



Health Care Providers Practices and Patient Factors: Their Influence on Antitubercular Medication Adherence in Talamban, Cebu City, Philippines

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Research Article

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Abstract

Objectives:

The purpose of this study was to identify the practices of the health care providers (HCPs) and patient factors influencing adherence on antitubercular medications. This study provides a preliminary data on the actual practice of health care providers and observed as how it was translated into practice by the patients on antitubercular medications.

Methodology:

This was an exploratory, descriptive study. Structured written interview questionnaire was used as instrument. Two separate questionnaires were used, one for the HCPs and the other for the patients. Twenty TB patients and seven HCPs from the government-run health center in Talamban were randomly selected.

Results and Conclusion:

Fifty seven percent of HCPs conducted patient education in terms of dose, frequency of administration, period of administration and adverse effects of TB medicines. Patient education was limited to specific positions among HCPs. One significant practice initiated by HCPs was the home – provision of antitubercular medications. For medication factors, patients disliked the taste, size and number of medicines. Seventy five percent ignored or endured adverse effects and continued taking medicines. Health care practices included patient education (70%) (emphasized instructions, encouragement, constant reminding and fostered care) and provision of free medicines (30%). For patient practices, 70% were motivated to be cured thus took the prescribed medicines, 55% remembered taking their medication by incorporating it to specific daily routines, 40% were reminded by family members

and 35% used cellular phones and sticker reminders. TB patients in Talamban were adherent to their medications.

Keywords: antitubercular medications, adherence, health care providers, tuberculosis, Cebu City

Introduction

In 2011, 1.4 million people died from tuberculosis (TB) in the world^[1]. In the Philippines, TB is the number six leading cause of death, with 73 Filipinos dying every day of TB. Total tuberculosis prevalence in the Philippines is estimated at 460,000^[2]. Out of 196 countries, the Philippines has the distinction of being included in the top 22 high-burden tuberculosis countries in the world. This report is according to the World Health Organizations (WHO), which ranks the Philippines at number nine worldwide^[3].

Tuberculosis is a disease caused by a bacterium called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. In some patients, the bacteria overcome the immune system and multiply, resulting in progression from the non-infectious type, latent tuberculosis infection to TB disease^[4].

TB treatment course spans from 6 to 9 months which includes 10 drugs currently approved by the U.S. Food and Drug Administration (FDA). Of the approved drugs, the first-line anti-TB agents that form the core of treatment regimens include: isoniazid (INH), rifampin (RIF), ethambutol (EMB), and pyrazinamide (PZA). Regimens for treating TB disease have an initial phase of 2 months, followed by a choice of several options for the continuation phase of either 4 or 7 months (total of 6 to 9 months for treatment). The continuation phase of treatment is given for either 4 or 7 months. The 4-month continuation phase should be used in the large majority of patients. The 7-month continuation phase is recommended only for three groups: patients with cavitary pulmonary tuberculosis caused by drug-susceptible organisms and whose



sputum culture obtained at the time of completion of 2 months of treatment is positive; patients whose initial phase of treatment did not include PZA; and patients being treated with once weekly INH and rifampentine and whose sputum culture obtained at the time of completion of the initial phase is positive^[4].

The success of any medication therapy is greatly dependent on one's adherence. However, despite all the best intentions and efforts on the part of the HCPs, success of medication therapy might not be achievable if patients are non-adherent. This shortfall may have serious and detrimental clinical effects. Beside undesirable impact on clinical outcomes, non-adherence would also cause increased financial burden for society since non-adherence has been associated with excess urgent care visits, hospitalizations and higher treatment cost^[5]. Non-adherence to anti-tuberculosis treatment is the most serious problem in TB control^[6]. A great challenge to antituberculosis control program is ensuring that TB patients seek diagnosis in a timely manner, and once diagnosed, adhere to treatment^[7].

According to a study in Ethiopia, factors for non-adherence include access to health facilities, financial burden, quality of health services provided and dynamics of social support^[8]. With those factors identified in Ethiopia, little is known about patient factors affecting adherence of antitubercular medications in Cebu City, Philippines. Moreover, these factors may not hold true as describe by Naing in 2001 that factors on patient adherence vary among different geographical locations. This study provided preliminary data on patient factors affecting their adherence in Talamban, Cebu City, Philippines. Furthermore, this study probed on the factors influencing adherence directly attributed to practices of health care providers involved in TB medication management.

Significance of the Study

This study provided preliminary data on two broad factors (patient and health care providers practice) that affect patient adherence on antitubercular medications. With the output of the study, identified patient factors may be given appropriate interventions that promote adherence. Furthermore, health care providers can be presented with integrated recommendations into their practices on patient education or counseling among patients undergoing antitubercular medications therapy.

The results of this study may reflect the practices of health care providers dealing with patients on antitubercular medications. With this, practices of health care providers that are deemed to be insufficient may be given interventions that will enhance their practices that consequently affect patient adherence. In the academic setting, the study will provide a picture on the actual experience of health care providers on public health research so that modified teaching instructions may be produced which are in line with the current trends in pharmacy education.

Lastly, the result of this research would validate the efforts of the government in terms of program implementation through the health care providers concerned and impact of these programs on Filipinos undergoing antitubercular medications.

Material and Method

Research Design

This was an exploratory, descriptive study. Simple random sampling of twenty TB patients and seven HCP (physician, nurse, pharmacist, midwife) from a government-run health center in Talamban, Cebu City was used for the study.

Research Instrument

The research instrument used was a written interview questionnaire in a pre-defined order. Two separate questionnaires were used, one for the HCPs and the other for the patients. The guided written interview was conducted among patients in their respective households and in the health center. Questionnaires for the patients included queries on their practices and characteristics of treatment regimen while questionnaires for the HCPs included queries on their monitoring practices and recommendations.

Data Collection and Procedure

Linkage with the local health center was established through a written communication. Site visits were accompanied by site guides supplemented by the health center to endorse, assist the researchers and gather data from households.

A structured household interview was used in the collection of data. The research instrument was a printed interview questionnaire in a pre-defined order for interviewing patients. Prior to the interview, patients were given informed consent. During the interview, the patients were asked to show the antitubercular medications.

Statistical Analysis

The results of this study were calculated by percentages. Percentage is commonly used to represent statistical data and provides an easy to read statistic. It is considered an important tool to illustrate the proportion of something. To calculate the survey percentage, the researchers used basic division wherein the total selected options among the given choices in the questionnaire would be divided by the total responses^[9].

Formula to calculate percentage response:

$$\%response = \frac{\text{number of responses}}{\text{total number responses}} * 100$$



Results and Discussion

Majority of the respondents (60%) were males while 40% were females (Fig. 1).

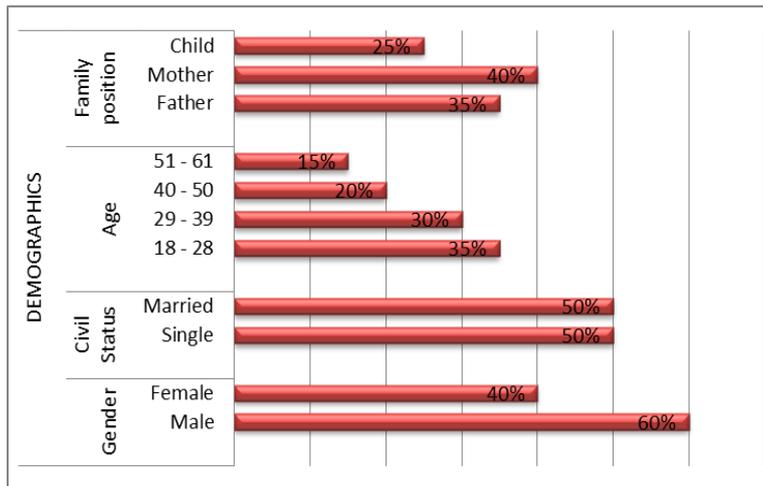


Figure 1. Demographics

Results showed that 57% of the HCPs conducted patient education in terms of dose, frequency of administration, period of administration and adverse effects of TB medicines. Patient knowledge assessment through questioning was also done by the HCPs to ensure understanding of information during patient education on antitubercular medications. However, patient education was limited to specific positions among HCPs (physician, nurses, midwives and nursing assistants) dealing with TB patients. Physician and nurses were the only allowed HCPs to provide TB medication information. Midwives and nursing assistants were not trained in the management of TB. It was observed that access to antitubercular medicines was made possible in the absence of a pharmacist.

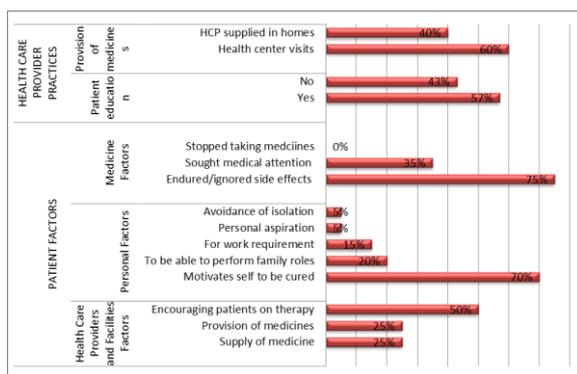


Figure 2. Health Care Provider Practices and Patient Factors

Patient education and counselling strategies have been shown to improve treatment outcomes for certain conditions. However, their value for people with tuberculosis is unclear. Providing patients with complete and current information about their health helps create an atmosphere of trust, enhances the healthcare provider-patient relationship, and empowers patients to participate in their own health care^[10].

Moreover, supervised medicine intake was done throughout the course of the treatment. One significant practice initiated by the HCPs of Talamban during the course of treatment was the provision of antitubercular medications wherein assigned HCPs were tasked to directly give the medications to the TB patients near their homes so that specified patients need not visit the health center for treatment. The specified patients who were physically incapacitated secondary to TB condition and distant from the health center were assisted with this service. Also, patients were given their medications ahead for the weekends and holidays where the health centers and health care providers were unavailable. Access to medicines was made easier for the patients living far out from the health centers and was found to be 100% adherent as compared to those visiting the health centers.

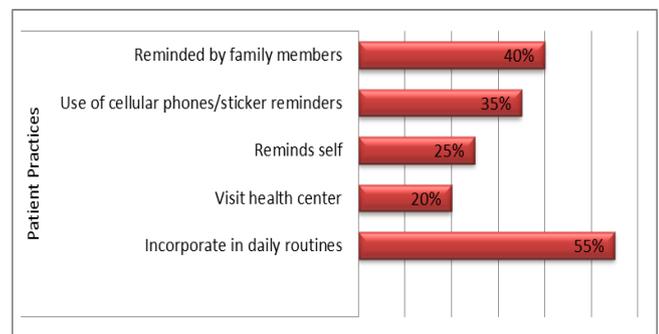


Figure 3. Patient Practices

Access to pharmaceuticals is one of the key pillars of any healthcare system. It helps to lower overall healthcare costs by reducing the need for hospitalization and expensive, invasive procedures. After improvements to basic sanitation, access to clean water and immunization, access to pharmaceuticals is one of the most cost-effective health-related measures^[11].

In terms of the health care provider characteristics and health care facilities factors (Fig. 2), 100% of the TB patients were instructed by their physician on how to take antitubercular medications and the possible side effects that may come along with the medications. All of the respondents liked the physical layout, attractiveness and cleanliness of the health center which doesn't hinder them from going back to the health center for their TB medications. In terms of the medication factors, 100% of the respondents were not aware of the name of the medicine that they were taking, they heavily relied on the knowledge of the HCPs handling their specific cases as to what medicines they would take. Some of the respondents (25%) dislike the size, taste and



number of medicines used in TB treatment. Majority of the respondents (75%) reported to have endured or ignored experienced adverse effects like discoloration of body fluids, fatigue and rash and respondents continue taking medicines since they were previously informed by the HCPs prior to the initiation of treatment. In terms of personal factors, 70% of the respondents personally motivated their selves to be cured from the disease. Approximately half of the respondents (55%) remembered taking their medication by incorporating it to specific daily routines (eating, drinking, brushing), 40% of the respondents were reminded by their family members, 35% use cellular phones and sticker reminders to remind themselves to take their medications (Fig. 3). Furthermore, results revealed that 90% of the respondents never missed any of the antitubercular medications in the whole treatment while 10% had missed at single dose in the course of treatment but have corrected the lapse.

Conclusion and Recommendations

TB patients in Talamban were adherent to their medications. This reveals the performance of the HCPs involved in the management of TB patients in Talamban, Cebu City. Health care practices such as patient education (70%) encompassing emphasized instructions, encouragement, constant reminding and fostered care and provision of free medicines (30%) were identified by the TB patients. HCPs admitted providing practices such as patient education and monitoring and supply of medications which is parallel to the practices identified by the patients.

The researchers recommend that HCPs must integrate in their TB patient education the assimilation of medication taking into daily routines, use of devices such as cellular phones and sticker reminders, involvement of family members in patient care, self encouragement and active feedback mechanisms with HCPs. Furthermore, parallel to the local clamor for the provision of pharmacist among government-run health centers must be initiated. Installation of pharmacists would augment the current deficiency in trained HCPs in the management of TB. Apart from the role in patient education, pharmacists function in proper procurement, storage, dispensing and assurance of quality antitubercular medications.

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AUTHORS' CONTRIBUTIONS

Authors contributed equally to all aspects of the study.

PEER REVIEW

Not commissioned; externally peer reviewed.

CONFLICTS OF INTEREST

The authors declare that they have no competing interests.