

## CHAPTER V

### DISCUSSION, LIMITATION AND RECOMMENDATION

#### 1. Discussion

This study was the first of its kind to determine the TB treatment default rate in various health care settings in Bangkok. Four health care settings; Bangkok Chest Clinic, Coordinating health center No 4, Hua Chiew private hospital and TB clinic of Chulalongkorn University hospital were chosen to be included in the study. However, due to the fact that approval by ethical committee was required, TB clinic of Chulalongkorn University Hospital was omitted because of time limitation.

The study showed 19 % overall default rate from Oct 2001 to Sep 2004, similar with the National TB program report on treatment outcome for 1999-2003 which showed 19 % of default rate and 67 % of treatment completion rate.

The default rates did not show significant difference between health care settings ; 21.3 % in private hospital, 18.3 % in Bangkok Chest Clinic and 17.9 % in public health center. However it can be noted that private hospital had 3. 4 % higher default rate than public health centers. Generally, it can be expected that patients who seek private health service come from more educated and higher income background than those seeking public health service, and are therefore more likely to comply with treatment. Sigh (1976) reported that socio economic factors like literacy and income

showed significant inverse association with the treatment default. However, the findings of this study showed the reverse trend and were not consistent with other studies. According to the finding of Pronab et al. (2000), the higher default rates (TB center, 38.1 % and District TB center, 29.3%) were found in public health centers compared to the private hospital (10.78 %).

A possible explanation may lie in the fact that private hospital had no supervision system on the program implementation, no defaulter tracing system, integrated health care service including TB treatment at the same department, non flexible opening hours, 88 % of their patients under self administered treatment and the existence of self payment. On the other hand, the location of public health center convenient to the patients at the primary health care level, good supervision system through coordination mechanism, existence of defaulter tracing activity, 99.6 % of TB patients under directly observed treatment (DOT), flexibility of opening hours, free health care service, independent health service only for TB patients and existence of good qualified TB coordinator in each health center are all advantages ensuring adherence behavior of the patients.

On the other hand, it has been proven statistically that treatment default rates did not differ among three health care settings. There might be many reasons to explain. Among those, it is noted that, due to the limitation of study, the characteristics of health service were examined through interview about the process of care occurred in 2004 which happened three years ago. And also patients who died, were transferred out or failed which were important TB program indicators were not considered in this study. Probably, the private hospital had more transfer out rate, death rate and failure rate.

Regarding the research question raised for the identification of factors contributing to the unacceptable high default problem, focus should be on not only type of health setting and characteristics of health service, but also in association with other factors such as socio demographic, behavioral, disease and regimen related factors.

This study found significant association between gender, occupation, HIV positive status, drug addiction and treatment default.

Male gender showed significant association with defaulting ( $p$ -value ; 0.02) and males were 2 times more likely to default from the treatment. Similar results were reported by Santa (2003) and Connolly (1999). Generally, it can be explained that females are more serious about their status of health than males, so the behavior of seeking health service is more active in females than in males (WHO, 2004).

In addition, patients who were merchant showed a significant association with default; they were more than 2 times likely to default from treatment. According to the general observation, merchant are usually busy with their own small business throughout the day and even at night and weekend. Therefore, they may lack the time to successfully complete the treatment regimen.

HIV positive TB patients had highly significant association with treatment defaulting in this study. A similar finding was reported by Cator (2002) that HIV positive status among TB patients was a risk factor, which was independently

associated with default. The finding of the current study indicates that HIV positive TB cases were more likely to default from the treatment. However, the results do not explain exactly why this was the case. To some extent, it can be argued that conditions of HIV positive patients were different from HIV negative, so they might be too overburdened to take many drugs at the same time. Mandok (1982) and Kahsyap (1877) reported that TB patients with other associated diseases who received drugs other than TB medication were less likely to comply with the anti-TB treatment.

In terms of drug addiction, it was significantly associated with treatment defaulting. Patients addicted to drugs were 5 times more likely to default from the treatment than non-addicted. Given the fact that patients can not control their lives once they are addicted to drugs, due to the mental and physical dependence, it is reasonable to assume they can not participate regularly in the treatment process for an extended duration. According to the WHO publication (2003), altered mental states caused by substance abuse may play a role in their adherence behavior.

On the other hand, this study did not find any association between treatment default and certain independent variables, which may have been found in other studies.

Mamboya who conducted the similar study in Bangkok in 2001 reported that defaulters were typically younger than non-defaulters. However, in this study, age was not associated with treatment default. Chee (2000) and Gad (1997) also found that there was no significant association between age and treatment default.

In this study, some patients defaulted from the treatment due to side effect, it was not significantly associated with treatment default. On the contrary, WHO (2003) stated that side effects due to anti-TB drugs were deterrents in continuing treatment. Also, Tolba (1995) reported that side effect was associated with TB default.

Other disease involvement such as Diabetes Mellitus, Hypertension, Asthma and Heart disease were not associated with treatment defaulting in this study. These findings were inconsistent with the findings that patients who had other associated chronic disease such as diabetes mellitus or ischaemic heart disease were less likely to comply with anti-TB treatment (Mandok ,1982 & Kahsyap,1877).

There was no statistically significant association between disease category and treatment default. And also, an analysis was carried out to observe whether smear positive cases which are considered more serious are more likely to default than other cases, but there was no significant association. These findings indicate that seriousness of disease in TB does not affect the patient behavior of treatment defaulting.

The findings of the study showed that type of health care setting and characteristics of health care service were not significant in the case of this study, whereas the factors such as gender, occupation, HIV positive status and drug addiction were proven to be significantly associated with treatment default.

However, due to the limitation of time and simplicity of questionnaire used, findings of the study can not conclude relationship between health service and system related factors and treatment defaulting behavior of the patients

## **2. Limitation of the Study.**

As indicated in the conceptual framework of the problem based on the literature review, defaulting behavior of the patients are determined by a wide range of factors such as socio economic, patient characteristic, disease and regimen related, health system and health service provider related factors which require comprehensive and detailed study.

Due to the limitation of time for the research, considering linguistic and cultural barriers which may interfere contacting people in order to explore various factors related to the defaulting behavior of patients, the study was designed to determine the default rate and its contributing factors through health records available in health settings which might not have sufficient data to find out the potential factors.

Also, the questionnaire for cross-sectional study includes only simple questions which might give limited answers not explaining complex relationships between the health care system and patients. This research part should include in-depth interview with health personnel as well as patients who may reveal essential information about the quality of health service in particular health setting.

This study shows some findings that default rates are very high in settings involved in the study and some factors are associated with treatment default in those setting.

However, due to the limitation of the study based on minimum sample size calculation excluding big general hospitals and university hospitals, the findings of the study can not be generalized to the overall program area.

### **3. Recommendation**

This study undertaken at the 3 health care settings in Bangkok indicates that default rates are very high and therefore need to be dealt with. These results are consistent with the National TB program report. However, default rate was not significantly different between health care settings reviewed in this study. Therefore, TB program officials should focus more extensively on the patient and disease related factors including socio economic, behavioral, and regimen and disease related factors.

However, given the fact that private hospital had 3.4 % higher default rate than public health center, and perhaps public health service had many advantages and strengths in terms of TB program management compared with private facility, the central network of health centers under BMA system should be more encouraged in the Bangkok TB control program.

At the same time, it is true that private practitioners can not be ignored since a great number of private hospitals are functioning in Bangkok and many patients are more likely to seek health service in private hospitals. Collaboration with private hospitals is fundamental aspects to ensure the success of the program. However, according to the results of this study, private hospital withdrew from the program currently due to several reasons. Therefore, ways of collaboration should be explored to

convince them to actively participate in the TB control program and follow the National TB Program guideline.

In addition, regarding the complexity and diversity of health service delivery in Bangkok, health system related factors in relation with high TB default rate should be explored in more detailed way involving general hospital, university hospital and so on.

Based on the findings of this study that HIV positive status and drug addiction are associated with treatment default, it is strongly recommended that TB program should be implemented with the close collaboration with other public health program including HIV/AIDS and anti-drug addiction program.