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Knowledge, Attitude and Practice on Tuberculosis (TB) among Community in Kajang, Selangor: A Cross-Sectional Study

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ABSTRACT

Objectives: To study the level of knowledge, attitude and practice (KAP) on TB among community in Kajang, Selangor.

Methodology: This is a facility based cross-sectional study. There were 384 respondents selected via simple random sampling in six selected residential areas in Kajang. Data were collected through self-administered questionnaire.

Results and Discussion: The knowledge, attitude and practice score in this study was classified as moderate with mean ± SD of 16.41±1.97, 3.31±0.31 and 3.32±0.58 respectively. Majority of the respondents (70.3%) knew the caused of TB, the well-known symptoms (96.4%) and the transmission of this disease (96%). There were significant difference of knowledge score by occupation ($p = 0.01$). The attitude score was significantly difference by age ($p = 0.001$) and occupation ($p = 0.01$). The practice score was difference by age ($p = 0.04$), races ($p = 0.02$), education level ($p = 0.001$) and occupation ($p = 0.002$). There were no significant association between knowledge, attitude and practice of the respondent in this study.

Conclusion: There were a moderate level of knowledge, attitude and practice among respondents with regards to TB. Specific intervention strategies should be carried out to improve the KAP level among the community about TB and also to increase the strength and positive attitude and practice.

Keywords: *Tuberculosis, KAP, Kajang, Community, Awareness*

1. Introduction

Tuberculosis (TB) still remains a major global health problem that is responsible for ill health among millions of people each year. According to WHO (2013), there were 8.6 million new TB cases and 1.3 million TB deaths. Therefore, WHO declared TB as a global public health emergency. TB is an infectious disease and caused by *Mycobacterium tuberculosis* bacteria (MTB) which most commonly affects the lungs (Frieden, et.al, 2003). Over the past 20 years, there has been a steady increase in yearly notification of new cases of TB in Malaysia. In Malaysia, the state with the highest TB is Sabah followed by Wilayah Persekutuan, Sarawak and Pulau Pinang respectively (Iyawoo, 2004).

According to a report by the Ministry Of Health (2008), although the incidence rate of TB in Malaysia has been stagnant at around 58.7 to 65.6 per 100,000 populations in the last ten years, the absolute number of new cases has been increasing from about 15,000 new cases in 2002 up to 16,665 in 2006. TB cases increased by 6% in Malaysia with 24,071 cases reported in 2013 due to an increase disease detection system that has been carried out by the Health Ministry. Meanwhile, according to Ministry of Health Malaysia (2015), 24,711 TB cases were reported in 2014 which have increased by 2.7% compared to 24,071 cases that were reported in 2013. In addition, there were 1,603 deaths due to TB that have been reported in 2014 compared to 1,597 deaths in 2013.

The primary mode of transmission for TB is via air droplets. When an infected person with active pulmonary disease coughs, sneezes, sings or talks, fine aerosolized droplets of *tuberculous bacilli* with the size of 1 to 5µm are inhaled by another person and deposited in the distal respiratory tree (Frieden et al., 2003). The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Some people develop TB soon after becoming infected before their immune system can fight the TB bacteria. Other people may get sick years later, when their immune system becomes weak for another reason.

The common method for diagnosing TB worldwide is sputum smear microscopy, in which bacteria are observed in sputum samples examined under a microscope. Without treatment, TB mortality rates are high. The current recommended treatment for new cases of drug-susceptible TB is six month regimen of four first-line drugs; isoniazid, rifampin, ethambutol and pyrazinamide (CDC, 2014).

There was a high prevalence of TB with its associated factors such as socio-demographic factor, lack of knowledge about the symptoms and mode of transmission, awareness and bad practices on TB among community (Koay, 2004). There is also a large proportion of those who are suffering from TB failed to seek care from health facilities possibly because of the social stigma that is attached with the disease (Ho, 2004; Koay, 2004; Malik, 2015).

Since the prevalence of TB is increasing in Malaysia the study of knowledge, attitude and practice (KAP) among community needs to be done. Therefore, this research was aimed to explore the level of KAP among community and identify the potential modifiable risk factors of TB for better prevention and control as well as to provide valuable findings that could help to improve the TB Control Programmes in Malaysia.

2. Materials and methodology

2.1 Background of study location

The location of the research was at Kajang, Selangor. Six different residential areas in Kajang which are Taman Kajang Utama, Taman Kajang Perdana, Taman Mesra, Taman Jenaris, Taman Impian Ehsan and Kg. Sg. Kantan were selected to distribute the questionnaire.

2.2 Study design and sampling

This is a descriptive cross-sectional study conducted in six residential areas in Kajang, Selangor. The list of residential areas was obtained from the Kajang District Office. Six residential areas were selected using Fishbowl technique where names of the residential areas were written on a piece of paper and placed on a bowl to be randomly picked. The number of pieces of paper was corresponded to the number of residential areas. This technique was used to avoid bias.

The total of 384 houses was involved in this study where 64 houses were selected from each residential area. Houses in each resident were selected via systematic random sampling methods (every fourth code number of houses). This method was used to minimize selection bias and there was equal chance of the respondents to be selected in this research. The sample was among all of resident include all gender and race. The following households that had past history of TB, aged below 18 years old or foreigners were excluded from the research.

2.3 Study instruments

The respondents were assessed by using self-administered questionnaire which consists of 2 sections. Sections A consist questions on their socio-demographic status, for example age, gender, race, educational level and occupational. Section B consist 3 subsection; Knowledge, Attitude and Practice questions that related to TB. Questionnaire was modified from various KAP research according to suitability of this research. Besides that, these questionnaires were distributed to the respondents and required them to fill the information as mentioned above.

2.4 Data collection procedure and quality control

Before the questionnaire being distributed, the respondent was having a short briefing on the purpose of the research. The respondent was interviewed and advised that their individual responses would remain anonymous, protected by the research investigator. A self-administered questionnaire was given to every selected household. The respondent was given 15 minutes to answer the questionnaires given. Prior to the actual data collection from the research, a pilot study was conducted on 10% or 40 respondents of the community in Kajang to evaluate the reliability of the questionnaire. The Cronbach alpha value of 0.709 was obtained for reliability test. This is an acceptable value for the reliability of questionnaire according to Bryman and Cramer (2005).

2.5 Data analysis

The data from questionnaires were coded using the Dbase 4+ programme and was analysed using the Social Sciences Statistical Programme SPSS version 22. The assumption of normality for significance level was ($p > 0.05$). Since not all data were normally distributed, both parametric and non-parametric test was used.

3. Results

3.1 Socio-demographic characteristics

Out of the 384 respondents, almost half of the respondents aged 30 to 39 years (N=178, 46.4%) and 122 (31.8%) of them aged 18-29 years old. Majority of them are female (N = 215, 56%) and Malay (N = 266, 69.6%). Almost half of the respondents had had upper secondary level of education (N = 170, 44.3%).

3.2 Level of knowledge, attitude and practice

The mean ± SD of knowledge, attitude and practice score in this study was 16.41±1.97, 3.31±0.31 and 3.32±0.58 respectively. Based on the mean range, the knowledge, attitude and practice score in this study were classified as moderate level with the range of $\geq 15 \leq 18$ for knowledge, $\geq 3.09 \leq 3.51$ for attitude and $\geq 3.06 \leq 4.03$ for practice.

3.3 Knowledge, attitude and practice by socio-demographic factor

Table 1 shows the mean of knowledge score by socio demographic factor. The knowledge score was not significantly difference by gender, age, races and education level. However, the mean knowledge score was significantly higher for student compared to other group of respondents (i.e. unemployed, government worker and private worker) at $p = 0.01$.

Thea mean of attitude score was not significantly difference by gender, races and education level. However, respondent age between 30-39 has significantly higher level of attitude (3.36±0.31) compared to respondent age between 18-29 (3.30±0.33) and 40-49 (3.21±0.31) ($p < 0.001$). The attitude score for private worker also was significantly higher compared to student (Table 2).

3.4 Difference between practice level and socio-demographic

Table 3 shows no significant different in practice level between genders. The mean practice score was significantly difference for age, education level, and occupation. The mean practice score for age range 30-39 was higher compared to age range 18-29. The mean practice score for upper secondary level was higher compared to degree level. The mean for practice score for unemployed and private worker was higher compared to student.

3.5 The relationship between knowledge level, attitude level and practice level.

The regression analysis result indicate that knowledge level was not related to the attitude and practice of the respondent in this study (Table 4).

Table 1: The knowledge score by socio-demographic factors (N = 140)

Variable	n	Mean ± SD	t/F (p-value)
Gender:	169	16.54± 2.05	1.15*
Male	215	16.31± 1.90	(0.25)
Female			
Occupation:			
Unemployed	118	16.35 ± 2.0	3.70
Student	54	17.22 ± 1.90	(0.01)
Government	122	16.28 ± 1.78	
Private	90	16.20 ± 2.14	
Age:			
18-29	122	16.3 ± 2.18	(0.08)
30-39	178	16.3 ± 1.74	
40-49	84	16.8 ±2.08	
Race:			
Malay	266	16.4 ±2.03	(0.08)
Chinese	50	16.9 ±1.37	
India	66	16.1 ±2.06	
Others	2	18.5 ±0.71	
Education: Lower secondary	3	15.0 ±0	
Upper secondary	170	16.3 ±1.91	(0.20)
Form 6/Diploma	79	16.0 ±2.11	
Degree	132	16.9 ±1.97	

Note: Kruskall wallis analysis and *t-test

Table 2: The attitude score by socio-demographic factors (N = 140)

Variable	n	Mean ± SD / Mean rank	Z (p-value)
Gender:		188.67	-0.60
Male	169	195.51	(0.55)
Female	215		
Occupation:			
Unemployed	118	3.27 ± 0.36	0.01
Student	54	3.24 ± 0.30	
Government	122	3.31 ± 0.33	
Private	90	3.38 ± 0.23	
Age:			
18-29	122	3.30 ± 0.33	6.71*
30-39	178	3.36 ± 0.31	(0.001)
40-49	84	3.21± 0.31	
Race:			
Malay	266	3.31 ± 0.33	0.46
Chinese	50	3.32 ± 0.23	
India	66	3.27 ± 0.33	
Others	2	3.50 ± 0.35	
Education level:			
Lower secondary	3	3.17 ± 0	
Upper secondary	170	3.33 ± 0.32	0.28
STPM/Diploma	79	3.32 ± 0.34	
Degree	132	3.26 ± 0.31	

Table 3: The practice score by socio-demographic factors

Variables	n	Mean ± SD	F/t (p-value)
Gender:			
Male	169		1.67*
Female	215		(0.10)
Age:			
18-29	122	3.22 ± 0.56	3.29
30-39	178	3.29 ± 0.56	(0.04)
40-49	84	3.30 ± 0.64	
Race			
Malay	266	3.25 ± 0.56	3.47
Chinese	50	3.45 ± 0.64	(0.02)
India	66	3.45 ± 0.60	
Other	2	3.77 ± 0.58	
Education level			
Low secondary	3	3.2.64 ± 0	5.99
Upper secondary	170	3.43 ± 0.58	(0.001)
STPM/Diploma	79	3.32 ± 0.59	
Degree	132	3.18 ± 0.58	
Occupation			
Unemployed	118	3.41 ± 0.64	5.04
Student	54	3.09 ± 0.60	(0.002)
Government	122	3.25 ± 0.54	
Private	90	3.41 ± 0.52	

* t value

Table 4: The relationship between knowledge, attitude and practice.

Model	Unstandardized Coefficients		Std. Coefficients	t	Sig
	B	Std. Error	Beta		
Constant	16.94	1.2		14.09	0
Attitude	-0.12	0.32	-0.02	-0.37	0.72
Practice	-0.04	0.17	-0.01	-0.24	0.81

4. Discussion

From the results on socio-demographic data has shown that most of respondents were Malay and majority were aged 30-39 years old. Besides that, most of them have average education background which was almost 45% of them were having formal education until upper secondary level (SPM level). Only 8% of them were having formal education until low secondary which means that there will having no difficulties for health education programmes. In addition, more than half of them are employed either in government or private as Kajang is an urban district in Selangor. This indicate that if any of their family members gets TB disease, they will not have much financial burden to the family (Koay, 2004).

The result of this research has shown that overall knowledge of patients about TB was unsatisfactory which was in medium level but still it is better than the research conducted in Kudat, Sabah (Koay, 2004). As we know, Kudat is one of rural area in Sabah. From this view, it can be concluded that the level of knowledge about TB is higher in urban area compared to rural area. The attitude level of the respondents towards TB was at moderate level. However, this findings was much better compared to the findings in Iraq which almost half of the respondents have unfavourable attitude about tuberculosis (East Mediterr Health 2004). Therefore, the results of this research showed that, our community are still lacking in attitude about TB disease.

In this research, 70.3% of respondents mentioned germs/bacteria as the cause of TB whereas the study done in Sabah (Koay, 2004) showed that 50.8% of respondents had a knowledge of the causative agent of TB. It is very interesting to note that almost all respondents respond correctly on causation of TB. In this research, almost all respondents (96%) had answered question about transmission of disease correctly which was TB transmitted through air. This finding is similar with the findings found in a study done in Ethiopia (Assefa, 2011). However, about 30% respondents had the wrong answer which is TB been transmitted by sharing food and shaking hands with TB patient and also by the present of wounds on the body. By referring to these findings, we can say that most of respondents were aware on the mode of transmission of TB.

The awareness of TB symptoms amongst the respondents were generally high (96.4%) in this research which is similar with the study done in

South Africa reported by 89% of the respondents (Westaway, et.al, 1990). This finding also supported by the findings from Hong Kong (Leung, 2007) which stated that among newly diagnosed TB patients who seek for treatment because of cough. However, according to the findings, there were also a few of the respondents had wrongly answered the questions about the symptoms. There were 12% answered yellow fever and 9.1% answered there is no symptoms. These study revealed that the effort still a need to create awareness and continuous educate the community regarding the symptoms in detailed.

It would be important to know how to early diagnosed TB. This is because, a large proportions of those who are suffering with TB disease failed to seek treatment from health facilities earlier. Although there were majority of the respondents believed that TB can be treated, only about half of the respondents knew that TB can be detected through blood test. According to the study conducted in Southwest Ethiopia (Abebe et al., 2010) from all the patients, about 80% of patients heard about the disease before diagnosed. From this finding, suggests that the role of propagating health information widely is important.

Concerning gender, female respondents was slightly more than male which is 56%. In the finding of this research, there was no significant different between knowledge, attitude and practice level among male and female. According to previous research conducted in Kelantan (Nik Nor, 2011) also reported that gender was not a significant predictor for the treatment outcome. From the findings in this research, there was a significant different between knowledge and attitude level between occupational status.

In this research, it has been indicated that there were no significant different between knowledge level and aged. It is supported by previous study by Iyawoo (2004) that indicate that in terms of age-distribution of cases, it can be seen that the majority of cases are in the 15-54 years age group. There were no significant different between knowledge and attitude with education level. This study agrees to a similar finding by Koay (2004).

Information bias might occur due to the determinant of association between variables are based on questionnaires and depends on the respondents answers. The respondents may not remember some important information related to this research.

5. Conclusion

From the findings, it showed that most of the respondents have adequate knowledge regarding the causation, transmission, symptoms, effect, diagnosis and prevention. Besides that, there were also a significant number of respondents showed a moderate attitude and also practice towards TB and patients. On the other hand, the different found between KAP and the several of socio-demographic data as mention in the discussion above. In general, the overall result of this research indicates that there were a moderate level of knowledge, attitude and practice among the community in Kajang. Therefore, specific intervention strategies should be carried out to improve the KAP level among the community about TB and also to increase the strength and positive attitude and practice. A few recommendations are suggested based on the findings in this research which are health educations, health activities such as design suitable and interesting campaign through mass media and community participation.

RESEARCH ETHICS

This research was approved by the Ethic Committee for Research involving Human Subjects of Universiti Putra Malaysia (JKEUPM) on 14th November 2014. A written consent form of participant for this research was given to the respondents. All information and identity used in this research were remaining confidential.

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