

Awareness about tuberculosis in a rural area of Mandya district: A cross-sectional study in southern Karnataka

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ABSTRACT

Background: Tuberculosis (TB) is a re-emerging disease in India. Creating awareness among the community still plays a vital role in preventing and controlling the spread of TB. **Materials and Methods:** A cross-sectional study was carried out for a period of 4 months in a rural area in Mandya, southern Karnataka. Sample size was estimated and those who fulfill the inclusion criteria were included with prior consent. Data were collected through interview method using structured questionnaire and analyzed using Epi info software. **Results:** Among the 774 participants, majority (61.8%) of the study participants belonged to the age group of 30–59 years; 32.7% of the subjects had studied up to secondary level of education. More than three-fourth of the subjects (76.1%) had heard about TB disease. More than 50% of the subjects mentioned “coughing” by a diseased person as the main reason for spread. Forty percent of the subjects, opined as recovery, will be complete after treatment. More than 60% of the subjects knew that TB diagnosis and treatment is free in any government health center. **Conclusion:** Our study found that knowledge regarding TB and its control in many of the aspects is either insufficient or not satisfactory in the community.

Keywords: Awareness, re-emerging disease, TB control, tuberculosis

Introduction

Globally, an estimated 10.0 million (range: 8.9–11.0 million) people fell ill with tuberculosis (TB) in 2019, a number that has been declining very slowly in recent years. There were an estimated 1.2 million (range: 1.1–1.3 million) TB deaths among HIV-negative people in 2019 (a reduction from 1.7 million in 2000). However, India still contributes to be the highest TB burden country in the world with an estimated incidence of 26.9 lakh cases in 2019 (WHO), and also, it has one of the largest shares (27%) of drug-resistant TB in the world.^[1-3]

TB also has huge socioeconomic impact as it commonly affects the most productive age group and rural high-risk population. An estimated 100 million people fall below the poverty line each year because of the financial burden related to TB disease.^[4] In Karnataka state, where the study is done, the presumptive TB case examination rate is 770/1 lakh population compared to the national (India) rate of 674/1 lakh population, whereas the TB case notification rate in Karnataka is 96/1 lakh population compared to 131/1 lakh population in India. And, our study area, in Mandya district in Karnataka, is having a still lower rate of TB case notification.^[5]

Even though India's share in TB burden is high, the disease is in declining trend since past few years. Under the National Tuberculosis Elimination Program, the treatment is completely free and also the patient will be given financial assistance as well to maintain a better nutrition. Apart from the treatment of the affected, the program also focuses on the early identification of cases through active case finding and by spreading awareness, as delay in

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approaching health care can lead to delay in diagnosis and treatment, which will hamper our attempts in reaching the target of TB-free India by 2025. And also, in the study area, the TB case notification rate is less compared to national level rate, which is a cause of concern.^[5]

Huge reduction in TB disease transmission from infected person to others in the family and community can be achieved by early diagnosis and treatment of TB.^[6] Therefore, it is important to assess the awareness level at regular intervals in the community as creating awareness helps in behavioral change and thereby improved health-seeking behavior which halts the ongoing transmission. *The primary care physicians (being the first point of contact for the community members) in the rural area or in the immediate vicinity of the concerned community will be more equipped to diagnose and notify the cases early, when there is a better awareness about TB in the community, and thus, our country's goal of eliminating TB from India by 2025 can be made possible.* Hence, the present study was carried out in a rural area of Mandya to estimate the community awareness and their perception toward TB.

Materials and Methodology

A community-based observational study (cross-sectional study) was carried out for a period of 4 months from February to May 2021 in a rural area, Mandya. The total population of the rural field practice area of a tertiary level institute in Nagamangala Tq, Mandya district selected, was 23,000. The individual houses were listed and selected randomly using the random number table to cover the sample size of 774. The sample size calculated using the formula $4pq/D^2$, for prevalence studies in the community, was 688 (with 70% prevalence of knowledge and 5% relative error).^[7] An additional 10% was added to cover up for the no response rate at 10%.

The subjects in the age group 18–65 years (able to respond in a language known to them) were included in the study in the selected households, after obtaining their informed consent (one person in each household). Those unable to reach in our three consecutive visits and those affected with TB were excluded from the study. A pretested and structured questionnaire was used in assessing the level of awareness about TB and health-seeking behavior. Data were collected through interview method using Google form. *Prior permission from the institution and the institution ethics committee approval was taken, with reference number AIMS/IEC/2293/2021.*

Data were entered in the excel sheet, refined, and there were no missing values. The results were analyzed using Epi info software. Results were expressed in terms of percentage and proportions. Inferential statistics like chi square and logistic regression were used to determine the association and the strength of the association between the categorical variables of interest.

Results

Majority (478) of the study participants belonged to the age group of 30–59 years (i.e. 30–39 is 20.4%, 40–49 years is 23.8%, and

50–59 years is 17.6%). Nearly 22% of them were elders (60 years and above), the remaining 16.4% of them were in the age group of 10–29 years (depicted in Table 1).

Nearly one-third (32.7%) of the subjects had studied up to secondary level of education and the remaining primary (27.5%), college (11.1%), and illiterates (24.7%). Only 4% of them had completed basic graduation courses as shown in Table 2. The difference in educational status among male and female subjects was found to be statistically significant with a *P* value of 0.010 (Chi-square value 13.331).

Majority of the subjects, that is, 76.1% of the responded, had heard about TB disease (Table 3 and Figure 1: 60% mentioned the correct name “Kshaya roga” in local language Kannada). Nearly three-fourth of the female subjects and 80% of the male subjects had heard about TB disease. The difference was found to be statistically significant with a *P* value of 0.024 (Chi-square value 5.074).

Table 4 depicts the past history of TB disease among the subjects. Only 2.7% of them had TB disease in the past. Among the

Table 1: Distribution of subjects by age group in years

	Female	Male	Total
Age group in years			
10-19	11	9	20 (2.6)
20-29	77	30	107 (13.8)
30-39	108	50	158 (20.4)
40-49	110	74	184 (23.8)
50-59	81	55	136 (17.6)
60 and above	103	66	169 (21.8)
Total	490	284	774 (100)

Figures in parenthesis indicate percentage

Table 2: Educational status of the study participants/ subjects

Educational status of the subjects	Female	Male	Total
Illiterate	140	51	191 (24.7)
Primary	136	77	213 (27.5)
Secondary	144	109	253 (32.7)
College	51	35	86 (11.1)
University and above	19	12	31 (4)
Total	490	284	774 (100)

Figures in parenthesis indicate percentage

Table 3: Awareness about TB disease among the subjects

Awareness about TB disease		Gender		Total
		Female	Male	
Have you heard of TB?	No			
	Count	130	55	185
	% within gender	26.5%	19.4%	23.9%
Yes	Count	360	229	589
	% within gender	73.5%	80.6%	76.1%
Total	Count	490	284	774 (100%)
<i>P</i>		0.024		

subjects, 16.4% of them knew someone in their area who has/had TB disease.

More than 50% of the subjects mentioned “coughing” by a diseased person as the main reason for spread and 15% of the subjects were specific in telling bacteria causing TB [Table 5; Figure 2]. The difference in knowledge regarding TB was not significant by gender.

Table 6 depicts more than one-third of the subjects knew that TB is a preventable disease and 60% of the subjects knew that TB can

Table 4: Distribution of subjects by past history of TB disease

Past history of TB disease	Frequency	Percentage
Response from the subjects		
Don't know	52	6.7
No	701	90.5
Yes	21	2.7
Do you know someone who has/had TB disease		
Response from the subjects		
No	647	83.6
Yes	127	16.4
Total	774	100

Table 5: Awareness about TB disease characteristics

Modes of spread	Frequency	Percentage
Cough (air)	402	51.9
Hereditary	9	1.2
Being in a public area	15	1.9
Sexual contact with TB patient	4	0.5
Unclean food or water	34	4.4
Other reasons	17	2.2
Don't know	293	37.9
Total	774	100.0
Cause of TB		
Bacteria	117	15.1
Don't know	616	79.6
Evil eye	6	0.8
Satan or witchcraft	2	0.3
Virus	33	4.3
Total	774	100.0

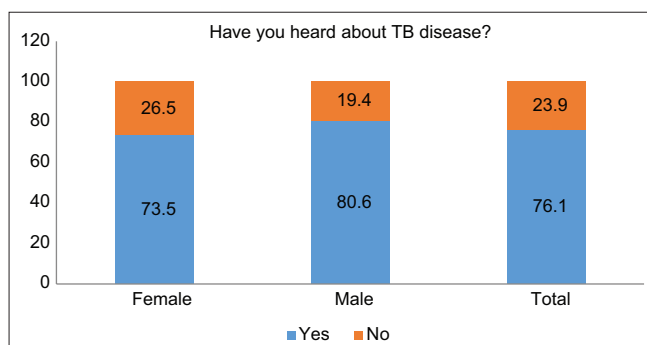


Figure 1: Awareness about TB disease in percentage (have you heard about TB disease?—Yes or no)

be treated effectively. The preventive options known to subjects include therapy (20.4%), vaccine (8.8%), isolation (7.6%), and few others like wearing mask, good hygiene, and nutrition (less than 1%).

More than 50% of the subjects knew that treatment for TB is for more than 1 month and 22.4% of the subjects mentioned 6 months of treatment option. Nearly 40% of the subjects were of the opinion that recovery from TB disease will be complete if right treatment is given for a right duration prescribed. More than 60% of the subjects mentioned that TB diagnosis and treatment is free in any government health center [Table 7].

Table 8 depicts the treatment-seeking behavior among subjects with major and minor symptoms. More than 80% seek treatment if the symptoms are worse (cough with blood) but more than 30% neglect for minor cough symptoms.

The difference in TB awareness among subjects with different educational status was found to be statistically significant with *P* value of <0.001. The subjects with better educational level had a better awareness related to TB with an adjusted odds ratio value ranging from 4.867 to 19.366, as shown in Table 9.

Discussion

In the present study, majority (61.8%) of the study participants belonged to the age group of 30–59 years. Around 50% of our study participants hadn't completed their primary schooling.

Majority of the subjects, that is, 76.1% of them, had heard about TB disease. Nearly three-fourth of the female subjects and 80% of the male subjects had heard about TB disease. The difference was found to be statistically significant with a *P* value of 0.024 (Chi-square value 5.074). This finding was similar to the study conducted by Rami *et al.*^[7] (72.18%) in Patan, Gujarat, with majority of the participants being from rural area, whereas a study done by Koneru *et al.*^[8] in a tertiary medical college in Tamil Nadu showed 90% subjects having heard about TB. The better knowledge in their study might be due to the fact that the study included out-patient department patients in the hospital.

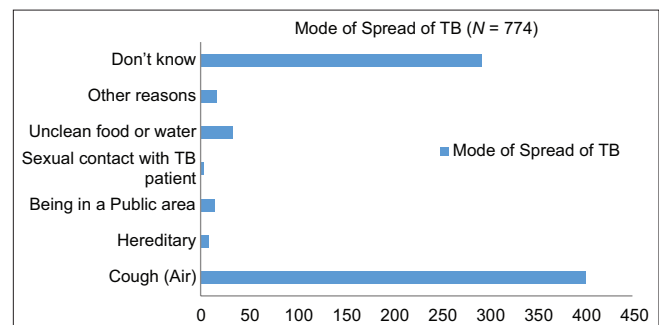


Figure 2: Mode of spread of TB

Table 6: Response from the subjects with regard to TB prevention and management

TB is preventable	Frequency	Percentage
Response from the subjects		
Don't know	471	60.9
No	32	4.1
Yes	271	35.0
TB is treatable	Frequency	Percentage
Response from the subjects		
Don't know	288	37.2
No	19	2.5
Yes	467	60.3

Table 7: Response of participants with regard to treatment duration for TB

Treatment duration for TB	Frequency	Percentage
Response		
Don't know	337	43.5
1 month	53	6.8
2 months	33	4.3
3 months	82	10.6
6 months	173	22.4
1 year	96	12.4
Total	774	100.0
Recovery complete	Frequency	Percentage
Response		
Don't know	439	56.7
No	36	4.7
Yes	299	38.6
Is diagnosis and treatment for TB free?	Frequency	Percentage
Response		
Don't know	100	13
No	200	26
Yes	474	61

Table 8: Response of subjects for TB symptom (e.g., cough with blood in sputum)

Subject response for worst TB-related symptom (cough with blood in sputum)	Frequency	Percentage
Response		
Neglect	3	0.4
Consult someone-traditional medicine	42	5.4
Consult someone-modern medicine	665	85.9
Self-treatment-modern medicine	35	4.5
Self-treatment-traditional medicine	29	3.7
Total	774	100.0
Wait duration before seeking treatment if symptoms are minor (cough)	Frequency	Percentage
Response		
Neglect	254	32.8
>3 months	2	0.3
1 month	30	3.9
1 week	391	50.5
2 months	4	0.5
2 weeks	93	12.0
Total	774	100.0

However, studies done by Jangid *et al.*^[9] (in Rajasthan) and Kala *et al.*^[10] (in Tamil Nadu) showed 70–90% subjects having heard about TB. This may be due to the fact that their study was conducted among TB patients who were informed about the TB disease by the health workers and accredited social health activist (ASHA) workers. More than 60% of the subjects in our study were aware that TB is an infectious disease, among which 50% of the study subjects knew that “coughing” is the mode of spread and 15% of the subjects were specific in telling bacteria-causing TB. This finding is similar to a study done by Charles *et al.*^[11] in South India, where more than half of the study participants were aware that TB spreads through air.

Other studies done by Sharma *et al.*^[12] (89%), Fochsen *et al.*^[13] (95%), and Samal *et al.*^[14] showed still a better knowledge among their study participants. This is in contrast to a study done in rural Tamil Nadu by Kar *et al.*^[15] which showed regarding knowledge about mode of spread of the disease, only 20% replied cough or sputum as the mode of spread. The better knowledge among our study participants might be because of the proximity of the area to the health center nearby and also to the tertiary level medical college, with continuous health awareness program being conducted in the area studied.

More than one-third of the subjects in our study told that TB is a preventable disease and 60% of the subjects knew that TB can be treated effectively. The preventive options known to subjects include therapy (20.4%), vaccine (8.8%), isolation (7.6%), and few others like wearing mask, good hygiene, and nutrition (less than 1%). In a study done by Koneru *et al.*^[8] in Tamil Nadu, 23% opined that TB was not curable and 54.4% had knowledge on prevention of TB by avoiding contact, using handkerchief while coughing, and living in clean environment. These findings are similar to the findings in our study, except the better knowledge on TB being preventable in their study as the participants were TB-infected patients. The findings of our study are in contrast to the study done by Shriram *et al.*^[16] in Tamilnadu where 18.5% of the participants mentioned TB as curable disease as they involved brick kiln workers with more than 50% being illiterates.

In our study, 22.4% of the subjects mentioned a minimum of 6 months of treatment for TB. Nearly 40% of the subjects were of the opinion that recovery from TB disease will be complete if right treatment is given for a right duration prescribed, whereas studies done by Jangid *et al.*^[9] in Rajasthan and Vidhani *et al.*^[17] in rural Surat (Gujarat) in 2012 found that 55.8% and 32.9% of the participants, respectively, were aware of the duration of TB treatment as 6–9 months, as the study included only TB patients.

Nearly two-third of the subjects in our study felt that TB diagnosis and treatment is completely free in any government health center near or far. A study done in Delhi by Sharma *et al.*^[12] after an information education & communication (IEC) campaign showed 89% of the subjects mentioning TB diagnostics and treatment as “free.”

Table 9: Association of TB awareness with subject's educational status

Educational status with TB awareness	Illiterate	Primary	Secondary	College and above	Total
Have you heard of TB?					
No	104	42	34	5	185
Yes	87	171	219	112	589
Total	191	213	253	117	774
<i>P</i>			<0.001		
aOR (adjusted odds ratio)	Constant	4.867 (CI 3.129-7.569)	7.700 (CI 4.861-12.197)	19.366 (CI 7.512-49.924)	

Similar findings were shown by a study done in Mumbai and Patna by Shah *et al.*^[18]

In our study, more than 80% seek treatment if the symptoms are worse (cough with blood) but more than 30% neglect for minor cough symptom. More than 8% of the subjects preferred self-treatment even with severe symptoms mentioned above. A study done in rural area of Madhya Pradesh showed 67% of the subjects with symptoms like cough sought health care.^[13] These symptoms are similar to the findings in our study.

Our study finding of higher level of education, having better odds (odds ratio ranging from 4.867 to 19.366) of TB knowledge, was also shown by study done by other studies.^[6,11,19,29]

Being the usual first point of contact for the people in the community, the primary care physicians and family physicians (peripheral health institutions) serving in the rural areas and in areas with vulnerable people for TB have a great role to play in making India TB free by 2025. Focused, community oriented, and regular programs to improve the awareness related to TB care, prevention and the precautionary behavior related to control of TB infection in the country, will strengthen the primary care physician's capability to help improve the TB case notification and help realize the goal of a TB-free India by 2025. And also, primary care physicians have a much bigger role to play in communicating the accurate and appropriate TB-related information to the community, so as to reduce much of the stigma associated with TB.^[30]

Summary and Conclusion

More than three-fourth of the subjects in our study had heard about TB disease. More than 60% of them were aware that TB is infectious disease, and 50% of them knew that "coughing" is an important mode of spread. More than one-third of the subjects mentioned that "TB is a preventable disease" and 60% of the subjects knew that TB can be treated effectively. Nearly two-third of the total subjects felt that TB diagnosis and treatment is completely free in any government health center. The adjusted odds ratio for TB awareness was higher among those with better educational level, which was significant statistically. More than 80% in our study mentioned that they would seek treatment if the symptoms are worse (cough with blood) but more than 30% neglect for minor cough symptoms.

The above findings from our study highlight the fact that knowledge regarding TB and its control in many of the aspects is either insufficient or not satisfactory in the community. Health

education of the members of the rural community at large needs to be improved. And also, this study reiterates the need of large-scale community-based TB awareness studies in rural as well as urban areas to help our effort toward TB elimination from India by 2025. Strengthening our attempts toward TB-free India by 2025 necessitates the need for a coordinated effort by the community members with the accurate and necessary information and the health-care professionals, be it the health workers, primary care physicians, public health professionals, specialists in TB care, or even policy makers and administrators at the highest level. Multi-sectoral approach by various stakeholders involved in TB care, with people having the right information related to TB, is the need of the hour.

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Conflicts of interest

There are no conflicts of interest.

References

1. Central TB Division. India TB Report 2020. New Delhi: Ministry of Health and Family Welfare; 2020.
2. World Health Organization. Global Tuberculosis Report 2020. Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO.
3. Dumpeti S, Jothula KY, Naidu NK. Awareness about tuberculosis and RNTCP services among rural people in Nalgonda district, Telangana. *J Family Med Prim Care* 2020;9:3281-7.
4. Tanimura T, Jaramillo E, Weil D, Raviglione M, Lönnroth K. Financial burden for tuberculosis patients in low- and middle-income countries: A systematic review. *Eur Respir J* 2014;43:1763-75.
5. Central TB Division. India TB Report 2021. New Delhi: Ministry of Health and Family Welfare; 2021.
6. Potty RS, Kumarasamy K, Adepy R, Reddy RC, Singarajipura A, Siddappa PB, *et al.* Community health workers augment the cascade of TB detection to care in urban slums of two metro cities in India. *J Glob Health* 2021;11:04042.
7. Rami K, Thakor N, Patel A. Awareness and knowledge about tuberculosis in patient of tuberculosis at GMERS Medical College and Hospital Dharpur, Patan, Gujarat. *Int J Med Sci Public Health* 2015;4:906-9.
8. Koneru KS, Gangadharan V, Ramya VH, Joy P. Awareness of tuberculosis among patients attending Saveetha Medical College. *Int J Sci Res* 2018;7:44-7.

9. Jangid VK, Agrawal NK, Yadav GS, Pandey S, Mathur BB. Knowledge and awareness of the tuberculosis in tuberculosis patients at a Tertiary care centre in North West Rajasthan, India. *Ntl J Community Med* 2016;7:262-8.
10. Kala M, John KR, Logaraj M. A Study on Awareness on Pulmonary Tuberculosis Among Population Covered Under Rural Health Training Centre At Mamandur in Tamilnadu. *Biomed. & Pharmacol. J.* 2016; 9:651-57.
11. Charles N, Thomas B, Watson B, Chandrasekeran V, Wares F. Care seeking behaviour of chest symptomatics: A Community based study done in South India after the implementation of the RNTCP. *PLoS One* 2010;5:e12379.
12. Sharma N, Taneja DK, Pagare D, Saha R, Vashist RP, Ingle GKA. The impact of an IEC campaign on tuberculosis awareness and health seeking behaviour in Delhi, India. *Int J Tuberc Lung Dis* 2005;9:1259-65.
13. Fochsen G, Deshpande K, Diwan V, Mishra A, Diwan VK, Thorson A. Health care seeking among individuals with cough and tuberculosis: A population-based study from rural India. *Int J Tuberc Lung Dis* 2006;10:995-1000.
14. Samal J. Health seeking behaviour among tuberculosis patients in India: A systematic review. *J Clin Diagn Res* 2016;10:LE01-6.
15. Kar M, Logaraj M. Awareness, attitude and treatment seeking behaviour regarding tuberculosis in a rural area of Tamil Nadu. *Indian J Tuberc* 2010;57:226-9.
16. Shriram V, Srihari R, Gayathri K, Murali L. Awareness on tuberculosis and factors determining it among Migrant Brick Kiln workers in a rural area in South India. *Indian J Public Health Res Dev* 2020;11:1171-7.
17. Vidhani M, Vadgama P. Awareness regarding pulmonary tuberculosis-A study among patient taking treatment of tuberculosis in Rural Surat, Gujarat. *Natl J Med Res* 2012;2:452-5.
18. Shah S, Shah S, Rangan S, Rai S, Lobo E, Kamble S, *et al.* Effect of public-private interface agency in Patna and Mumbai, India: Does it alter durations and delays in care seeking for drug-sensitive pulmonary tuberculosis? *Gates Open Res* 2020;4:32.
19. Eram U, Nawab T, Khalique N. Patients knowledge and attitude towards tuberculosis in a rural setting in Aligarh. *Int J Pharm Sci Invent* 2016;5:31-4.
20. Chinnakali P, Ramakrishnan J, Vasudevan K, Gurumurthy J, Upadhyay RP, Panigrahi KC. Level of awareness about tuberculosis in urban slums: Implications for advocacy and communication strategy planning in the National program. *Lung India* 2013;30:139-42.
21. Shewade HD, Gupta V, Satyanarayana S, Pandey P, Bajpai UN, Tripathy JP, *et al.* Patient characteristics, health seeking and delays among new sputum smear positive TB patients identified through active case finding when compared to passive case finding in India. *PLoS One* 2019;14:e0213345.
22. Prasad BM, Satyanarayana S, Chadha SS, Das A, Thapa B, Mohanty S, *et al.* Experience of active tuberculosis case finding in nearly 5 million households in India. *Public Health Action* 2016;6:15-8.
23. Prasad BM, Satyanarayana S, Chadha SS. Lessons learnt from active tuberculosis case finding in an urban slum setting of Agra city, India. *Indian J Tuberc* 2016;63:199-202.
24. Sreeramareddy CT, Qin ZZ, Satyanarayana S, Subbaraman R, Pai M. Delays in diagnosis and treatment of pulmonary tuberculosis in India: A systematic review. *Int J Tuberc Lung Dis* 2014;18:255-66.
25. Bhardwaj AK. Tuberculosis control programme from NTCP to RNTCP to NTEP. *Indian J Community Heal* 2020;32:469-70.
26. Subbaraman R, Jhaveri T, Nathavitharana RR. Closing gaps in the tuberculosis care cascade: An action-oriented research agenda. *J Clin Tuberc Other Mycobact Dis* 2020;19:100144.
27. Subbaraman R, Nathavitharana RR, Mayer KH, Satyanarayana S, Chadha VK, Arinaminpathy N, *et al.* Constructing care cascades for active tuberculosis: A strategy for program monitoring and identifying gaps in quality of care. *PLoS Med* 2019;16:e1002754.
28. Yasobant S, Bhavsar P, Kalpana P, Memon F, Trivedi P, Saxena D. Contributing factors in the tuberculosis care cascade in India: A systematic literature review. *Risk Manag Healthc Policy* 2021;14:3275-86.
29. Shamanewadi AN, Naik PR, Thekkur P, Madhukumar S, Nirgude AS, Pavithra MB, *et al.* Enablers and challenges in the implementation of active case findings in a selected district of Karnataka, South India: A qualitative study. *Tuberc Res Treat* 2020;2020:9746329.
30. Arora R, Khanna A, Sharma N, Khanna V, Shringarpure K, Kathirvel S. Early implementation challenges in electronic referral and feedback mechanism for patients with tuberculosis using Nikshay - A mixed-methods study from a medical college TB referral unit of Delhi, India. *J Family Med Prim Care* 2021;10:1678-86.