



Research Article

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Knowledge and Attitude Concerning Tuberculosis among the Employees of a Prison of Malaysia: A Cross-Sectional Study

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ABSTRACT

Background : Prisons have been always overcrowded, and overcrowding would lead to close contacts, and subsequently, increase the possibility of airborne diseases including tuberculosis. The aim of this study was to identify the relationship between the knowledge and attitude towards tuberculosis, and socio-demographic status among the employees in a Malaysian prison. Methods : This research was a cross-sectional study with the convenient sampling method. The data was collected using a questionnaire. In this research, the respondents were correctional officers as well as administrative officers like civilians. The analysis was done in SPSS version 24.0 using appropriate statistical test, and $p < 0.05$ was considered significant. Results : This study showed that the majority of the respondents had good knowledge. There was no significant association between age groups and the level of knowledge about TB. There was also no significant association between the education level, and the level of knowledge about TB. Besides, there was also no significant relationship between the department and the respondents' rank, and their level of knowledge on TB. However, there was a significant relationship between the period of services with the level of knowledge about TB. There was an only significant relationship between the education and the level of attitude. Considering the risk factors, most of the respondents had a history of contact with an active TB patient inside the prison. The majority of the respondents didn't know about DOTS. Lastly, there was an association between the level of knowledge and the attitude towards tuberculosis among the employees in the Malaysian Prison. Conclusion : The management of prisons needs to take practical action by providing training to develop a reliable preventive management.

Key words: Knowledge, Attitude Tuberculosis, Employees, Prison, Malaysia.

INTRODUCTION

Prisons include centers for pre-trial and convicted prisoners as well as centers for juvenile offenders and illegal immigrants [1]. Prison Department of Malaysia is an organization that is responsible for detainment, management, and rehabilitation. It follows their aspiration of Well Prison Concept (Penjara Sejahtera) that launched in 2013 which emphasises on the role of security, management, and rehabilitation [2]. Globally, prisons represent a primary institutional amplifier for tuberculosis (TB), particularly in low and middle-income countries [3]. In addition, the compacted environment and high numbers of TB-related risk factors among prisoners alongside the inequity in health service provision in these settings promote TB transmission and progression, particularly drug-resistant forms, within and beyond their walls [4, 5]. Prisoners have a

disproportionately higher prevalence of socioeconomically disadvantaged individuals, including individuals who are homeless, HIV-infected, have substance use disorders and poor access to health services compared to the non-incarcerated community [6, 7]. Environmental factors like poor ventilation, overcrowding, malnutrition and psychiatric distress are prevalent in prisons, and contribute and compound TB transmission among inmates in these settings [8, 9]. Globally, TB among prisoners recorded higher incidence than the general population [10]. Apart from that, prisons play a role as a reservoir for TB transmission to the general community via released inmates and prison staff, especially where the facilities are insufficient [11, 12].

The high incarceration rates have contributed to the dramatic increase in the TB incidence and prevalence of multi-drug resistant TB (MDR-TB) in the communities of European and Central Asian countries [13]. A study has shown an estimation that TB exposure within prisons was attributable to 8.5% and 6.3% of all TB cases in community settings in high and low- middle-income countries ; respectively [4]. In addition, TB contributes significantly to prison-related mortality in low and middle-income nations [14]. Malaysia as a middle-income nation in Asia Pacific region whose populations exceeds 29 million, has an average annual TB incidence of 82 cases per 100,000 population, and a TB-attributed mortality rate of 8.5 per 100,000 population [15, 16].

In Malaysia, prisons continue to fuel TB in settings where access to TB screening and prevention services is limited [17]. Malaysia is a middle-income country with a relatively high incarceration rate of 138 per 100,000 population [17]. Regardless of national TB incidence rate remaining unchanged over the past 10 years, the data about TB in prisons and its contribution to the overall national rates does not exist [17]. 64.7% of the prisoners did not complete their 9 months TB regimen after being released [18]. There has been still lacking awareness among the staff and inmates of the prisons in Malaysia regarding TB [17]. Tapah Prison was selected as a research place, and the permission was obtained to conduct the study there. Tapah Prison represented the community of the prisons in Malaysia. Besides, Tapah Prison has been considered as a new prison which has been in operation for 12 years.

By way of an example, a study was conducted on knowledge and attitude of working women concerning a disease, and it was found that the majority of them had unsatisfactory knowledge, and neutral attitudes toward it [19]. But, to the best of the researchers' knowledge, there have not been many studies regarding the knowledge and attitude about TB among prison staff. To put it simply, examining the indoors with insufficient ventilation is emphasized [20]. So, the survey findings were fresh and comprehensive for future research studies. The objectives of this research were to assess the knowledge and attitude of TB among the employees in Tapah Prison.

MATERIALS AND METHODS

This cross sectional study was conducted in Tapah Prison, Tapah Road, Perak Darul Ridzuan, Malaysia. Tapah Prison had a total area of 81.75 hectares and capacity of 2062 inmates. This prison has also been equipped with a high-security system and accommodation as well as recreational facilities for both inmates and staff [21]. The study period was from November 2017 to April 2018. The study population was all full-time Tapah prison employees such as correctional officers which included all the ranks from the Prison Warders up to Senior Assistant Commissioner of Prisons (KA 52), healthcare personnel and administrative staff. However, the prison inmates were not included in this study. The total employees of Tapah Prison were around 500 people. The sample size was calculated using Epi Info 7.2 (StatCalc Utility), with the expected frequency of 50% of the respondents aware of the TB control program in prison and the confidence limits of 10%. The required sample size was 81 respondents with a 95% confidence level. Convenience sampling was used due to the restriction in time, place, and logistics. Inclusion Criteria: i. The respondents must have been above 18 years old. ii. The respondent could read, write and speak either Malay or English. iii. The respondent was willing to participate. Exclusion Criteria: i. The illiterate respondents were excluded. ii. Those who were not willing to participate. A Structured questionnaire was developed after reviewing the literature research, and followed the ACSM for TB Control: A Guide to Developing KAP surveys guidelines published by WHO (31). The questionnaires were distributed using convenience sampling to all the prison employees who met the inclusion and exclusion criteria. The questionnaires were administered during their working hours in various places such as the clinic, the cafeteria, the administrative offices, and the main entrance. The participants were given a brief explanation of the study, and required to fill up the consent form before answering the questionnaires. Some of the questions of the questionnaire were adapted from the previous study conducted in Malaysia prison (21).The questionnaire

contained 38 questions consisting of three sections: Section A: *Demographic information*. This included the respondents' age, gender, ethnicity, education level, residence, rank, current department, position, and risk factors of TB. Section B: *Knowledge about TB*. In this section, the respondents were asked about the facts on TB such as the cause of disease, the mode of transmission, the symptoms, TB prevention measures, TB treatment, and the consequences of TB treatment. Section C: *Attitude on TB*. The respondents were asked about their attitude regarding TB which were answered on the Likert-scale. The original questionnaire was developed in English to maintain the consistency with questions adapted from the previously published articles. A Malay-translated questionnaire version was developed to help in conducting the study. Method of Data Analysis : Eventually, the completed questionnaires were collected, the Microsoft Excel program was used for the data entry. IBM SPSS version 22 was used for data cleaning and analysis. Chi-square tests were applied to find the association between the variables. Ethical Approval: This study was approved by the Medical Research Ethics Committee (MREC) of University Kuala Lumpur Royal College of Medicine Perak (UniKL RCMP) (Memo No.: UniKLRCMP/MREC/2017/SRP-040).

RESULTS

Socio-Demographic Variables among Respondents

The sociodemographic profile of the current study respondents has been depicted in Table 1. The respondents' age distribution was 26-35 [46% (n=46)], 36-45 [29% (n=29)], 18-25 [16% (n=16)], 46-55 [8% (n=8)], and ≥ 56 [1% (n=1)] years old. The distribution of sexes among the respondents was 61% (n=61) and 39% (n=39) for males and females; respectively. The distribution of the respondents' ethnicity was Malay [90% (n=90)], others [5% (n=5)], Indian [3% (n=3)] and Chinese [2% (n=2)]. Considering the respondents' educational level, [60% (n=60)] had secondary education, and [40% (n=40)] had university/ college education. [84% (n=84)] of the respondents lived in the staff quarters, [13% (n=13)] lived in private houses, and [3% (n=3)] lived in the others (mainly dormitory). Considering the respondents' rank, [83% (n=83)] were correctional officer, [16% (n=16)] were civilians, and 1% (n=1) were the others. The respondents were from the department of security [79% (n=79)], administration [17% (n=17)] and healthcare [4% (n=4)]. The respondents' period of services was 11-15 [36% (n=36)], 1-5 [27% (n=27)], 6-10 [17% (n=17)], more than 15 [12% (n=12)], and less than 1 [3% (n=3)] years.

Table 1: Distribution of Socio-Demographic Variables among Respondents

		Number / Percentage*
Age	18 – 25 years	16
	26 – 35 years	46
	36 – 45 years	29
	46 - 55 years	8
	≥ 56 years	1
Gender	Male	61
	Female	39
Ethnicity	Malay	90
	Chinese	2
	Indian	3
	Others	5
Education level	Primary	0
	Secondary	60
	University/college	40
	Others	0
Residence	Private house	13
	Staff quarters	84
	Others	3
Rank	Correctional officers	83
	Civilian	16
	Others	1
Department	Administration	17
	Healthcare	4
	Others	79
Period of service	Less than 1 year	3

	1 – 5 years	27
	6 – 10 years	17
	11 – 15 years	36
	More than 15 years	12

Note: As the research population was 100 so both the number and percentage was the same.

Risk of Getting Tuberculosis among the Respondents

Seventy percent (n=70) and 7% (n=7) of the respondents had a history of contact with active TB patient inside and outside the prison; respectively. 37% (n=37) of the respondents had a history of working in another prison. Only 30% (n=30) of them were smokers, and 1% (n=1) consumed alcohol.

Knowledge about Tuberculosis (TB)

All 100% (n=100) of the respondents had heard about TB disease. Nevertheless, most respondents [66% (n=66)] did not know the cause of TB, while 97% (n=97) of them answered it correctly regarding the transmission of TB bacilli. Again, 91% (n=91) of the respondents did not manage to recognize the symptoms of TB. Yet, again, 93% (n=93) of the respondents knew the protective measures for TB. 100% (n=100), 62% (n=62), 91% (n=91) of the respondents knew where to get TB treatment, treatment provided by the government free of charge, and TB has been a curable disease respectively. Nevertheless, 56% (n=44) and 79% (n=79) of the respondents did not exactly know fatality of TB and incomplete TB treatment consequences.

Most [64% (n=64)] of the respondents believed TB is caused by the virus. Only 34% (n=34) of the respondents answered the bacterial infection, 1% (n=1) answered the fungal infection, and 1% (n=1) did not know about the cause. 97% (n=97) of the respondents managed to answer correctly regarding TB bacilli air-borne transmission, and 93% (n=93) wore a mask for the prevention. The top three symptoms chosen by the respondents were a cough, followed by fever, and cough with blood with the percentage of 100% (n=100), 80% (n=80) and 68% (n=68); respectively. Most [88% (n=88)] of the respondents opined death as the consequences of TB patient if not treated. Finally, many [78% (n=78)] of the respondents opined on the relapse of TB infection because of the incomplete treatment.

The highest source to get information regarding TB among the respondents was via television, doctors, and internet with 54% (n=54), 45% (n=45), and 36% (n=36); respectively. Other sources of information included newspaper [27% (n=27)], friends [25% (n=25)], family [12% (n=12)] and the others [11% (n=11)]. Radio [9% (n=9)] was considered the least used as a source of information. The doctor was the most trusted source of information among the respondents which accounted for 86% (n=86).

Total Knowledge Score

The respondents scored 5, 6, 4, 7, 8, and 3 marks which accounted for 38% (n=38), 19% (n=19) and 14% (n=14), 12% (n=12), 10% (n=10), and 6% (n=6); respectively. Only 1% (n=1) of the respondents managed to score full marks which were 9 marks.

Level of Knowledge among Respondent Regarding TB

The level of knowledge among the respondents regarding TB was determined by generating the median score from the descriptive analysis to classify them into 'Good Knowledge' and 'Poor Knowledge.' The median score obtained was 5. Hence, a respondent who scored 5 marks and above were considered to have good knowledge, whereas those who scored less than 5 marks (1-4 marks) were considered to have poor knowledge. Many of the respondents had good knowledge which accounted for 80% (n=80), and only 20% (n=20) had poor knowledge regarding the topic.

Attitude towards Tuberculosis

All [100% (n=100)] respondents agreed that TB is a serious disease. 54% (n=54) of the respondents agreed that they had a risk of getting TB, 94% (n=94) would go for TB treatment if they were contracted, 85% (n=85) were worried about getting TB from the other people, 44% (n=44) disagreed that TB was a shameful disease, 45% (n=45) agreed that TB is as serious as HIV, 88% (n=88) stated that TB screening is as important as HIV, 99% (n=99) would go to the hospital for proper care if they had TB symptoms, and 94% (n=94) stated that a doctor is the best person for the consultation of TB.

Total Attitude Score

The respondents scored 8, 7, 6, 9, 5, and 4 marks which accounted for 33% (n=33), 31% (n=31), 17% (n=17), 10% (n=10), 6% (n=6), and 3% (n=3); respectively. There was no respondent who scored 3 marks and below.

Level of Attitude among Respondent towards TB

The level of attitude among the respondents towards TB was determined by generating the median score from the descriptive analysis to classify them into 'Good Attitude' and 'Poor Attitude.' The median scored obtained was 7. Hence, a respondent who scored 7 marks and above were considered to have a good attitude, whereas those who scored less than 7 marks (1-6 marks) were considered to have a poor attitude. Many [74% (n=74)] of the respondents possessed a good attitude, and only 26% (n=26) had a poor attitude towards TB.

Reason for Not Going to Hospital for TB treatment

Forty-nine percent (n=49) of the respondents believed that the prolonged treatment schedule for TB was the reason for not going for treatment. 21% (n=21) of the respondents chose others as the reason including 20 respondents who said that there was no reason for not going for treatment and 1 respondent who stated laziness as the reason for not going for treatment. Shyness and don't know who to approach were expressed as the reason for not going for TB treatment which shared the same proportion among the respondents which was 10% (n=10) each. 8% (n=8) of the respondents declared the cost restriction as the reason for not going for TB treatment. Fear of medicine was shown by the least number of the respondents as the reason for not going for TB treatment which accounted for 2% (n=2).

Received Training Course on TB Prevention and Control in Prison

Out of 100 respondents, only 25% (n=25) had received training course on TB prevention and control in prison. 66% (n=66) of the respondents which accounted for the largest proportion, did not receive a training course on TB prevention and control in prison, while 9% (n=9) of the respondents was unsure.

Know how to prevent spreading of TB among prison inmates

Most of the respondents which accounted for 63% (n=63) knew how to prevent spreading of TB among prison inmates, while 22% (n=22) did not know how, and 15% (n=15) of the respondents were unsure.

Know about DOTS (Directly observed treatment, short-course)

Only 22% (n=22) of the respondents knew about DOTS, while 78% (n=78) of them did not know about it.

CROSS-TABULATIONS

Association between Socio-Demographic Variables with Level of Knowledge

Most of the respondents (80%) possessed good knowledge level regarding TB irrespective of their age group, educational level, and the respondents' working department. There was no statistical significant difference observed between the age group and TB related knowledge ($p=0.325$); the educational level and TB related knowledge ($p=0.307$); the respondents' working department and TB related knowledge ($p=0.567$). The correctional officers (67%) had the highest proportion of good knowledge regarding TB (67%) followed by civilian 12% (n=12) and the others 1% (n=1). There was no statistical significance ($p=0.768$) difference observed between the ranks and level of knowledge. Nevertheless, most of the respondents (80%) possessed good level knowledge regarding TB irrespective of their period of services, and there was a statistically significant ($p=0.001$) association which was observed among the period of service and TB related knowledge (table 2).

Table 2: Association between the period of services and the level of knowledge.

Demographic Variable		Level of Knowledge		Total Frequency (n=100)	Significant value (p <0.05)
		Good knowledge (n=80)	Poor knowledge (n=20)		
Period of Services (years)	Less than 1 year	3	5	8	0.001
	1-5	19	8	27	
	6-10	12	5	17	
	11-15	35	1	36	
	More than 15 years	11	1	12	

Association between Socio-Demographic Variables with the Level of Attitude

Most (74%) of the respondents had a good attitude towards TB irrespective of their age group, educational level, rank, working department, and period of services. There was no statistically significant association observed between the age group and the level of attitude ($p=0.310$); the respondents' rank and the level of attitude ($p=0.448$); the respondents' working department and the level of attitude ($p=0.631$); the period of services and the level of attitude (0.304); but there was statistically significant ($p=0.0041$) association observed between the educational level and the level of attitude (Table 3).

Table 3: Association between the education level and the level of attitude.

Demographic Variable		Level of Attitude		Total Frequency (n=100)	Significant value (p <0.05)
		Good Attitude (N=74)	Poor Attitude (N=26)		
Education Level	Primary School	0	0	0	0.041
	Secondary School	40	20	60	
	University/College	34	6	40	
	Others	0	0	0	

Association between Level of Knowledge and Level of Attitude

Table 4: Association between the level of knowledge and the level of attitude.

		Level of Attitude		Total Frequency (n=100)	Significant value (p <0.05)
		Good Attitude (N=74)	Poor Attitude (N=26)		
Level of Knowledge	Good Knowledge	65	15	80	0.001
	Poor Knowledge	9	11	20	
	Total	74	26	100	

Most of the respondent which accounted for 65% (n=65) had good knowledge and a good attitude. 15% (n=15) of the respondents had good knowledge but poor attitude. There was 9% (n=9) of the respondents who had poor knowledge but a good attitude. Lastly, out of 100 respondents, 11% (n=11) of them had poor knowledge and poor attitude. There was statistically significant (p=0.001) association observed between the level of knowledge and the level of attitude (Table 4).

DISCUSSION

Most of the respondents had a history of contact with active TB patients inside the prison. The previous study also similarly reported that the inmates and prison workers were acquainted with TB [22]. One Iraqi study conducted among the Health-Care Workers and TB Patients revealed that the respondents believed that the continuous exposure to a TB infected patient was the main risk factor for getting TB infection [23]. One earlier Malaysian study revealed that prisons had a congregated environment, along with poor ventilation and overcrowding of inmates which consequently potentiated the TB transmission among the inmates [24]. Consequently, those respondents who had contact with TB patients inside the prison were more likely to get infected with TB. Another important finding was that more than one-quarter of the respondents had a habit of smoking. The other Malaysian study found that smoking appeared as one of the significant risk factors for TB infection [25]. Smoking caused an impaired clearance of mucosal secretion, and decreased phagocytic activities of the alveolar macrophages, thus increased the risk of contracting TB [25]. Additionally, a small group of the respondents had a prior history of contact with active TB patients outside the workplace and habit of taking alcohol. Thereafter, the study respondents had potentially increased the risk of developing TB.

Knowledge of Tapah Employees on TB

Most of the total respondents had a good level of knowledge regarding TB. Malaysia had been classified as a country with an intermediate TB burden with the annual incidence rate for TB of 103 cases per 100 000 population [26]. Besides, Malaysia was among the country with high imprisonment rate of about 171 per 100 000 population [26]. The inmates in Malaysia Prisons have been mainly illegal migrant workers from Indonesia, Philippines, India, Bangladesh, and Myanmar [27, 28]. These countries were among the high TB burden countries that reported the highest TB cases across the globe [29]. Consequently, although the knowledge level was good, the possibility of developing knowledge among the respondents remained high. Despite the high level of knowledge about TB among the respondents, four out of nine questions regarding the knowledge on TB was answered poorly. Around one-third of the respondents managed to identify the cause of TB as a microbial disease. As most of the respondents were not related to the health field, so it was expected relevant to have such level of knowledge. All healthcare respondents managed to answer the cause of TB correctly. One previous comparable study showed that most of the respondents were oblivious that TB was caused by *Mycobacterium tuberculosis* [30]. Nevertheless, it has been essential to educate all concerning parties that TB management needed the medication for prolonged time [31]. The most worrying finding was that only around one-tenth of

the study respondents correctly answered TB symptoms. However, the top three symptoms (a cough, fever, and hemoptysis) of TB answered correctly were consistent with the previous study findings [23]. The awareness level among the respondents regarding TB symptoms was generally low which was consistent with the previous study [31]. The earlier study suggested that there was a need to educate the prison employees on TB symptoms, as educational intervention would promote the earlier medical treatment and improve healthcare [31].

Moreover, less than half of the respondents managed to identify the consequences of TB without medical treatment. Patients with active TB had symptoms such as a cough, fever, night sweats or weight loss that may be mild for many months. The possibility of transmission of TB increased with delayed or no medical care of others [21, 32]. Not treated Pulmonary TB could damage different vital organs, and cause death due to the chronic respiratory failure [33]. Henceforth, the staffs of the prison should be provided with a promotional healthcare, and educational program regarding the fatality of TB.

Only just over one-fifth of the respondents managed to identify the consequences of the improper completion of TB treatment schedule. One American study warned against the high possibility for the treatment failure, relapse, further acquired resistance, or death because of being often infected with MDR resistant strains of *Mycobacterium Tuberculosis* [34], and MDR strains of TB due to the inadequate and incomplete treatment of TB [35]. Hence, the employees of the prison should be taught urgently about the treatment of TB, especially as a course completion, to develop the proper awareness regarding the disease. Regarding the source of information about TB, the most trusted source of information was the doctors followed by the internet and television. This finding corresponded with the previous study [23]. The inference could be made that strengthening the health educational activities especially via mass media and fostering the collaboration between physicians working in both the public and private sectors. This study was also important to foster the collaboration between prison departments and the public health departments to increase the awareness regarding TB. The statistically significant association study was observed between the period of service with the level of knowledge. This result corresponded to the previous study which reported that there was a significant association between the level of knowledge with the age and duration of work [23]. Longer duration of services indicated more experienced employees and provided the opportunity to do a more comprehensive training course [23].

The attitude of Tapah Employees towards TB

Generally, three-fourths of the respondents had a good level of attitude towards TB. The disgrace was that more than half of the study respondents opined TB is a shameful disease. The previous study also similarly reported that diagnosing TB has been embarrassing in society [31]. The conclusion could be made that science and society have moved forward so much but to a certain level. Still, a good portion remained in the dark with prejudice, and stigmatized an airborne microbial disease [31].

Generally, in this study, all the respondents agreed that TB was a serious disease. This finding was accentuating with the last findings as about nine-tenths of the respondents agreed that TB screening was also important as HIV. Furthermore, TB infection has been potentially high among AIDS-defining illnesses because of the reduced immunity [36]. Besides, another study showed that the high mortality rate of TB was associated with HIV infection [37]. In addition, a previous study finding recorded that TB has remained as a top killer among the prisoners with HIV co-infection [38]. This strongly supported that TB screening was also important as HIV screening. Apart from that, other questions on attitude towards TB which included the risk of getting TB, going for TB treatment, being worried about getting TB from others, and actions to be taken if there were TB symptoms, were answered correctly by most of the respondents. Besides, most of the respondents agreed that the doctor was the most reliable person for the management of TB. This result coincided with the previous study [31]. Almost half of the respondents stated the fear of the long treatment period as the reason for not going to the hospital for TB treatment. This indicated that most of the respondents knew in general about the long-term treatment of TB. The optimal duration of the treatment for a patient with sputum positive PTB and all extrapulmonary TB was at least six months except for bone (including spine) and joint TB which was 6 to 9 months, and for TB meningitis which was for 9 -12 months [39]. Only one-quarter of the respondents had received training on TB prevention and control. This finding coincided with the previous study on KAP of the infection control practice among the healthcare workers [40]. Nonetheless, more than half of the respondents correctly stated the prevention strategy against spreading TB, without attending any training program. Moreover, there were no national infection control strategies in Malaysian prisons [21]. Hence, the good general

knowledge of TB among the respondents was perceived enough to be applied on the prevention of TB among the inmates.

Lastly, only one-fifth of the respondents knew about DOTS (Directly observed treatment, short-course). DOTS has been a strategy implemented by WHO in 1995 which combined drug treatment with the political commitment, sputum smear microscopy for the diagnosis, and directly observed therapy (DOT) to ensure the adherence and good management practice [41]. DOT practiced in Malaysia was reported to be 97% (ranging from 93% to 100%) [41]. In this study, regarding the association between only education level and the level of attitude, there was found a significant association. This indicated that education level plays a vital role in determining one's attitude towards TB. A good level of attitude would also influence the health-seeking behavior. Thus, people would have greater information and knowledge towards the current issues particularly on the diseases they would encounter.

Association between the Level of Knowledge and the Level of Attitude

This study revealed that there was a strong significant association between the level of knowledge and the level of attitude. Most of the respondents (65%) had a good level of knowledge and a good level of attitude. Considering the findings of this study, it could be noted that the prison employees who had good knowledge of TB would attribute a positive attitude towards the disease. It could be highly suggested to design a health education program on TB that would hopefully promote a holistic approach. A collaboration between the prison department and public health department would be needed to establish in order to promote efficient TB education and control program. And it is important to organize educational program to properly address the items that have been under scored [42].

CONCLUSION

Generally, the respondents had good knowledge and attitude score. The period of service acted as an important role in influencing the knowledge score, while the education level showed significant association with the level of attitude. The knowledge and attitude scores were also statistically significant to each other. This study strengthened the importance of educational intervention in determining positive attitudes towards TB.

Limitations

Although this research was carefully planned, it was a cross-sectional study with its inherent limitations. Researchers were only allowed to enter certain blocks of the prison. Besides, since this project involved the collaboration with a government agency, the funding constraint was a big issue.

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Conflict of Interest

Authors possessed no conflict of interest.

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