

**FACTORS THAT INFLUENCE COMPLIANCE WITH TB
SHORT-COURSE CHEMOTHERAPY OF TB
CLIENTS OF THE HEALTH CENTERS
OF ILOILO CITY**



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by:

VIOLETA S. SANoy-ALINSAO

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ABSTRACT

This study was conducted to look into the factors that influence compliance with TB Short-Course Chemotherapy (TB SCC) of the National TB Program (NTP) registered TB clients of the health centers in the six districts of Iloilo City. Included in the study were those who had started their TB SCC regimen at a time between July 1994 to June 1996, classified as “new cases,” meaning, he/she has never had taken any TB medication before this recent regimen. Furthermore, he/she had a positive sputum smear resulting from an examination by the health centers’ laboratories and he/she resided in any of the barangays of the six districts of Iloilo City when the interviews were conducted.

Specifically, the objectives of this study were to determine the rate of compliance with TB SCC of the registered TB clients of the health centers of Iloilo City. Moreover, it sought to find out whether TB clients’ knowledge about TB and TB SCC, family support, and health provider support have significant relationships to their age, sex, civil status, educational attainment, monthly family per-capita income, and family size.

Likewise, this study endeavored to ascertain if TB clients’ attitude toward TB and TB SCC has significant relationships to their knowledge about TB and TB SCC, family support, and health care provider support. Furthermore, this investigation tried to discover if TB clients’ compliance with TB SCC is significantly related to their attitude toward TB

and will cause 4 million deaths per year, 98 percent of which are in the developing countries.³

In United States, the Center of Disease Control (CDC) reported that as of 1992 there are 26,673 new cases of TB.⁴ Apparently, the figures for 1993 show a small decrease of 25,313 cases which is believed to be the result of increased funding at federal and state levels and more aggressive outreach program to find and treat persons with active TB.⁵

Furthermore, it has been noted that TB is twice as common among males as in females, especially those over 45 years of age.⁶

In 1989, the Center of Disease Control's (CDC) Advisory Committee for the Elimination of Tuberculosis (ACET) published, "A Strategic Plan for Elimination of Tuberculosis in the United States." The committee recommended that a goal be established to eliminate TB by the year 2010. To achieve this goal, a case rate of 0.1 per 100,000 persons was set for the year 2010. At the same time, the "Healthy People 2000" has set an interim goal of TB case rate of 3.5 per 100,000 population by the year 2000 from the baseline of 9.1 per 100,000 in 1998.⁷

³Reiko Nakamura, "Epidemiology of Tuberculosis of Japan and Global," Proceedings of the Southeast Asia Medical Information Center/International Medical Foundation of Japan (SEAMIC/IMFJ) National Training Course on Tuberculosis 8-11 July 1996 (Manila, Philippines: Department of Health, 1996), 7-8.

⁴Phipps, et al., op. cit., 1072.

⁵Ibid.

⁶Dorothy Jones et al., Medical Surgical Nursing: A Conceptual Approach (Boston: Little Brown and Company, 1988), 287.

⁷Phipps et al., op. cit., 1076.

In the national scale, 1996 statistics show that there are 22.34 million or 32 percent Filipinos who are infected with TB. Estimated prevalence rate of sputum (+) is 3.0 per 1,000 or 209,000 population.⁸

In Region VI, 1996 statistics present a much better picture as compared with the national and global scales. Nevertheless, the figures remain to be at the disturbing level. Case detection rate of sputum (+) is 95.3 per 100,000 population. Whereas, PTB mortality rate is 10.5 percent (2,231 cases), or with the rate of 0.04 per 100,000 population.⁸

What is more detrimental is the fact that 1 case infects 10-12 persons per year. In two years, (which is the average life span of the positive sputum smear), for every 20 infected persons, 10 percent will develop the disease, (2 positive sputum smears).⁹ In addition, out of 2 infected cases, 50 percent, or 1 case positive sputum smear will die and 1 positive sputum smear case will remain. This makes at any time throughout the world of at least 10 million distributors of the bacillus, who spread the infection all around. Unfortunately, most of its victims live in the developing countries, where the majority of cases are never diagnosed at all, or incorrectly treated¹⁰

This dismal situation is further aggravated by the emergence of Multiple-Drug Resistant (MDR) TB. Between 50-100 million people worldwide are infected with

⁸Philippines, Department of Health, Philippine Health Statistics (Metro Manila: DOH, 1996), Photocopy.

⁹Philippines, Department of Health, Field Health Information System (Metro Manila: DOH, FHSIS, 1996), Photocopy.

¹⁰ Ibid.

resistant strain of TB.¹¹ In bacteriologic point of view, drug resistance is present when more than 1 percent of the colonies of TB bacilli is resistant to the specific drug.¹² In other words, resistant TB bacilli are not killed by the anti-TB drugs, on the contrary, they multiply rapidly.

Acquired resistance develops when treatment is deficient.^{13,14,15} If inadequate dose is used to treat a patient who is infected with a large number of TB bacilli, only those who are sensitive to that drug are killed, allowing the resistant bacilli to multiply.

On the other hand, primary resistance develops when an individual is infected by someone who has already drug resistance TB bacilli. Definitely, it would take about two years to treat Multiple-Drug Resistant (MDR) TB, and yet with poor result.

¹¹Michael L. Tan, "Drug Resistance," Aids Action: Philippine Updates 30 (Jan-March 1996), 15.

¹²Jaime C. Montoya, "Management of Multi-Drug Resistant TB," Proceedings of the Southeast Asia Medical Information Center/International Foundation of Japan (SEAMIC/IMFJ) National Training Course on Tuberculosis, 8-11 July 1996, (Manila, Philippines: Department of Health, 1996), 14.

¹³J. Crofton et al., Guidelines for the Management of Drug-Resistant Tuberculosis (Geneva, Switzerland: WHO, 1997), cited by Budiono Santoso, "Reaffirming the Management of Tuberculosis," Medical Progress 25, no. 6 (Medi Media Asia, June 1998), 21.

¹⁴A. Laslo et al., "Quality Assurance Programme for Drug Sensitivity Testing of Mycobacterium Tuberculosis in the WHO/International Union Against TB and Lung Disease (IUATLD) Supranational Laboratory Network; First Round of Proficiency Testing," International Journal of Tuberculosis and Lung Disease 1, no. 3 (1997), 231-238, cited by Ibid.

¹⁵M. T. Mendoza et al., "Nature of Drug Resistance and Predictors of Multi-Drug Resistant Tuberculosis Among Patients Seen at the Philippine General Hospital, Manila, Philippines," International Tuberculosis and Lung Disease 1, no. 1. (1997), 59-63, cited by Ibid.

Furthermore, second line drugs would cost 30-35 times as much as drugs used in short-course treatment on non-resistant TB. On top of this, Multiple-Drug (MDR) TB patients need to be hospitalized and isolated to prevent them from infecting others.¹⁶

The World Health Organization (WHO),¹⁷ cognizant of the deleterious effect of MDR, strongly recommends the observance of good-compliance for an effective and efficient management of TB which refers to the rigorous taking of correct dose at sufficient duration of TB chemotherapy to ensure complete treatment of TB. This can be best achieved through taking an appropriate combination of drugs by the TB client to prevent the development of resistance, prescribed in the right dosage, taken regularly by the patient under supervision, and for a sufficient period of time.

Compliance with TB medications are evaluated using the following indicators; namely, (1) cure rate, which refers to number of new positive smear cases who completed treatment and had at least two negative sputum smear results, one of which was obtained at the end of treatment, out of the total number of new positive smear cases registered for treatment; (2) completion rate, which refers to the number of new positive sputum smear cases who completed treatment, with negative smears at the end of the intensive phase, but with no or only one negative sputum examination in the maintenance phase, out of the total number of new positive smear cases registered for treatment,¹⁸ and lastly, (3) smear conversion rate which refers to the number of new positive smear cases

¹⁶Tan, loc. cit.

¹⁷Tan, op. cit. , 6.

¹⁸Philippines, Department of Health, National Tuberculosis Program Guidelines on Chemotherapy for TB Cases Aged Ten Years Old and Older (Metro Manila: DOH, 96). 2.

discovered and converted to negative smear case after two months of treatment, out of the total new positive smear cases registered for treatment.^{19, 20}

On top of this distressing scenario, is the emergence of the disease caused by the Human Immune Deficiency Virus (HIV). TB becomes more life threatening opportunistic infection when associated with HIV. Worldwide, by the year 2000, people infected with TB and HIV is estimated to reach 4 million.²¹ HIV stops the immune system from working effectively, giving way to the TB germs to multiply rapidly. Consequently, people who are infected with both TB and HIV are 25-30 times more likely to develop the disease. Likewise, a new TB infection in an HIV infected person can progress to active disease very quickly, and if have been cured of TB, a person may be more at risk of developing TB again.²²

Clearly, poor- compliance with TB SCC which results to a more toxic cases, could cause more detrimental effects to the client, and will demand longer, and more expensive regimen, if not death. Obviously, the control and prevention of TB is anchored on the following; first, the cure of as many positive sputum smear cases which could significantly cut tubercle bacilli transmission, lower the incidence of TB, and eventually, decrease TB mortality rate; and lastly, the prevention of the development of the more fatal consequences of poor-compliance, which is the Multiple-Drug Resistant (MDR) TB.²³

¹⁹Tan, loc. cit.

²⁰Santoso, op. cit., 19.

²¹Tan, op. cit., 2.

²² Ibid.

²³Maheer et al., op cit., 16.

To this effect, the National Tuberculosis Program, (NTP) which became nationwide in 1978, was given the responsibility in the implementation of the anti-tuberculosis scheme, like Bacille Calmette-Guerin Vaccination (BCG), case finding (diagnosis) and treatment (chemotherapy).²⁴ These activities were likewise integrated into the community health structure, and was equipped to control TB in a systematic and sustained manner. Moreover, in 1986 the Department of Health (DOH) has put into operation “strengthen” TB Control Program to control TB to a level where it will be no longer a public health problem. Furthermore, the DOH distributed anti-tuberculosis drugs popularly known as TB Short-Course Chemotherapy (TB SCC) to the registered TB clients at any government health centers free of charge. The NTP, in addition, pegged its targets of completion rate at 80 percent, conversion rate at 95 percent, and cure rate at 85 percent.²⁴

In view of this, the NTP has formulated its medium-term targets which are in accordance with the recommendation of the World Health Organization (WHO) for the Western Pacific Region which are the following; first, that the disease should no longer be among the major leading causes of death and that the mortality rate from all forms of TB should be lower than 10 per 100,000 population annually; second, that the prevalence of infectious pulmonary TB based on microscopic examination of sputum should be lower than 1 per 1,000 population annually; and lastly, that the risk of TB infection should be lower than 1 percent, with the percentage of tuberculin reactors

²⁴Florentina F. Alonzo et al., ed., State of the Art Tuberculosis: Technical Report (Metro Manila, Philippines: Council for Health Research and Development, Lung Center of the Philippines, Department of Science and Technology, 1990), 8.

among the unvaccinated children at the time of school entrance should be lower than 5 percent. Through community participation, inter and intra-sectoral linkages among Department of Health (DOH), Philippine Tuberculosis Society (PTS), Department of Education, Culture and Sports (DECS), private medical, socio-civic organizations and other volunteers, have been made to improve case-finding and case-holdings of TB patients. An intensive information and education drive has also been conducted by the participating groups.²⁵

Despite these formidable efforts exerted by the government, however, 1995 National Tuberculosis Program (NTP) Accomplishment Report on Short-Course Chemotherapy (SCC) still revealed an exceedingly disappointing figures on completion rate which are as follows; 57 percent in Region VI, 41 percent in Iloilo Province, and 60 percent in Iloilo City. All ratings were par below the target completion rate of 80 percent set by the NTP.²⁶

In addition, Iloilo City cure rate as of 1995 was 60 percent which was also short of the 85 percent set by the NTP.

Alerted by these findings, the government did an analysis of NTP's operation. Problems identified include inadequate motivation due to lack of knowledge and support, failure of the health workers to motivate and follow-up TB patients during treatment, health facilities' lack of support and concern, and lack of Local Government Unit's (LGU) support to NTP in devolution system. Once again, alarmed

²⁵Ibid.

²⁶Philippines, Department of Health, National Tuberculosis Program (NTP) Accomplishment Report, (Metro Manila: D O H, 1995), Photocopy.

by this disturbing finding, the DOH officials prompted the NTP to consider. “low cure rate due to poor treatment compliance,” as the priority problem.²⁷

Basing on this information, it seems to suggest that more light needs to be shed to explain the factors that influence compliance with TB Short-Course Chemotherapy (TB SCC) of the NTP registered TB clients of the Health Centers of Iloilo City.

²⁷Philippines, Department of Health, National Tuberculosis Program (NTP) Report, (Metro Manila: D O H, 1996), Photocopy.