

# The Potency of Private Practitioners on Tuberculosis Cases Finding and the Factors Associated in Surabaya City, East Java, Indonesia

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## ABSTRACT

Private practitioners (PPs) have an important role for TB cases findings. The study aimed to assess the characteristic and potency PPs on TB cases finding. This was an operational research conducted from April until August 2018. PPs is general practitioners who have valid license and private practice session in Surabaya city. Data were collected through face to face interview using a structured questionnaire. The study succeeded interviewing 86 PPs, 35(40.7%) found presumptive TB at the last 3 months, 30(85,7%) of them refer the presumptive TB for smear examination and 21(60.0) manage the presumptive until definite the TB status. PPs who have average patients a day 15 persons and more have higher potency to found presumptive TB. This study shows the high potency and good willingness of PPs on presumptive TB and cases finding. First priority is involving PPs who have average patients a day 15 persons or more.

**Keywords:** Private practitioners, tuberculosis cases finding, public-private mix.

## Introduction

The National Tuberculosis Control Program (NTP) in Indonesia faces the low of tuberculosis (TB) cases finding. In 2016, the national Cases Notification Rate (CNR) were 128 per 100.000 persons and 2017 were 152 per 100.000 persons. There is a large gap between CNR compare to the TB prevalence (660 per 100.0000 persons). The National Cases Detection Rate also did not reach the target. In 2016 the CDR were 33% and 2017 were 40%<sup>1,2</sup>. One of important strategy to increase TB cases finding is to involve all private health care providers in NTP (NTP Private Practitioners partnership)<sup>3</sup>. Private practitioners (PPs) have an important role for TB cases findings and Directly Observe Treatments Short-course (DOTS) expansion<sup>4</sup>.

The involvement of PPs in health services delivery is an important strategy in health systems strengthening<sup>5</sup>. The engagement of PPs on NTP were roled in *public-private mix* (PPM) scheme. Base on national TB prevalence survey more than 40% people with TB symptoms sought treatment to PPs. Hence, the contribution of PPs to presemptive and TB cases finding relatively low compare to public health center (PHC) and hospital. A study involving telephone interviews of 25% of the private practitioners in Jogjakarta Province another Indonesian city shows that most PPs (63%) reported to have seen TB presumptive in their private practice<sup>6</sup>.

Improving the contribution of PPs will effect to increase and accelerate TB cases finding. TB cases that found by PPs mostly at earlier stage and this is give good effect to prevent TB infection<sup>7</sup>. Many related studies show the involvement of PPs on TB control program, factors associated and intervention supporting but in the setting of Surabaya a comprehensive study is need to assess the characteristic and potency PPs on TB cases finding in Surabaya City on DOTS implementation. This study aimed to assess the potency of PPs on tuberculosis cases finding and identify the factors associated to their potency.

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## Method

**Design:** This was an operational research for evidence support to improve program performance. The design is cross-sectional study.

**Study Settings:** The study conducted for 5 months since from April until August 2018 in Surabaya City, the capital of East Java Province, Indonesia. Surabaya city is the second biggest city in Indonesia with population in 2017 was 3.057.766 persons.

**Study population and sampling design:** The study population private practitioners in Surabaya City, East Java Province. PPs were general practitioner who registered in the medical care unit of health office. We were selecting and visiting all PPs in East Surabaya as the samples of this study. We divided the interviewers in certain area and responsible visiting all PPs (sweeping) in that area. Through this strategy we could validating the PPs data from the register and minimize the sampling bias.

**Data Collection and Analysis:** PPs are general practitioners who have valid license and private practice session in Surabaya city. Potency defined as presumptive TB found at last 3 months at the practice site. Data were collected through face to face interview using a structured questionnaire. We collected information about the characteristics of the private practitioners (age, sex, qualification, type of practice), number of patient a day, opening hours per day and potency of private practitioners.

We trained 16 interviewers to perform the data collection. They trained to approach private practitioners and make an interview. Data was analysed descriptively and delivered in table and narration. Logistic regression was performed to identify characteristic and factor that associated the potency. The ethical clearance was obtained from The Ethical Committee of Faculty of Public Health, Universitas Airlangga.

## Results

**The Characteristic of Private Practitioners:** The study succeeded interviewing 86 PPs with average of age 36.7 years old, 44 (51.2%) were male, 74(86.0%) were full time private practice and 57(66.3%) were practice with associate (group). Average length of practice were 4.5 years and average patients load a day were 14,2 persons (Table 1).

**Table 1: The Characteristic of Private Practitioners**

Characteristic		(n = 86)
Age	means (SD)	36.7 (11.1)
	< 35 years old	47 (54.7)
	≥ 35 years old	39 (45.3)
Sex	Male	44 (51.2)
	Female	42 (48.8)
Main occupation	Full time private Practitioners	74 (86.0)
	Government employee	12 (14.0)
Type of practice	Group	57 (66.3)
	Individual	29 (33.7)
Length of practice (year)	Means (SD)	4.5 (5.3)
	< 5 years	28 (32.6)
	≥ 5 years	58 (67.4)
Average number patient a day	Means (SD)	14.2 (11.8)
	<15 persons	52 (60.5)
	≥15 persons	34 (39.5)

SD = Standard deviation

**The Potency of Private Practitioners on TB Cases Findings:** PPs who found presumptive TB at the last 3 months were 35(40.7%), most of them, 30(85.7%) refer the presumptive TB for smear examination) to PHC or private laboratory. 18 (51.4%) PPs say that they also refer the presumptive TB for chest X-Ray. Most of PPs who found presumptive TB, 21(60.0) managed the presumptive until definite the TB status (Table 2).

**Table 2: The Potency of Private Practitioners on TB Cases Findings**

Variables		(n = 86)
Found presumptive TB cases at last 3 months	No	51 (59.3)
	Yes	35 (40.7)
Refer the patient to PHC or Lab for smear examination? (n = 35)	No	5 (14.3)
	Yes	30 (85.7)
Refer the patient for chest X-ray? (n = 35)	No	17 (48.6)
	Yes	18 (51.4)
The examination complete until the TB diagnosis confirmation (n = 35)	No	35 (40.0)
	Yes	21 (60.0)

**The Factors Associated to Presumptive TB Cases Finding By Private Practitioners:** The characteristic of PPs who found more presumptive TB were male and have average number of patients  $\geq 15$  persons a day. The PPs who practice with their associate (groups) and have good knowledge regarding TB controls program also tend to found more presumptive TB. PPs with average patients a day 15 persons and more have higher potency to found presumptive TB (AOR: 10.5; 95%CI: 3.4-32.4). Male PPs have higher potency to found presumptive TB compare to female (AOR: 3.3; 95%CI: 1.04-10.6) Table 3.

**Table 3: Factors Associated to Presumptive TB Cases Finding By Private Practitioners**

Variables	Found Presumptive TB Cases At Last 3 Months		Simple Logistic Regression		Multiple Logistic Regression	
	No	Yes	OR (95%CI)	p value	AOR (95%CI)	p value
<b>Age, means (SD)</b>						
< 35 years old	29(61.7)	18(38.3)	ref		ref	
$\geq 35$ years old	22(56.4)	17(43.6)	1.2(0.5-3.0)	0.619	0.8(0.2-3.4)	0.728
<b>Sex</b>						
Female	30(71.4)	12(28.6)	ref		ref	
Male	21(47.7)	23(52.3)	2.7(1.1-6.7)	0.027	3.3(1.1-10.7)	0.041
<b>Main occupation</b>						
Full time Private Practitioners	43(58.1)	31(41.9)	ref		ref	
Government employee	8(66.7)	4(33.3)	0.7(0.2-2.5)	0.577	0.6(0.1-3.3)	0.585
<b>Type of practice</b>						
Group	30(52.6)	27(47.4)	ref		ref	
Individual	21(72.4)	8(27.6)	0.4(0.2-1.1)	0.081	0.4(0.1-1.5)	0.176
<b>Length of practice (year)</b>						
< 5 years	18(64.3)	10(35.7)	ref		ref	
$\geq 5$ years	33(56.9)	25(43.1)	1.4(0.5-3.5)	0.514	2.0(0.4-8.6)	0.376
<b>Average number patient a day</b>						
<15 persons	30(71.4)	12(28.6)	ref		ref	
$\geq 15$ persons	21(47.7)	23(52.3)	11.7(4.2-32.6)	<0.001	10.4(3.4-32.1)	<0.001
<b>Knowledge regarding TB program</b>						
Lack	39(66.1)	20(33.9)	ref		ref	
Good	12(44.4)	15(55.6)	2.4(1.0-6.2)	0.061	2.8(0.8-9.6)	0.099

**Discussion**

This study assessed the PPs potency on presumptive and TB cases findings. Results show that most of the PPs were found presumptive TB cases on their practice site. The high potency shows the important partnerships TB program with PPs. A good model collaboration should be built to involve and improve the TB cases finding from PPs. For the first step, the program may priorities to certain characteristic of PPs. PPs who have more patients a day, practice in group should be involved first on collaboration scheme. Prioritization will make the collaboration more feasible and cost effective <sup>8</sup>to impact the TB incidence world over, there is an urgent need to address and accelerate TB control activities in the country. Nearly, half of the TB patients first seek TB care

in private sector. However, the participation of private practitioners (PPs. This finding is similar compare to study regarding public private mix (PPM) in Pakistan that found and suggest selection criteria for PPs involved in the TB program. The selection criteria were important to prevent failure and increase the cost effective <sup>9,10</sup>.

The potency of PPs in presumptive TB finding are quite high because we identify 59.3% of PPs found presumptive TB cases at last 3 month and most of them (85.7%) refer presumptive TB cases to the public health center for smear examination. The results of potency are lower compare to previous study in Jogjakarta that found 63.4%, this because we assess only in 3 months. In term of referring presumptive TB our result are higher compare to Jogjakarta only 41.5% <sup>6</sup>. Their potency and

good willingness should be followed and accommodated by sustain response and care. The engagement of PPs on TB case finding will reduce diagnostic delay and TB transmission <sup>11</sup>.

High potency of PPs on TB presumptive and cases finding also indicate opportunity involve them on TB reporting. PPs who found presumptive and TB cases should report to the program. This will decrease TB under reporting in private sector. An innovative collaboration model should be arranged to involving PPs. Previous study that conducted in several countries including Indonesia found that PPM intervention not yet succeeded to increase TB cases finding <sup>12</sup>. Lesson learn from previous study and intervention regarding PPM is needed.

Innovative approach through good communication and trust building strategies should be arrange to encourage PPs involve on TB program <sup>13</sup>. Training and education for PPs should focus on achieving the minimum standard of TB diagnosis, drug adherence guaranty, prevent the using of inappropriate second line drugs that could lead to more cases of drug resistant TB and simple reporting to program <sup>14</sup>. Furthermore, intervention to engage PPs should consider the notification and reporting mechanisms. Notification mechanisms should address their perceived barriers, improve the efficiency and simplicity of the notification process. Internet and mobile phones may be use in reporting presumptive and TB cases by PPs to the program <sup>15</sup>.

Previous study in Bandung, the other city in Indonesia, learn about the effectiveness of face to face education using catharsis education action (CEA) method in improving the adherence of PPs to national guideline on management of TB. The study found that this method as effective as brief reminder with provision of pamphlet in improving the adherence of PPs to national guideline on management of TB. This finding indicate a psychoeducational strategies is important in influencing physician decision and behaviour <sup>16</sup>. This method is a counselling technique that brings out the psychological concerns that result from wrong perception of reality and hinder appropriate behaviour <sup>17</sup>. This method may an alternative method to inform and encourage PPs to participate on TB program.

These study findings have important policy implications. First, the study shows as the high potency of PPs involved in TB control program. Second, the

prioritization should be arranged for first step program to involve PPs in TB control program in Surabaya. The priority is involving the male PPs and who have average patients a day 15 persons or more, practice in group and increase their knowledge regarding TB control program. The involvement of PPs should be arrange in a bold collaboration and good evaluation. The collaboration program should be support for increase the factor associated to PPs contribution on referring the presumptive TB such as supervising or visiting PPs practice site, providing referral forms of presumptive TB and give the feedback of the examination results <sup>18</sup>.

## Conclusions

This study shows the high potency and good willingness of PPs on presumptive and TB cases finding. The involvement of PPs in Surabaya City on TB cases finding should be arrange in a bold collaboration. First priority is involving the male PPs and who have average patients a day 15 persons or more and increase their knowledge regarding TB control program. The method and materials for PPs training and education should be arrange in a workshop involving their professional organization.

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