A Study to Assess the Incidence, Knowledge Regarding Tuberculosis and Its Prevention among the People Living In Vibhuthipura, Bangalore with a View to Provide Information Guide Sheet

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Abstract: Background: Communicable diseases are the major public health problems in India. These are the deadly diseases, which affect the common population today. Tuberculosis is also one of the major communicable disease and chronic condition, it requires continuous medical care. The environment and socio-economic risk associated with this condition are severe in developing countries like India. Objectives: (1) To assess the Incidence of Tuberculosis among the people living in Vibhuthipura, Bangalore. (2). To assess the knowledge regarding tuberculosis and its prevention among the people living in Vibhuthipura, Bangalore. (3). To find out the association between knowledge scores with selected demographic variables. (4). To Develop Information guide sheet. Methodology: A descriptive approach was used to conduct study with descriptive survey research design which is non-experimental in nature. The target population for the study were people living in Vibhuthipura who were present in the houses at the time of data collection, who are able to speak English and Kannada and above the age of 15 years. The total samples under the study were 100. The population was selected by probability; Random sampling technique. Sputum samples were collected from suspected cases, who exhibited any one of the following symptoms like cough for more than 2 weeks, unintentional weight loss and chest pain. Overall, nine sputum samples were collected from suspected cases and was tested at Vibhuthipura PHC. The data was collected through structured interview schedule designed with 32 structured questionnaires to assess the knowledge regarding tuberculosis and its prevention. The results were described by using descriptive and inferential statistics. Results: In the present study, total nine suspected samples were tested for tuberculosis who exhibited the symptoms of tuberculosis, all the tested samples were found to be negative for tuberculosis. Majority 37% of participants were in the age group of 30-44 years, 73% of participants were females, 21% of participants had no formal education, only 12% of participants had completed their graduation. 42% of participants were housewives, 65% of participants had the monthly income of more than Rs. 15,000/- per month. 76% of participants were living in nuclear family. Only 12% of participants had a family history of tuberculosis. 50% of participants gained knowledge about Tuberculosis from Mass Media and 19% of participants from neighbors. Overall result of the study revealed that 69(69%) of participants were having inadequate knowledge, 31(31%) of participants were having average knowledge regarding tuberculosis and its prevention. There were no participants with adequate knowledge of tuberculosis. Conclusion: Majority of samples were having inadequate knowledge and none of the respondents had adequate knowledge regarding tuberculosis and its prevention. However, TB remains a major public health problem and there is a need to maintain and further strengthen TB control measures on a sustained and long-term basis. If the people are provided with some sort of educational interventions such as information guide sheet, teaching programmes on tuberculosis and its prevention that will definitely update their knowledge, which in turn contribute to improve the total quality of one’s health.

Keywords: Tuberculosis, Incidence, Knowledge, Prevention, Information guide.
Introduction
Tuberculosis is one of the major communicable disease in developing countries like India. Worldwide, around 10 million people fall ill with tuberculosis (TB) each year. TB is one of the top 10 causes of death, and the leading cause from a single infectious agent (Mycobacterium tuberculosis), ranking above HIV/AIDS. The disease can affect anyone anywhere, but most people who develop TB (about 90%) are adults, the male: female ratio is 2:1, and case rates at national level vary from less than 50 to more than 5000 per 1 million population per year. Almost 90% of cases each year are in 30 high TB burden countries [1].

Globally, an estimated 1.7 billion people are infected with M. tuberculosis and are thus at risk of developing the disease. With a timely diagnosis and treatment with antibiotics, most people who develop TB can be cured and onward transmission curtailed. The number of cases occurring each year (and thus the number of TB-related deaths) can also be driven down by reducing the prevalence of health-related risk factors for TB (e.g. smoking, diabetes and HIV infection), providing preventive treatment to people with a latent TB infection, and action on broader determinants of TB infection and disease (e.g. poverty, housing quality and undernutrition) [2].

Incidence of TB in India is 168/lakh population and prevalence is 288/lakh population. Mortality due to TB is 3.3 million every year, around 900 deaths every day, 2 deaths in every 3min. MDR-TB is 2-3% among new TB cases and 12-15% among retreatment cases. Prevalence of HIV among new TB cases is 5-19%, it varies from state to state. HIV prevalence in TB is more in Karnataka (Bijapur, Bagalkote), Andhra Pradesh, and Tamil Nadu. Mortality is high in developing countries nearly all (between 95% and 99%) live in developing countries where these resources are inadequate [3].

Tuberculosis is one of the primary causes of mortality in India, its spread can, however, be checked by early detection and regular follow-up of patients. India is one of the 22 high-burden countries. One-fifth of the world’s TB cases are in India [1].

Need for the tuberculosis eradication is been addressed our by Prime Minister Narendra Modi at “End TB Summit” organized on 13th March 2018, at Vigyan Bhawan, New Delhi. Tuberculosis-TB was declared emergency by the World Health Organization nearly 25 years ago. Since then, various efforts have been made to prevent TB in different countries. Of course, we all have gone a long way, have done extensive work for prevention of TB, but there is also a ground reality that we still have not been successful in preventing TB [5]. Given the way TB affects people's lives, impacts on country's economy and country's future, it is now very necessary to get rid of TB within the stipulated time. In India, TB has the highest impact of any communicable disease. To eliminate TB across the world, it has been decided the year by which it should happen is 2030. But today I am announcing from this forum that India has decided a target of ending TB five years ahead of 2030, i.e. by 2025 [4].

By going through above literature and need for the study, the researcher felt the necessity to conduct a study to determine the incidence of tuberculosis, knowledge regarding tuberculosis and its prevention among the people living in Vibhuthipura, Bangalore and associate them with selected demographic variables [6].

Objectives
The objectives of the study are:
- To assess the Incidence of Tuberculosis among the people living in Vibhuthipura, Bangalore.
- To assess the knowledge regarding tuberculosis & its prevention among the people living in Vibhuthipura, Bangalore.
- To find out the association between knowledge scores with selected demographic variables.
- To Develop Information guide sheet.
Methodology

Research approach
Descriptive research approach.

Research design
Descriptive Survey Design

Variables under Study
Incidence, Knowledge regarding tuberculosis and its prevention.

Setting of the study
The study was conducted at Vibhuthipura, Bangalore.

Population
The population in the present study comprises of people residing in Vibhuthipura, Bangalore.

Sample
In the present study the sample is the people residing at Vibhuthipura, Bangalore.

Sample Size
100

Sampling Technique
Probability: Random sampling.

Inclusion criteria
Adults
✓ Residing at Vibhuthipura, Bangalore.
✓ Who able to understand Kannada and English.

Exclusion criteria
Adults
✓ Who are not willing to participate in study.
✓ Who are not available at the time of data collection

Tools and Techniques
The following tools are intended to use for data collection;
Part –I: Information on demographic variables of respondents.
Part-II: Structured Interview Schedule to assess the incidence and knowledge

Ethical consideration
Research proposal was approved by Ethical committee. Prior permission was taken by the Medical officer of Vibhuthipura PHC. Informed written consent was taken from each selected sample.

Results
In the present study out of 100 samples only nine samples were tested for tuberculosis, who exhibited the symptoms of tuberculosis like cough for more than 2 weeks, unintentional weight loss and chest pain. The samples were collected and were tested at Vibhuthipura PHC. The test result was found to be negative for tuberculosis for all nine samples.

Table 1. Frequency and percentage distribution of participants according to their Socio demographic variables (N=100)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Demographic variables</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age (in yrs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15-29</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>30-44</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>45-59</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>60years and above</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td>2</td>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>3</td>
<td>Educational Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No formal education</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Primary school</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Middle school</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>High school</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Intermediate/PUC</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>
The data presented in table 1 reveals the age of participants in years, it shows that, majority 37% of participants were in the age group of 30-44 years, 30% of participants were in the age group of 45-59 years, 29% of participants were in the age group of 15-29 years and remaining 04% of participants were in the age group of 60 years and above.

It reveals that majority 73% participants were females and remaining 27% of participants were males.

It shows that, majority 21% of participants had no formal education, 20% of participants had middle school education, 17% had High school education, 14% of participants had PU education and remaining 12% of participants had completed their graduation.

Majority 42% of participants were housewives, 24% of participants were doing the business, 19% of the participants were employees of various organizations, and 15% of participants were coolie workers.

Majority 65% of participants had the monthly income of more than Rs. 15,000/-, 14% of participants had income between Rs. 10,001 to Rs. 15,000/-, 11% of participants had a monthly income of Rs. 5001 to 10,000 and remaining 10% of participants had income of less than Rs. 5000 per month.

Majority 76% of participants were living in nuclear family, 20% of participants were living in joint family 03% of participants were from single parent family and only one family was from extended type of family.

Majority 88% of participants do not have a family history of Tuberculosis and only 12% of participants had a family history of tuberculosis.

Majority 50% of participants gained knowledge about Tuberculosis from Mass media, 19% of participants from neighbors, 15% of participants gained knowledge from family members, 8% of participants gained knowledge from health professionals and remaining 8% gained knowledge about Tuberculosis from other sources.
Table 2. Aspect wise distribution of mean knowledge scores on Tuberculosis and its prevention (N = 100)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Knowledge Aspects</th>
<th>Statement</th>
<th>Range</th>
<th>Mean</th>
<th>Median</th>
<th>Mean (%)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge regarding Incidence, Causes, Risk factors, Mode of Transmission of tuberculosis</td>
<td>7</td>
<td>7</td>
<td>3.56</td>
<td>4</td>
<td>50.8</td>
<td>1.57</td>
</tr>
<tr>
<td>2</td>
<td>Regarding Clinical manifestations and Diagnosis of Tuberculosis</td>
<td>6</td>
<td>6</td>
<td>2.43</td>
<td>2</td>
<td>40.5</td>
<td>1.40</td>
</tr>
<tr>
<td>3</td>
<td>Regarding Preventive aspects of Tuberculosis</td>
<td>6</td>
<td>5</td>
<td>2.22</td>
<td>2</td>
<td>37</td>
<td>1.26</td>
</tr>
<tr>
<td>4</td>
<td>Regarding Treatment of Tuberculosis</td>
<td>13</td>
<td>8</td>
<td>4.6</td>
<td>5</td>
<td>35.3</td>
<td>2.17</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td>32</td>
<td></td>
<td>12.78</td>
<td>12.5</td>
<td>12.5</td>
<td>39</td>
</tr>
</tbody>
</table>

Table 2 reveals the aspect wise mean knowledge scores of participants regarding Tuberculosis and its prevention.

✓ In the first aspect of knowledge regarding incidence, causes, risk factors and mode of transmission of tuberculosis, mean was 3.56, median was 4, standard deviation 1.63 and over all mean percent was found to be 50.8% with the range score of 7.
✓ In the second aspect of knowledge regarding clinical manifestations and diagnosis the mean was 2.43, median was 2, Standard deviation was 1.40 and mean percent was found to be 40.5 with the range score of 6.
✓ In the third aspect of knowledge regarding Prevention of tuberculosis, mean was 2.22, median was 2, standard deviation was 1.26 and mean percent was found to be 37% with the range score of 5.
✓ In the fourth aspect of knowledge regarding treatment of tuberculosis, mean was 4.6, median was 5, standard deviation was 2.17 and mean percent was found to be 35.3% with range of 8.
✓ Overall knowledge score of mean was 12.78, median was 12.5, mode was 10, standard deviation 4.31 and mean percentage was 39% with range score of 19.

Description of findings related to level of knowledge

Table 3. Frequency and Percentage distribution of respondents according to level of Knowledge regarding Tuberculosis and its prevention (N =100)

<table>
<thead>
<tr>
<th>Level of knowledge</th>
<th>Inadequate</th>
<th>Moderate</th>
<th>Adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>f (%)</td>
<td>f (%)</td>
<td>f (%)</td>
<td></td>
</tr>
<tr>
<td>69(69)</td>
<td>31 (31)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

The data presented in the Table 3 shows that, 69(69%) of participants were having inadequate knowledge, 31(31%) of participants were having moderate knowledge and none of the participants had adequate knowledge regarding tuberculosis and its prevention.
Figure 1. Distribution of respondents according to level of knowledge regarding Tuberculosis and its prevention

Table 4. Description of findings related to association between knowledge scores with selected demographic variables (N =100)

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>Chi-square value</th>
<th>df</th>
<th>Table Value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td>2.51</td>
<td>3</td>
<td>7.815</td>
<td>Non-significant</td>
</tr>
<tr>
<td>Gender</td>
<td>7.51</td>
<td>1</td>
<td>3.841</td>
<td>Significant</td>
</tr>
<tr>
<td>Education</td>
<td>0.95</td>
<td>5</td>
<td>11.070</td>
<td>Non-significant</td>
</tr>
<tr>
<td>Occupation</td>
<td>7.29</td>
<td>3</td>
<td>7.815</td>
<td>Significant</td>
</tr>
<tr>
<td>Income</td>
<td>3.61</td>
<td>3</td>
<td>7.815</td>
<td>Non-significant</td>
</tr>
<tr>
<td>Type of family</td>
<td>9.04</td>
<td>3</td>
<td>7.815</td>
<td>Significant</td>
</tr>
<tr>
<td>Family H/O tuberculosis</td>
<td>0.22</td>
<td>1</td>
<td>3.841</td>
<td>Non-significant</td>
</tr>
<tr>
<td>Source of information</td>
<td>3.75</td>
<td>4</td>
<td>9.488</td>
<td>Non-significant</td>
</tr>
</tbody>
</table>

Note: Critical value: 3.841 for 1 degree of freedom: at 0.05 level of confidence.

The above table 4 depicts the Chi-square test value established at 0.05 level of significance for finding out the association of knowledge score on tuberculosis and its prevention with selected demographic characteristics. The table denotes that calculated Chi square values for gender ($\chi^2 = 7.51$), occupation ($\chi^2 = 7.29$), type of family ($\chi^2 = 9.04$) is more than the table value at 0.05 level of confidence. Age ($\chi^2 = 2.51$), educational status ($\chi^2 = 0.958$), income ($\chi^2 = 3.61$) family H/O tuberculosis ($\chi^2 = 0.22$), and source of information ($\chi^2 = 3.75$) is lesser than the table value at 0.05 level of confidence. Hence the analysis revealed that gender, occupation, type of family are statistically significant with selected demographic variables. There is no significant association between age, education, income, family history of tuberculosis, source of information with selected demographic variables.

Conclusion

The conclusion drawn on from the present study includes the following-

✓ Majority of samples were having inadequate knowledge regarding tuberculosis and its prevention.
✓ Out of nine samples tested for tuberculosis who exhibited the symptoms of tuberculosis, all of the sample tests were found to be negative for tuberculosis.
✓ There was significant association found between level of knowledge with selected demographic variables like gender, occupation and type of family.
✓ There was no significant association between age, Education, Income, family history and source of information.
Conflict of Interest
We hereby declare that there is no conflict of interest.

References
5. Govt. of India, TB India 2008, RNTCP status report, I am stopping TB, ministry of health and family welfare, New Delhi.