to and after the program. Paired t-test was used to determine the effectiveness of the awareness program from the scores of pre-and post-tests at 0.05 level of significance. The mean scores of the pre-test were 2.44 ± 0.18 SEM while 9.5 ± 0.13 SEM in the post-test. Results showed significant improvement in their knowledge of the cause, signs and symptoms, transmission, treatment, and prevention of Tuberculosis. Sustainable health education is suggested in changing the behavior and reduce the prevalence of Tuberculosis in the community.

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Introduction

Pulmonary Tuberculosis remains a major health problem in the Philippines, with nearly 290,000 individuals are infected every year (USAID, 2016). This made the country one of the TB-high burden countries. This illness is caused by *Mycobacterium tuberculosis*, which is a pathogenic bacteria belonging to the family *Mycobacteriaceae*. The bacteria are acquired through inhaling from aerosol droplets of an infected person and cause infection of the lungs (NIAID, 2009). The national government through the Department of Health (DOH), as per the recommendation of the World Health Organization (WHO), mandated every Local Government Unit (LGU) in the country to establish Tuberculosis - Directly observed treatment, short-course (TB-DOTS) centers to reduce the number of cases and treat those infected persons by providing free medicines for six (6) months and undertake proper guidance within the treatment and post-treatment period (DOH, 2017).

The present situation suggests that fighting the prevalence of the illness is not solely a medical or public health problem alone but also a social problem where strategies and proper interventions should be undertaken to control the disease effectively.

The WHO suggested empowering the community with the issues regarding TB is essential for effective prevention and control of Tuberculosis. State Universities and Colleges (SUCs) are mandated by the national government to take part in the prevention and control of any contagious diseases through awareness programs and other related activities.

One of the component programs of the Republic Act No. 1706, otherwise known as "An Act Establishing the National Service Training Program (NSTP) for the Tertiary Level," is the Civic Welfare Training Program (CWTS) which facilitates the enhancement of general welfare and betterment of life in terms of safety, recreation and health.

In response to the preceding mandate, NSTP Coordinators must organize activities to raise

awareness of some contagious diseases as a vital and social responsibility to help in the inhibition of the spreading of diseases. Hence, the study is to assess the effectiveness of the tuberculosis awareness program on knowledge levels of NSTP students and to assimilate the information and relay it to other household members.

Materials and methods

The awareness program was held in December 2019 at the Southern Leyte State University – Bontoc campus, San Ramon, Bontoc, Southern Leyte (Fig. 1). Prior to the conduct of the awareness program, an informal assessment was done with the NSTP Coordinator and campus nurse to determine the prevalent illness on the campus. A letter of intent was immediately sent to the Campus Director to secure permission for the conduct of the activity. When all necessary papers were already being placed, the said activity pushed through.

A total of 126 students enrolled in the Civic Welfare Training Service (CWTS) of the National Service Training Program (NSTP) attended the program. Among the total number of participants, the sampling size was determined using Slovin's formula. Thirty-six sample participants were chosen randomly during the conduct of the program.

Research instrument

A survey questionnaire composed of ten questions with choices was prepared for pre-and post-tests. This questionnaire was drafted to measure the improvement of the knowledge of the participants about Tuberculosis, its causes, diagnosis, signs, and symptoms, transmission, and treatment.

Data collection

Scores of each sample participant for pre-and post-tests were recorded. The pre-test was administered prior to the conduct of the program.

The test questionnaire consists of the following topic, namely: a. type of the causative agent of tuberculosis; b. body part directly infected; c. causative agent of

tuberculosis; d. trend of tuberculosis transmission; e. modes of transmission; f. diagnosis of tuberculosis; g. signs and symptoms of an infected person; h. duration of treatment; i. prevention of tuberculosis; and j. Philippine law on tuberculosis. The post-test was given after the discussion and open forum. Data

collection was taken during the conduct of the program only. Participants were given informative leaflets containing facts about Tuberculosis so they can also share them with their family and friends after submission of post-test answers.

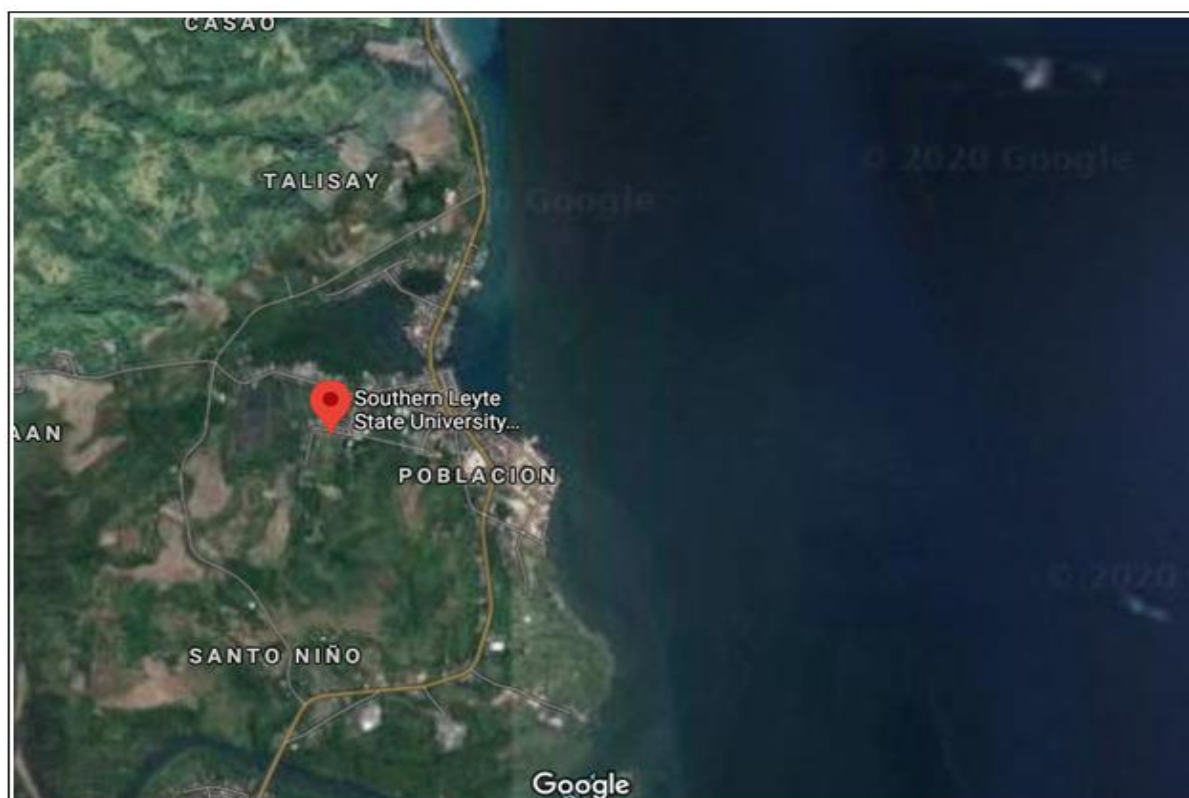


Fig. 1. Location of Southern Leyte State University – Bontoc Campus indicated by the red map mark icon. Photo source: Google Earth Pro (2020).

Data Analyses

The scores during the pre-and post-test of each sample participant were summed up, and the average was computed. To determine if there was a significant improvement in the knowledge of the participants, Paired t-test was used through MS Excel 2016.

Results and discussion

Fig. 2 shows the mean percentage scores of students who took the pre-and post-tests about Tuberculosis. Results of the Paired t-test showed a highly significant improvement in the mean scores of students. The mean score of students in the pre-test was 2.44 ± 0.18 SEM, while 9.5 ± 0.13 SEM in the post-test. These results suggest the effectiveness of resource person in disseminating technical

information to students and the success of the awareness program.

Table 1 shows the number and percentage of students who got correct responses on each specific topic asked in the test questionnaire. Prior to the awareness program, the misconception on the type of causative agent of Tuberculosis can be inferred. Only 11.11% know that bacterium is the cause of TB. However, 97.22% answered correctly in the post-test.

All of the students knew that lungs were directly infected by the bacterium once introduced in the body through inhalation of aerosol droplets. One hundred percent (100%) got the correct answer in both pre-and post-test. However, the students were not able to

distinguish the nomenclature of the bacterium, which causes TB. No one got the correct answer in the pre-test, but 94.44% answered correctly in the post-test.

Only one student (2.78%) in the pre-test and 34 students (94.44%) in the post-test knew the

increasing trend of cases in the country. However, none (0%) in the pre-test and 35 students (97.22%) in the post-test were properly informed on the mode of transmission of the bacterium. It is highly important to be informed on how the bacterium is transmitted to avoid oneself from being infected (Raja, 2004).

Table 1. The number of students who answered the questions correctly. (n=36).

Question	Pre-test	%	Post-test	%
Type of the causative agent of tuberculosis	4	11.11	35	97.22
Body part directly infected	36	100.00	36	100.00
Causative agent of tuberculosis	0	0.00	34	94.44
Trend of tuberculosis transmission	1	2.78	34	94.44
Modes of transmission	0	0.00	35	97.22
Diagnosis of tuberculosis	0	0.00	33	91.67
Signs and symptoms of an infected person	1	2.78	36	100.00
Duration of treatment	31	86.11	36	100.00
Prevention of tuberculosis	7	19.44	36	100.00
Philippine law on tuberculosis	0	0.00	27	75.00

Health professionals used skin tests and sputum tests to diagnose TB cases. However, none in the pre-test and only 33 students (91.67%) were familiar with these kinds of tests. Chest pain and prolonged cough are two of the signs and symptoms experienced by an infected person. Proper cough etiquette should be

properly done when coughing, even without being diagnosed with TB (NIAID, 2009). Only one student (2.78%) was informed about the signs and symptoms before the awareness program. However, all students (100%) significantly learned from the awareness program.

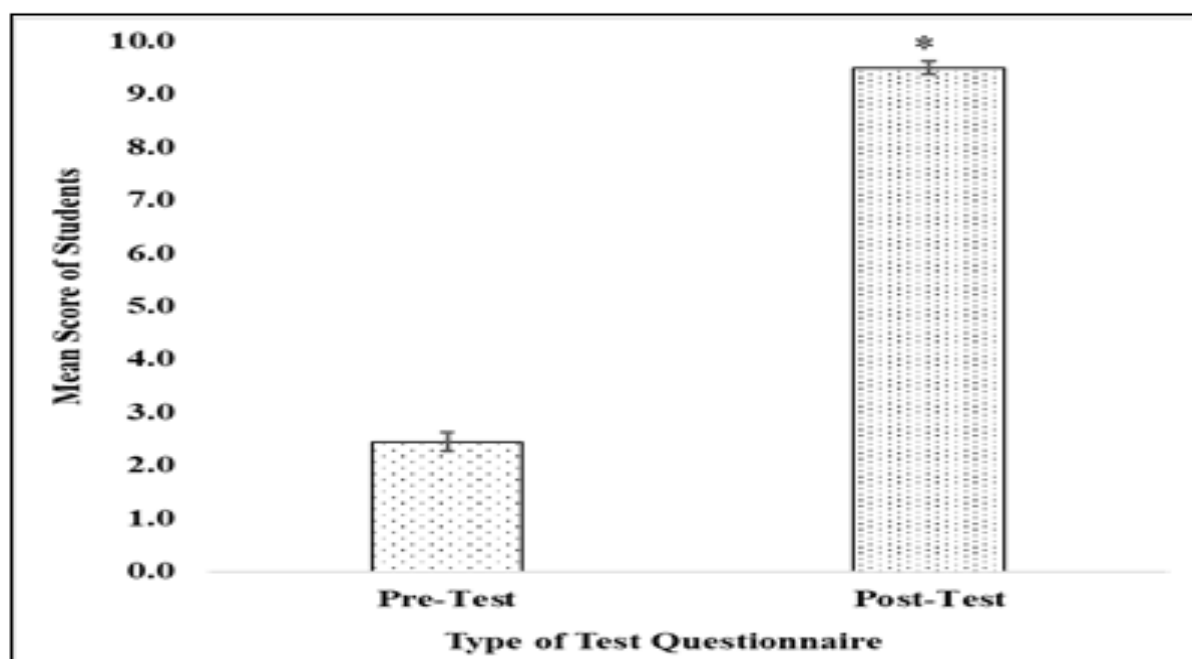


Fig. 2. Mean score of students after taking the pre- and post-test. Post-test results show highly significant improvement after listening to the discussions. Data were analyzed using the Paired t-test using Mean \pm SEM at $p < 0.05$.

Under the DOTS, an infected person must subject oneself to a six-month duration of treatment (Cox *et al.*, 2007). Thirty-one students (86.11%) in the pre-test and 100% in the post-test knew about this. However, only seven students (19.44%) in the pre-test knew the ways of prevention of TB in the pre-test, while 100% of the students in the post-test knew the correct ways of prevention. Republic Act No. 10767, otherwise known as "An Act Establishing a Comprehensive Plan of Action to Eliminate Tuberculosis as a Public Health Problem," mandated the government to adopt approaches to support and expand all efforts to eliminate Tuberculosis in the country. However, none of the students knew about this in the pre-test but improved in the post-test with 27 (75%) who got the correct answer. Several awareness programs conducted in the Philippines and India showed a significant impact on the knowledge of students about Tuberculosis (Thilakavathi, 1999; Nazareno, 2005; Gonthakar, 2013). Thilakavathi (1999) made a substantial increase and impact on health education in South India. It was also recommended to include in the curriculum a TB education program to relay information to all sectors of the community (Nazareno, 2005).

Conclusion

The awareness program demonstrated a significant effect on the knowledge of NSTP students about Tuberculosis. This can be considered as an educational intervention on the cause, transmission, prevention, and treatment of the disease. It is also highly recommended that awareness programs should be integrated into the curriculum and regularly implemented.

Acknowledgment

The authors would like to extend invaluable appreciation to Southern Leyte State University – Bontoc campus, its Campus Director (Dr. Dewoowoogen P. Baclayon), NSTP Coordinator (Ms. Maria Emelee A. Bascug), students for cooperation and support. Also, heartfelt gratitude to the Graduate

School and Research and Development Office of the Leyte Normal University for the unwavering support.

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