Knowledge of Adults Regarding Tuberculosis in Selected Rural Community

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Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Abstract

Background: Tuberculosis (TB) has existed for millennia and remains a major global health problem. According to WHO, (2015) TB causes ill-health in millions of people each year and in 2015 TB was one of the top 10 causes of death worldwide, ranking above HIV/AIDS. Globally there were 10.4 million new TB cases and 1.4 million TB deaths in 2015. A timely diagnosis and correct treatment can cure TB patients.

Objectives: Of the study were to assess the knowledge of adults regarding tuberculosis, to develop and administer an information booklet regarding tuberculosis to adults, to associate the knowledge of adults regarding tuberculosis with selected socio-demographic variables.

Materials and Methods: The research approach adopted for this study was quantitative and non-experimental descriptive research design was used to collect data to assess the knowledge of adults regarding Tuberculosis. Analysis of the study consisted of section 1: Analysis of socio demographic variables, section 2: Analysis of knowledge scores of adults, section 3: Association of knowledge of adults regarding tuberculosis with selected socio demographic variable.

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Results: The study revealed that 77% of the adults had poor level of knowledge while 23% of the adults had only average knowledge regarding tuberculosis. 45% of adults were in the age group of 51-60 years and 20% were in 30-40 years age group. Among the participants, 55% were males and 45% were females, 42% adults were living in nuclear family and 28% belonged to extended family, 42% of adults were having primary education whereas only 7% were graduated and above. Conclusion: The knowledge regarding Tuberculosis was found to be poor among adults living in rural communities. Association was found between the religion of the adults and their knowledge scores. There was no significant association found between other demographic variables of the adults with their knowledge scores regarding tuberculosis.

Keywords: Knowledge; adults and Tuberculosis.

1. INTRODUCTION

Tuberculosis (TB) has existed for millennia and remains a major global health problem. Tuberculosis is an infectious disease caused by bacteria called Mycobacterium Tuberculi. It is generally spread from person to person through inhalation of contaminated aerosol droplets from an infected person through coughing, sneezing or talking at a close distance. Generalized symptoms of tuberculosis include a chronic cough, fever and night sweats. There are multiple diagnostic assays that can be used to test for TB disease [1]. According to WHO, (2015) TB causes ill-health in millions of people each year and in 2015 TB was one of the top 10 causes of death worldwide, ranking above HIV/AIDS as one of the leading causes of death from an infectious disease. There were 1.4 million TB deaths in 2015, and an additional 0.4 million deaths resulting from TB disease among HIV-positive people. In terms of cases, the best estimates for 2015 are that there were 10.4 million new TB cases (including 1.2 million among HIV-positive people), of which 5.9 million were among men, 3.5 million among women and 1.0 million among children. Overall, 90% of cases were adults and 10% children, and the male: female ratio was 1.6:1 [2]. India accounts for one-quarter of the global TB burden. The incidence of TB in India in the year 2019 was 26.9 lakh as per the WHO statistics [3]. A timely diagnosis and correct treatment is significant in cure of TB patients. MDR-TB is now encountered in India with increasing frequency, with reports from many parts of the country [4]. Drug resistant tuberculosis which is becoming increasingly prevalent (India has 26,966 MDR-TB patients as per the current statistics) also pose to be a hurdle to the successful implementation of the tuberculosis control measures [5]. The World Health Assembly in 2014 had adopted a new strategy to end the TB epidemic by the year 2035 in such a way that the total cases will reduce to less than 10 per one lakh population [6].

2. MATERIALS AND METHODS

A quantitative research approach and non-experimental, descriptive survey research design was used to accomplish the objectives of the present study. The research variable of interest in the study was knowledge regarding tuberculosis and socio demographic variables included in the study were age of adults, gender, monthly family income, type of family, religion, educational qualification and history of tuberculosis and home visit by healthcare workers. The required ethical clearance were obtained for the conduction of the study from the concerned authorities of the institution as well as from the community and also individual informed consent was obtained from the study subjects. A structured knowledge questionnaire developed by the researchers and validated by subject experts were used for obtaining the data from the study subjects using an interview technique. The study was conducted in the rural community area on adults who were in the age group of 30 to 60 years. The participants were provided with an informational booklet covering all the essential aspects related to tuberculosis after the data collection. Convenience sampling was used in the study to obtain a total of 100 samples.

3. RESULTS

The data were tabulated in Microsoft excel spread sheet and analysis was done using descriptive and inferential statistics using SPSS according to the objectives of the study. The data has been organized and presented in the following sections:

Section 1: Analysis of Socio demographic Variables
Section 2: Analysis of Knowledge Scores of adults.
Section 3: Association of knowledge of adults regarding tuberculosis with selected socio-demographic variables
3.1 Section 1: Analysis of Socio-demographic Variables

Table 1 shows that majority of the study participants (45%) were in the age group of 51-60 years and more than half of the sample were males (55%). Only 3% of the adults had a monthly family income less than Rs.5000. Maximum of the participants belonged to nuclear family (42%) and all the subjects were Hindus (100%). Majority of the participants had only primary education which might have accounted for their poor knowledge scores regarding tuberculosis. It is significant to note that among the 100 adults who participated in this study 4 of them already had been earlier diagnosed with TB, but still did not have improved knowledge related to the disease. In 69% of the cases, the participants reported that they used to have regular visits from health care workers.

3.2 Section 2: Analysis of Knowledge Scores of Adults

Table 2 reveals that, 77% of adults who participated in this study had poor level of knowledge while 23% adults had average knowledge. Further, none of the subjects were found to have good knowledge score. Hence it is concluded that poor knowledge regarding tuberculosis was majorly observed among adults in the rural community settings and requires intensive education sessions in order to improve the awareness of the general population regarding Tuberculosis.

Table 1. Frequency and percentage distribution of adults according to socio-demographic Data

| Sl.No. | Demographic Variables                  | Frequency (f) | Percentage (%) |
|--------|----------------------------------------|---------------|----------------|
| 1.     | Age (in years)                          |               |                |
| a) 30-40|                                       | 20            | 20             |
| b) 41-50|                                       | 35            | 35             |
| c) 51-60|                                       | 45            | 45             |
| 2.     | Gender                                 |               |                |
| a) Male |                                       | 55            | 55             |
| b) Female|                                      | 45            | 45             |
| c) Others|                                      | 00            | 0              |
| 3.     | Monthly Family Income(Rs)              |               |                |
| a) <5000 |                                      | 3             | 3              |
| b) 5001-10,000|                                  | 21            | 21             |
| c) 10,001-15,000|                                 | 25            | 25             |
| d) 15,001-20,000|                                 | 29            | 29             |
| e) >20,000|                                    | 22            | 22             |
| 4.     | Type of Family                          |               |                |
| a) Nuclear|                                     | 42            | 42             |
| b) Joint |                                       | 30            | 30             |
| c) Extended|                                    | 28            | 28             |
| 5.     | Educational Qualification              |               |                |
| a) No formal education|                               | 17            | 17             |
| b) Primary education|                                | 42            | 42             |
| c) Secondary education|                               | 26            | 26             |
| d) Senior Secondary education|                             | 08            | 8              |
| e) Graduation and above |                             | 07            | 7              |
| 6.     | History of TB/Diagnosed with TB        |               |                |
| a) Yes |                                       | 04            | 04             |
| b) No  |                                       | 96            | 96             |
| 7.     | Does any health worker visit your house on regular basis | | |
| a) Yes |                                       | 69            | 69             |
| b) No  |                                       | 31            | 31             |
Table 2. Distribution of adults according to their knowledge score N= 100

| S.NO | Level of Knowledge | Range  | Frequency | Percentage |
|------|-------------------|--------|-----------|------------|
| 1    | Poor              | 0-7    | 77        | 77%        |
| 2    | Average           | 8-15   | 23        | 23%        |
| 3    | Good              | 16-22  | 00        | 0%         |

Maximum Score: 22; Minimum Score: 0

Table 3. Mean, Median and Standard deviation of knowledge score of Adults regarding Tuberculosis N=100

| Descriptive Statistics | Range | Mean | Median | SD  |
|------------------------|-------|------|--------|-----|
| Knowledge score        | 1-15  | 6.06 | 06     | 2.74|

Table 3 shows that the overall knowledge scores of adults regarding Tuberculosis was in range of 1-15, with mean average knowledge score of 6.06, median score of 6, and a standard deviation of 2.74. This result further supports the fact that the adult population living in the rural areas still have lack of proper knowledge about Tuberculosis which may be accounting for the wide prevalence of this disease among the rural communities in the present times.

3.3 Section 3: Association of Knowledge of Adults Regarding Tuberculosis with Selected Socio-demographic Variables

The information depicted in Table 4 reveals that there was significant association of the level of knowledge score of adults with their religion as all the study subjects belonged to Hindu religion. There was no association found with the level of the knowledge score of adults with other demographic variables such as age, gender, monthly family income, type of family, religion, educational qualification, history of TB or home visit by health care workers.

4. DISCUSSION

The present study was conducted to assess the knowledge of adults regarding tuberculosis in selected rural community setting using a descriptive survey approach. The study revealed that 77% adults had only poor knowledge while 23% of adults had average knowledge regarding tuberculosis. As per the study findings, none of the study subjects had good knowledge regarding tuberculosis. The present study finding shows that the overall mean knowledge score was only 6.06. This study further adds to the literature that the general public residing in the rural areas still suffers from severe lack of knowledge related to a major communicable disease such as Tuberculosis. The study findings are consistent with another quasi-experimental study done by the same researcher in a different geographical area of another community two years back, which depicts that in the experimental group 96.6% of adults were having poor knowledge regarding pulmonary tuberculosis and 3.3% of adults were having average knowledge regarding pulmonary tuberculosis. None of the adults was having good knowledge regarding pulmonary tuberculosis whereas in control group 93.3% of adults were having poor knowledge regarding pulmonary tuberculosis and 6.6% of adults were having average knowledge regarding pulmonary tuberculosis. None of the adults were having good knowledge regarding tuberculosis [7].

The study findings can also be comparable with a similar study done in Georgia to assess the knowledge, attitude and practice regarding Tuberculosis among healthcare workers during the 2016 Hajj. The study findings show that important knowledge gaps and some poor attitudes and practices regarding TB were identified among HCWs and this requires coordinated interventions to improve HCWs KAP regarding TB that includes tailored, periodic TB education and training aimed at boosting knowledge and improving their behaviours [8].

The study findings are also comparable to that done by Tolossa Daniel in Ethiopia, to assess communities knowledge, attitude and practices towards TB which showed that the communities in the selected areas had only basic awareness regarding tuberculosis. Hence the researchers recommended that knowledge aspect need to be incorporated into the TB control programmes in order to improve its effectiveness [9].
Table 4. Association of knowledge level of adults with their socio-demographic variables

| Sl.no | Variables                      | Categories          | Level of knowledge score of adults | $\chi^2$ value (df) |
|-------|--------------------------------|---------------------|------------------------------------|---------------------|
| 1.    | Age (Years)                    | 31-40               | 16 3                               | 1.729 (3)           |
|       |                                | 41-50               | 25 10                              |                     |
|       |                                | 51-60               | 35 10                              |                     |
| 2.    | Gender                         | Male                | 41 14                              | 0.416 (1)           |
|       |                                | Female              | 36 9                               |                     |
| 3.    | Monthly income (Rs.)           | <5000               | 3 0                                |                     |
|       |                                | 5001-10,000         | 17 4                               | 2.760 (4)           |
|       |                                | 10,001-15,000       | 19 6                               |                     |
|       |                                | 15,001-20,000       | 23 6                               |                     |
|       |                                | >20,000             | 15 7                               |                     |
| 4.    | Type of family                 | Nuclear             | 34 8                               | 1.240               |
|       |                                | Joint               | 21 9                               |                     |
|       |                                | Extended            | 22 6                               |                     |
| 5.    | Religion                       | Hindu               | 74 17                              | 8.752 * (1)         |
|       |                                | Muslim              | 3 6                                |                     |
| 6.    | Educational qualification       | No formal education | 11 6                               |                     |
|       |                                | Primary education   | 36 6                               | 3.668 (4)           |
|       |                                | Secondary education | 19 7                               |                     |
|       |                                | Senior sec. education| 6 2                               |                     |
|       |                                | Graduation & above  | 5 2                                |                     |
| 7.    | Diagnosed with TB/History of TB|                     | 3 1                                | 0.009 (1)           |
|       |                                |                     | 74 22                              |                     |
| 8.    | Home visit by health worker    |                     | 54 16                              | 0.003 (1)           |
|       |                                |                     | 23 7                               |                     |

Table value $\chi^2$ (1) = 3.84, $\chi^2$ (2) = 5.99, $\chi^2$ (3) = 7.82, $\chi^2$ (4) = 9.49, $p<0.05$, * shows significant

In a cross sectional study from Uttarakhand assessing the knowledge of Tuberculosis patients regarding the disease, revealed that almost one third of the patients had poor knowledge and hence it was strongly suggested that a culturally sensitive health education system need to be in place to improve the awareness regarding tuberculosis [10].

The Knowledge on tuberculosis and utilization of DOTS service by tuberculosis patients in Lalitpur District, Nepal further supports the fact that approximately one quarter of the patients did not have adequate knowledge of tuberculosis and were not utilizing the DOTS service efficiently [11].

A nine city longitudinal study from India assessing the knowledge about tuberculosis and infection prevention behaviour had concluded that social proximity between health worker and patients predicted greater knowledge and adherence to infection prevention behaviors but unfortunately, data suggests that the latter rate remains undesirably low [12].

5. CONCLUSION

Ignorance regarding tuberculosis continues to be a major problem in the present rural communities of India. Major policy changes and health education sessions including individual counselling may be essential to curb this social health issue from affecting wider populations. Timely interfERENCE is recommended from the stakeholders and health sector using a multifaceted approach.

CONSENT AND ETHICAL APPROVAL

The required ethical clearance were obtained for the conduction of the study from the concerned authorities of the institution as well as from the community and also individual informed consent was obtained from the study subjects.

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COMPETING INTERESTS
Authors have declared that no competing interests exist.

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