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A study on the knowledge and attitude regarding the prevention of tuberculosis among adults in selected rural area of Dehradun, Uttarakhand

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Abstract

Background: *Tuberculosis (TB) in many developing countries, including India, is a public health problem. Despite being a treatable and preventable disease, India has been fighting TB for more than 50 years. This study aims to evaluate the knowledge and attitude of adults in selected rural areas.*

Material and Method: *A cross-sectional study was conducted among 127 adults of Jolly Grant village, Doiwala, Dehradun, Uttarakhand. Data were collected through an interview method by a door-to-door survey with the help of sociodemographic data, a structured knowledge questionnaire, and a Likert scale. The participants were selected using randomization.*

Results: *The mean percentage of knowledge score was (11.65 ± 3.62) 58.25% and the mean percentage of attitude score was (48.34 ± 6.4) 80.5%. Most of the adults 68 (53%) had average knowledge followed by 48(38%) good and 11(9%) had poor knowledge. Most adults 67 (53%) had a positive attitude followed by 60 (47%) negative attitudes about the prevention of tuberculosis. A significant relationship was found between education level and education level, family type and understanding of tuberculosis ($p < 0.05$). A moderate positive correlation (0.557) was found between knowledge and attitude.*

Conclusion: *The need was found to improve the knowledge and attitude of the general population on the different domains as there was a lack of knowledge regarding prevention and general information on causes, risk factors, treatment, vaccines, and isolation of TB patients.*

Keywords: *Knowledge, attitude, prevention of tuberculosis.*

INTRODUCTION

Tuberculosis (TB) in many developing countries, including India, is a public health problem. While tuberculosis is an illness that can be treated and prevented, among infectious diseases, the second most common cause of death worldwide[1]. "Tuberculosis" is an exceptionally lethal respiratory disease still present on the planet. Every day, more than 4100 people die of tuberculosis (TB), and almost 28,000 people become infected with this avoidable and treatable disease. Calculated 66 million lives have been spared because of efforts to eradicate tuberculosis since 2000. On the other hand, years of advancement in the fight against tuberculosis have been interrupted by the COVID-19 epidemic. The number of deaths increased in 2020 for the first time in nearly a decade. 2 Global Day of TB (2022) theme was 'Invest to End TB, Save Lives, which emphasizes that investing resources is the emergent need to ratchet up the battle against TB and meet global leaders' responsibility for ending TB. This is especially important in the COVID-19 scenario. Countless measures exist that could be used globally to reduce the spread of illness. One of them is BCG vaccination, which has an 80% effectiveness in

prevention at least for 15 years; it means the chances of getting TB infection are higher after 15 years. Therefore, prevention techniques and knowledge about tuberculosis must be improved[2,3,4]. Breaking the chain of transmission, quick diagnosis, infection management, and efficient treatment are all important in tuberculosis prevention. In general, it is considered important that the general population be aware of tuberculosis to prevent the spread of cases. However, reality demonstrates that people may not always have sufficient knowledge or a good and acceptable attitude regarding tuberculosis prevention and treatment. Knowledge is vital for gaining insight into a person's thoughts and actions. It is an important aspect of the development of a person's behavior[5]. Evidence suggests that the spread of tuberculosis can be reduced by using masks for protection, proper ventilation of households, possibly infectious patients being separated from others, and screening the public, people, and caregivers on a routine basis. TB prevention programs require community participation, because TB issues greatly affect the knowledge and behavior of the community. Public knowledge about pulmonary tuberculosis affects the risk of community disease transmission. This is not just an individual problem, but a community problem related to the economic problems of individuals, families, communities, businesses, and countries.

National scenario

In 2020, India accounted for 26% of TB cases globally and 20000 tuberculosis notifications in Uttarakhand. The estimated 275 Lakh per year total cases together in public or private in 2020[6,7] .According to the TB annual report of India (2020), all age groups and genders are affected by tuberculosis, but the male population covers 61.7% of all TB cases. The age and sex ratio shows that the distribution of tuberculosis dominance is seen among 15–30-year-olds for both males and females. However, the two north-eastern states of Tripura and Manipur and the states of Andhra Pradesh, Kerala, Karnataka, and Tamil Nadu from the south have an 18–29% proportion of tuberculosis in the 15–30 age group[6,8].

Material and Method

A survey was conducted to assess the knowledge and attitude regarding the prevention of tuberculosis among 127 rural adults in a selected rural area of Dehradun, Uttarakhand, Jolly Grant Village. Adults of 20–45 years of age were selected by a random sampling technique. To identify the sample, a door-to-door survey was conducted, followed by an explanation of the purpose of the study and the acquisition of written consent from all participants. Adults unwilling to participate, having a history of tuberculosis, and known cases of tuberculosis with ongoing treatment were excluded from the study. The tool was found to be valid and reliable, and Seven Experts validated it on the basis of their areas of experience and knowledge. Experts were from the Community Medicine Department, Community Health Nursing, and Medical Surgical Nursing departments. Permission was obtained from the necessary authorities and administration. After that, a total of 32 questions were asked regarding socio-demographic data, the structured knowledge questionnaire, and the Likert scale for attitude assessment. Data were collected through the interview technique. Data analysis was done on the basis of descriptive and inferential statistics using SPSS.

Results

Table No.1. Description of Frequency and Percentage of adult's Characteristics

(N=127)

S. NO.	VARIABLE	FREQUENCY (f)	PERCENTAGE (%)
1.	Age (years)		
	a. 20-24	26	20.5
	b. 25-29	39	30.7
	c. 30-34	23	18.1
	d. 35-39	26	20.5
	e. 40-45	13	10.2

2.	Gender		
	a. Male	69	54.3
	a. Female	58	45.7
3.	Religion		
	a. Hindu	116	91.3
	b. Muslim	08	06.3
	c. Sikh	03	02.4
4.	Education		
	a. No formal education	04	03.1
	b. Primary education	12	09.5
	c. Secondary education	57	44.9
	d. Graduation	44	34.6
	e. Post graduate and above	10	07.9
5.	Marital Status		
	a. Married	85	67.0
	b. Unmarried	42	33.0
6.	Family type		
	a. Nuclear	56	44.1
	b. Joint	66	52.0
	c. Extended	05	03.9
7. Occupation			
a. Government job		10	08.0
b. Private job		57	45.0
c. Home maker		43	34.0
d. Student		17	13
8. Family monthly Income (Rs.)			
a. 5000-15000		52	41.0
b. 15001-25000		25	19.6
c. 25001-35000		31	24.4
d. 35001-45000		19	15.0
9. Awareness about PTB			
a. Yes		117	92.1
b. No		10	07.9
10. Source of Knowledge {Multiple-responses}			(n=117)
a. TV/Mobile		48	41.0
b. Radio		16	13.2
c. Health personnel		35	30.4
d. Printed source/newspaper/poster/Ads		14	12.0

e. Teacher/Family/Friends/ Neighbor's	04	03.4
11.a History of PTB in Family Member		
a. Yes	06	04.7
b. No	121	95.3
11.b. Family Member had PTB and Living with Family (n=6)		
a. Yes	04	66.7
b. No	02	33.3

Table 1. explores that with regard to age, most of the subjects 39 (30.7%) were between 25-29 years of age. With respect to gender, most adults 69 (54.3%) were males. Regarding religion, the majority of the adults 116 (91.3%) were Hindu, 8(6.3%) were Muslim and 3(2.4%) were Sikh. Regarding educational status, most of the subjects 57 (44.9%) had completed Secondary education. In terms of marital status, most of the subjects 85 (67%) were married. With respect to family type, the majority 66 (52.0%) of adults had a joint family. With regard to the occupation of the participants 57(45%) had private jobs. According to the monthly income of the family, the majority 52 (41 %) were between Rs 5000 - 15000. Most of the 117(92.1%) were aware of tuberculosis. In terms of history of tuberculosis 121(95.3%) had no tuberculosis related family history, 48 (41%) adult's source of health information is from television or mobile.

Description of Knowledge

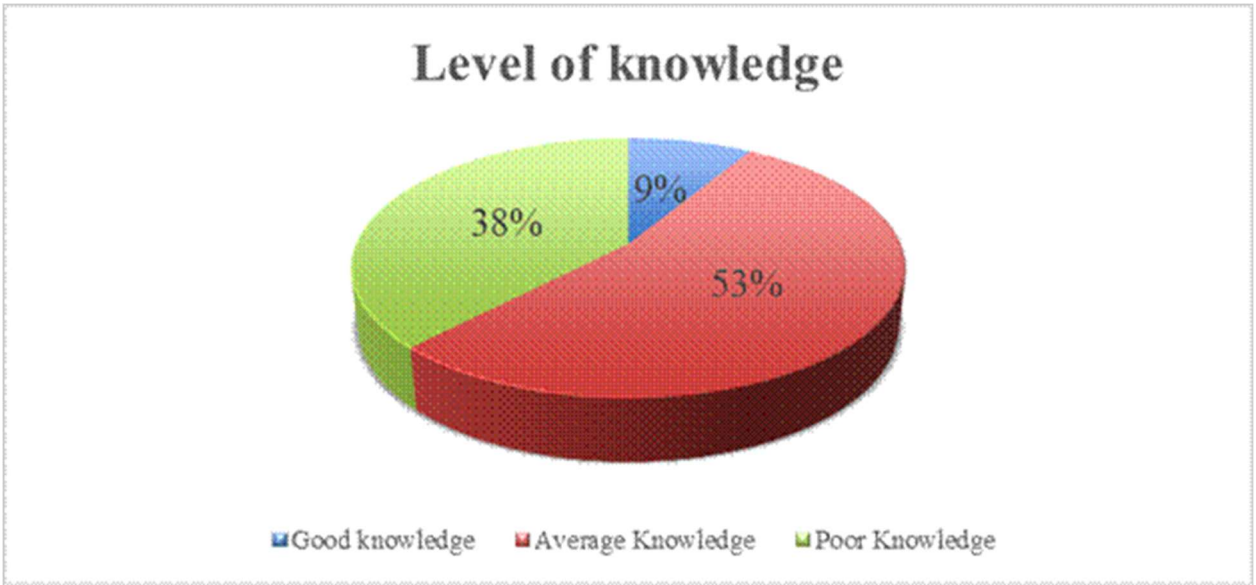

Figure no.1 knowledge level of adults

The knowledge mean was found 11.65 ± 3.62 and median 12. The mean percentage of knowledge score was 58.25%. Domain wise knowledge mean score 80% (1.6 ± 0.62) was found in introduction of tuberculosis followed by; diagnosis 70% (0.7 ± 0.41), signs & symptoms/transmission 63% (1.9 ± 0.84), prevention 53% (5.9 ± 2.1), treatment 50 % (01 ± 0.91), causes of Tb 40 % (0.4 ± 0.50) was the least mean score. Figure 1 shows that most of the adults 68 (53%) had average knowledge followed by poor knowledge 48 (38%) and 11(9%) adults had good knowledge score.

Table No.02. Range, Mean, Median, and SD of knowledge score of participants regarding tuberculosis and its prevention

(N=127)

Variable	Range	Mean ± SD	Median	Mean (%)
Knowledge	3 – 18	11.65 ± 3.62	12	58.25%

Max score - 20

The table 2 described that the obtain range of knowledge score were 3 – 18, notify the mean 11.65 ± 3.62 and median 12. The mean percentage of knowledge score was 58.25%. The knowledge score was further divided into 6 domains (Introduction, Causes, Sign & Symptoms/ Transmission, Diagnosis, Treatment, Prevention) to describe the knowledge in different areas.

Description of Attitude

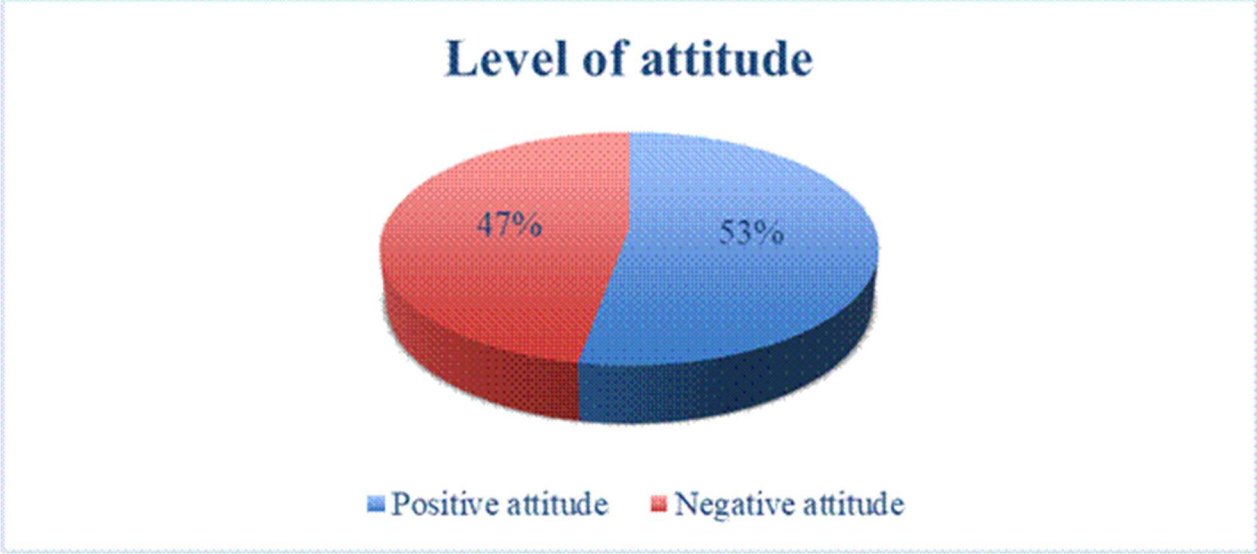

Figure no. 2 level of attitude of adults

The attitude mean was found 48.34 ± 6.4 and median 48. The mean percentage of the attitude score of adults was 80.5%. The domain wise attitude mean percentage score was about treatment 86.80% (13.02±2.06) followed by general awareness 85.72% (21.43±2.88), avoidance by people 66.60% (6.66±2.40), isolation 62% (3.10±1.51) and prevention 41.40% (4.14±1.01). Figure 2 shows that most of the adults 67 (53%) had a positive attitude followed by a negative attitude 60(47%).

Table No.03. Range, Mean, Median, and SD of Attitude score of participants regarding tuberculosis and its prevention

(N=127)

Variable	Range	Mean ± SD	Median	Mean (%)
Attitude	30 – 60	48.35 ± 6.4	48	80.5%

Max score - 60

Table 3 explain that the obtained range of attitude scores were 30-60, notify the mean 48.34 ± 6.4 and median 48. The mean percentage of the attitude score of the adults was 80.5%. The attitude score was further divided into 5 domains (General Awareness, Isolation, Avoidance by People, Prevention, Treatment) to describe the attitude in different areas.

Description of Association of knowledge and attitude

The association was found only between education, awareness of tuberculosis, and type of family with the level of knowledge ($p<0.05$). There was no association found between knowledge and among the sociodemographic variables like age, gender, religion, marital status, occupation, income per month in rupees and family history of tuberculosis of the participants. Associations were found to be nil among attitude scores with selected sociodemographic variables, that is "age, education, marital status, gender, religion, family type, occupation, per month family income (in rupees), awareness of Pulmonary Tuberculosis and family history of tuberculosis of the participants.

Discussion

Overall, the study explored that most of the adults had a 58.25% mean percentage knowledge score and 53% had average knowledge about the prevention of TB. Another study conducted by Laiby R, Debjani P, and Prashant B (2022) shows that 60% of adults had good knowledge.[9] Another study by More B (2019) shows that the mean percentage knowledge score was 48.59%.[10]
Overall, the study explored that most of the adults had an 80.58% mean percentage attitude score and 53% had a positive attitude about the prevention of TB. The findings given by More B (2019) show that the mean percentage attitude score was found 69.33%.[10] Another study conducted by Luba T R (2019) revealed that 72.8% had an adequate positive attitude.[11]

The association was found only with education, awareness of tuberculosis, and type of family of adults with knowledge level. A study by George M G et, al., (2021) explored that the association was only between religion and the knowledge of adults.[12] The results reported no association between the attitude with sociodemographic variables, i.e., age, religion, gender, education, type of family, marital status, occupation, per month family income in rupees, awareness of PTB, and family history of tuberculosis of the adults. These results were supported by a study which was concluded by A.O.Linda (2020) observed the findings that no significant association between attitude and "sociodemographic variables".[13]

Found a correlation between knowledge and attitude, $r = 0.557$; therefore, a moderate positive correlation was found between knowledge scores and attitudes. The research conducted by P.A Onyangol, (2020) assessed the positive interaction between attitude and knowledge.[14]

Conclusion

The study provided the following conclusions based on findings; Results reported that most adults have an average education, and most adults have a positive attitude regarding the prevention of tuberculosis. There was no significant relationship between knowledge and sociodemographic variables such as age, gender, religion, marital status, occupation, monthly income in rupees, tuberculosis history, source of information except education, family type, and awareness about tuberculosis. The findings demonstrated that no significant statistical relationship was found between attitude and sociodemographic data such as "age, gender, religion, education, marital status, family type, occupation, monthly income in rupees, family history of tuberculosis, and Source of knowledge.

Recommendations

The study reveals the need for different steps that must be taken combined by the community and government. Exploratory surveys should be conducted among the general population for awareness related to tuberculosis and stigma. Comparative study on knowledge and attitude and practises to assess the urban and rural general population can be done.

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Conflicts of interest
There are no conflicts of interest.

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