Chettinad Health City Medical Journal
Volume 13, Issue 4 - 2024, Pg. No. 113-120
Peer Reviewed & Open Access Journal

Research Article

Knowledge, Attitude, and Perception (KAP) of ASHA Workers in Tuberculosis Management: A Cross-Sectional Study at Primary Health Centres

Bandaru Yeswanth Raja[1], Madiwalayya Shivakantayya Ganachari[2], Aniket Dilipkumar Manoli[3]

[1,2]Department of Pharmacy Practice, KLE College of Pharmacy, Belagavi, KLE Academy of Higher Education and Research, Belagavi, Karnataka, India.
[3]Department of Community Medicine, Jawaharlal Nehru Medical College, Belagavi, KLE Academy of Higher Education and Research, Belagavi, Karnataka, India.
DOI: https://doi.org/10.24321/2278.2044.202467

I N F O

Corresponding Author:
Bandaru Yeswanth Raja, Department of Pharmacy Practice, KLE College of Pharmacy, Belagavi, KLE Academy of Higher Education and Research, Belagavi, Karnataka, India.
E-mail Id:
yashmohan2979@gmail.com
Orcid Id:
https://orcid.org/0000-0003-4128-3484
How to cite this article:
Raja B Y, Ganachari M S, Manoli A D. Knowledge, Attitude, and Perception (KAP) of ASHA Workers in Tuberculosis Management: A Cross-Sectional Study at Primary Health Centres. Chettinad Health City Med J. 2024;13(4):113-120.

Date of Submission: 2024-02-02
Date of Acceptance: 2024-08-26

A B S T R A C T

Introduction: Accredited Social Health Activist (ASHA) workers work as Directly Observed Therapy Short course (DOTS) providers in rural and tribal areas.

Method: A cross-sectional epidemiological community-based study was conducted in various Primary Healthcare Centres (PHC) in the Belagavi district of North Karnataka, India over a period of 10 months. The ASHAs were interviewed with a structured KAP questionnaire and the collected data was analysed in SPSS version 23.0.

Results: A total of 150 ASHA workers were interviewed. The majority of the ASHA workers were between the age of 31 and 35 years (43.33%) and 38.37% had working experience of more than 6 years. Most of the ASHA workers had poor knowledge (mean score: 14.61 ± 3.10) and attitude (mean score: 15.29 ± 3.09), but good perception (mean score: 11.14 ± 1.96) based on the working experience ($p < 0.05$).

Conclusion: The involvement of ASHAs themselves in disease control programmes was lacking. Therefore, educating and encouraging ASHA workers through training programs will enhance the tuberculosis (TB) treatment strategies among TB patients.

Keywords: Tuberculosis, ASHA Workers, DOTS Therapy, PHC Centres, Karnataka, India

Introduction

Tuberculosis (TB) still remains one of the main health concern problems in India, despite many serious communicable diseases.[1] In time diagnosis, appropriate recognition and treatment of tuberculosis by trained health workers are promising factors in addressing this global health problem.[2] According to the World Health Organization (WHO), developing countries such as India are estimated to have 10.4 million tuberculosis cases worldwide each year, with a population of about 2.8 million.[3,4] As per the Indian TB report 2023, Karnataka state notified about new TB cases of 69836 (86.8%). Among the state tribal population accompanies about 2701 (97.3%) of TB cases are initiated with TB treatment.[5] India has achieved the Millennium Development Goals (MDGs) for tuberculosis, but there is still work to be done to reach the 2030 Sustainable Development Goals (SDGs) and the 2035 End Tuberculosis Strategic Goal.[6]

The Revised National Tuberculosis Control Programme (RNTCP) in India currently called National Tuberculosis Elimination Programme (NTEP), based on the Directly Observed Therapy Short course (DOTS) strategy, provides the DOTS beyond the primary healthcare system.[7] Approximately 77% of the world's population uses this strategy for tuberculosis treatment worldwide.[8] Reaching TB patients in rural and tribal communities is a challenge for health workers. It is important to support and invest in research for the prevention and management of TB.[9] The National Rural Health Mission (NRHM) was established by the Government of India in 2005 to strengthen the health system in rural and tribal areas. Accredited Social Health Activists (ASHAs) play an important role in the National Rural Health Mission (NRHM) strategy to raise awareness and provide DOTS in rural and tribal areas.[10]

Since indigenous populations are the most vulnerable and find it challenging to communicate directly with government healthcare facilities, ASHA workers interface with village units and give complete DOTS treatment to these communities. In this case, ASHA serves as families' primary contact with the public healthcare system.[11] Currently there are about 9.83 lakh ASHA workers across the country providing support towards mother and child care programmes, family planning, disease control programmes etc.[12] In Karnataka, there are 41,785 ASHA workers have been working across the state.[13] Therefore, we carried out a study to explore the knowledge, attitude and perception (KAP) study among the ASHA workers in the management of TB from the selected primary healthcare centres of Belagavi district, Karnataka state, India.

Material and Method

Study Design and Settings

A cross-sectional epidemiological community-based study was conducted at the Primary Healthcare Centres (PHCs) of the Belagavi district of North Karnataka region in India. The study was carried out from October 2021 to August 2022, over a period of 10 months among ASHA healthcare workers. The ASHA workers who were working under NRHM and were willing to participate in the study were included. In Belagavi District, there are ten talukas, out of which, five talukas were selected namely Belagavi, Chikkodi, Gokak, Khanapur and Ramdurg for carrying out the study.

Study Participants

A total number of 173 ASHA workers were interviewed for the study. Twenty-three among them declined to participate, thus 150 ASHA workers participated in the study. Participants were explained about the study and written informed consent was obtained. The medical officers from the respective PHCs were met and the meeting with ASHAs was held for conducting the study.

Data Collection

The data collection was carried out with a structured questionnaire that included demographic information such as age, marital status, religion, education level and working experience. The questionnaire was framed with Sociodemographic Details and a five-point Likert scale was used for assessing the knowledge, attitude and perception of the ASHA workers.

A pilot study was tested on 20 subjects and the questionnaire was modified accordingly. Initially, the questionnaire was designed in English, then translated into the regional language (Kannada) and back-translated into English to check the validity of the translated questionnaire. The reliability was found to be good (Cronbach's alpha i.e., $\alpha \geq 0.81$).

Ethical Approval

The study was approved by the Institutional Ethics Committee (IEC) with the ethical committee number KAHER/EC/21-22/020 from KLE Academy of Higher Education and Research, Belagavi, Karnataka state, India.

Data Analysis

The collected data was entered in Microsoft Excel Office 2019. The data were analysed by using SPSS version 23.0. The demographic details, knowledge, attitude and perception were assessed using descriptive statistics like percentages and proportions. The interpretation of knowledge, attitude and perception of the performance of ASHA workers with their working experience were analysed using one-way ANOVA. The level of significance was fixed at 0.05 ($p < 0.05$).

The illustrative representation of the methodology is shown in Figure 1.

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202467

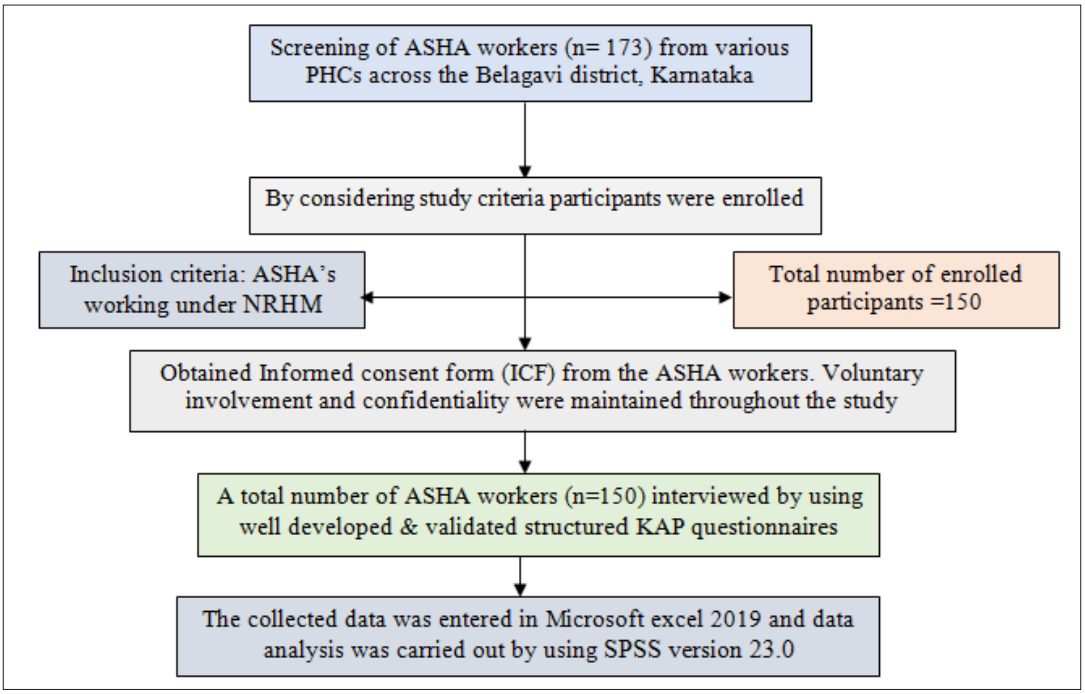

Figure 1.Illustrative Representation of Methodology

Results

Out of the total 150 ASHA healthcare workers, 65 ASHAs (43.33%) were aged 31–35 years, followed by 43 ASHAs (28.67%) aged 36 years and more, and 42 ASHAs (28.00%) belonging to the age group of 30 years or less. The majority of the ASHAs (134, 89.33%) were married and 16 ASHAs (10.66%) were unmarried. Most of the ASHAs were Hindu (120, 80%), followed by Muslims (15, 10%), Jains (9, 6%) and others (6, 4%). The education level of most ASHA workers was higher secondary school (68, 45.33%), followed by high school (50, 33.33%) and diploma graduates (32, 21.33%). The working experience of most of the ASHAs was 6 years or more (58, 38.67%), followed by 44 ASHAs (29.33%) with 1–5 years of experience and 48 ASHAs (32.00%) with an experience of 1 year or less. The sociodemographic details of ASHAs are characterised in Table 1.

Knowledge-Wise Responses of ASHAs

Regarding responses of ASHAs about knowledge of TB management, the majority (26.00%) agreed and 21.33% strongly agreed that tuberculosis transmission occurs by droplet spread. Very few ASHAs (26.67%) knew about cough and chest pain being the most common symptoms of pulmonary TB. Most of the ASHAs (44.67%) disagreed about TB treatment guidelines providing an accurate treatment timeline course for patients. About 40% agreed that non-compliance with treatment was due to adverse effects in patients. About 41.33% agreed that MDR-TB arises due to medication non-adherence. The knowledge responses of ASHAs are characterised in Table 2.

Table 1.Sociodemographic Details of ASHAs

Demographic Profile	No. of ASHA Workers (n)	Frequency of ASHA Workers (%)
Age groups (years)		
≤ 30	42	28.00
31–35	65	43.33
≥ 36	43	28.67
Marital status		
Married	134	89.33
Unmarried	16	10.66
Religion		
Hindu	120	80.00
Muslim	15	10.00

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202467

Jain	9	6.00
Others	6	4.00
Educational level		
High school	50	33.33
Higher Secondary school	68	45.33
Diploma	32	21.33
Working experience (years)		
≤ 1	48	32.00
1–5	44	29.33
≥ 6	58	38.67
Total	150	100.00

Table 2.Knowledge-Wise Responses of ASHAs

S. No.	Knowledge	Strongly Agree (%)	Agree (%)	Neither Agree nor Disagree (%)	Disagree (%)	Strongly Disagree (%)
1.	Is tuberculosis spread through droplet transmission?	21.33	26.00	2.00	32.67	18.00
2.	Are cough and chest pain prevalent symptoms of pulmonary TB?	27.33	26.67	1.33	23.33	21.33
3.	Will adherence to NTEP TB treatment guidelines provide an accurate treatment timeline course for TB patients?	6.67	26.67	11.33	44.67	10.67
4.	Are the adverse effects of antitubercular therapy responsible for patient non-compliance with treatment?	3.33	40.00	18.00	37.33	1.33
5.	Do you think MDR-TB arises due to medication non-adherence?	19.33	41.33	14.00	14.00	11.33

Table 3.Attitude-Wise Responses of ASHAs

S. No.	Attitude	Strongly Agree (%)	Agree (%)	Neither Agree nor Disagree (%)	Disagree (%)	Strongly Disagree (%)
1.	Do family members of TB patients need to undergo screening for TB infection?	18.00	34.67	3.33	36.00	8.00
2.	Starting the anti-TB treatment is a better option for a TB patient before the diagnosis is confirmed if a suspected TB patient.	10.00	33.00	8.00	39.67	9.33
3.	Do you think patient medication non-adherence is due to adverse effects of antitubercular therapy?	10.67	13.33	6.67	38.00	31.33

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202467

4.	Always keeping TB patients in isolated rooms is a good practice.	16.00	37.33	8.00	28.00	10.67
5.	Do you use a mask when approaching a TB-suspected patient for your prevention?	12.00	26.00	10.67	48.67	2.67

Attitude-Wise Responses of ASHAs

While analysing the attitude of ASHAs regarding TB management, it was seen that most (34.67%) of the ASHAs accepted that TB patient's family members should be tested for TB. The majority (39.67%) of ASHAs disagreed about initiating the anti-TB treatment without confirming the diagnosis of TB for the patients. Almost one-fourths of ASHAs (38%, 31.33%) had not agreed that patient medication non-adherence was due to adverse effects of anti-TB treatment. The majority of the ASHAs (37.33%) agreed that keeping TB patients in isolated rooms is good practice. Most of the ASHAs (48.67%) disagreed about taking prevention of wearing masks while approaching TB-suspected patients. The attitude responses of ASHAs are characterised in Table 3.

Table 4.Perception-Wise Responses of ASHAs

S. No.	Perception	Strongly Agree (%)	Agree (%)	Neither Agree nor Disagree (%)	Disagree (%)	Strongly Disagree (%)
1.	Providing education to TB patients about the prevention of TB transmission will help in the control of TB.	18.00	35.33	0.67	18.00	28.00
2.	Do you recommend opening windows whenever possible in TB patients' rooms to increase natural ventilation?	10.00	63.33	10.00	12.67	4.00
3.	TB suspected patients should be kept away from the rest of the family members which will help in preventing the spread of TB.	20.67	32.67	6.00	17.33	23.33
4.	Periodic education of healthcare workers will help to eradicate TB.	22.00	33.33	4.00	40.00	0.67
5.	Providing education about nutritious diet intake to suspected TB patients will help in the completion of treatment.	8.00	15.33	5.33	43.33	28.00

Table 5.Analysing the Relationship between Working Experience and the Mean Scores of Knowledge, Attitude, and Perception using a One-Way ANOVA Test

Working Experience (Years)	Knowledge		Attitude		Perception	
	Mean	SD	Mean	SD	Mean	SD
< 1	14.65	2.71	15.81	2.73	11.02	1.99
1–5	15.02	3.47	15.30	3.55	11.30	1.89
≥ 6	14.26	3.12	14.86	2.99	11.12	2.01
Total	14.61	3.10	15.29	3.09	11.14	1.96
f value	0.7644		1.2444		0.5639	
p value	0.4675		0.2911		0.0429	

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202467

Perception-Wise Responses of ASHAs

Analysis of the perception of participants towards TB management showed that most of the ASHAs (35.33%) agreed that educating TB patients about TB transmission will help in the control of TB. Almost three-fourths (63.33%) of the ASHAs agreed that opening windows in TB patients' rooms would increase natural ventilation. Most of the ASHAs (32.67%) agreed that TB-suspected patients should be kept away from the rest of the family people to prevent the spread of TB to non-infected people. Many of them (40%) opined that periodic education may not help in the eradication of TB and 43.33% believed that educating about nutritious diet intake will not be helpful in the completion of TB treatment. The perception responses of ASHAs are characterised in Table 4.

In the comparison of ASHAs' working experiences with KAP using one-way ANOVA test, the mean value of knowledge was found to be 14.61 ± 3.10 with a p value of 0.4675 and attitude was found to be 15.29 ± 3.09 with a p value of 0.2911. The mean value of perception was found to be 11.14 ± 1.96 with a p value of 0.0429, which was found to be significant as mentioned in Table 5.

Discussion

ASHA plays an important role in implementing disease management strategies in rural areas and serves as a bridge between primary healthcare centres and rural populations. They also play a key role in the NRHM in achieving the TB Millennium Development Goals.[14] According to National Health Mission (NHM) guidelines, ASHA workers must be female residents of the village between the ages of 25 and 45 years with a formal education of up to eighth class.[15] In our study, most ASHAs were in the age group of 31–35 years, while in another similar study, the average age of the ASHAs surveyed was 30 years.[16]

The current study had the majority of ASHAs (134, 89.33%) were married. Similarly, a study by Waskel et al. showed that 193 (93.68%) were married.[17] Most of the ASHAs were Hindu (120, 80%) which is similar to the observations of Dholakia & Bajpai (98%).[18] A maximum number of ASHA employees (45.33%) who completed their higher secondary education while participating in the study, Sagare et al., said of their study participants, 79.07 % have completed studies from grade eight to graduate level.[19] In the present study, we found that most ASHAs had more than six years of experience (38.67%), followed by 29.33% with 1-5 years of experience, and 32% with experience of one year or less. In a similar study by Singh et al., 83% of ASHAs had (83%) more than 3 years of experience in their respective villages.[20]

In this study, we found that there is a lack of knowledge among ASHAs. Although ASHAs know that TB is transmitted by airborne droplets, many (44.66%) of them are unaware that cough and chest pain are the most common symptoms of pulmonary tuberculosis, ignoring NTEP treatment guidelines and side effects of TB treatment. The main reason is the lack of training and support system. Due to insufficient knowledge, ASHAs may not be fully equipped to answer patients' questions about the disease and their treatment. A similar study conducted by Ibrahim et al. showed that there was about 71.1% lack of knowledge found among healthcare workers and were unable to respond the queries of patients about the TB management in their study.[21]

In attitude-wise low response rate on TB management was observed among the ASHAs. Most of the ASHAs (69.33%) disagreed that non-adherence to patient medication occurs due to adverse effects of TB treatment. Many ASHAs (38.67%) disagreed that keeping TB patients in isolated rooms was not safe and also practised not wearing masks while talking to TB patients. A similar study by Mekonnen and Azagew found that the rate of non-adherence to anti-TB treatment was 21.2% because of adverse reactions in the continuation phase. The International Society for Infectious Diseases recommends that every healthcare worker should wear a mask while approaching TB patients and insists that TB patients should be kept in isolated rooms.[22]

In this study, ASHAs showed a good perception response on TB management in which most of the ASHAs (53.33%) accepted that giving education about TB transmission will help in the control of TB and keeping TB patients room in natural ventilation was a good practice. A similar study by Kigozi et al. showed that educating TB patients will help the patient to know about TB transmission and opening windows with good ventilation will prevent the spread of TB. In this study, about 71.33% of ASHAs did not agree that educating about nutrition diet may not be helping in treatment completion.[23] According to nutritional care and support for TB patients in India, it is recommended that counselling the TB patients with a proper nutritional balanced diet will support the TB patients to complete the treatment.[24]

In the community management of TB patients requires a multidisciplinary healthcare team approach. ASHA workers also play a vital role in such teams and are involved in breaking the chain for TB control in the community areas. This study emphasises the significance of continuing education and training programs for ASHA workers to enhance their understanding of TB treatment. Such programs can contribute significantly to boosting their awareness, ultimately enabling them to better promote adherence to TB treatment, effectively manage TB disease control and prevention, and enhance overall community safety.

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202467

Conclusion

The present study indicates that ASHA workers have low knowledge and attitude but good perception regarding TB management. The involvement of ASHAs themselves in disease control programmes was lacking. There is a need to fill this lack by educating ASHA workers periodically which will improve their knowledge. So, it is very important at the district and facility levels to conduct regular training programmes and workshops for ASHA healthcare workers. Better knowledge will translate into better beliefs and acceptance of TB management. Therefore, it will enhance the ASHAs to improve their capacity to provide good healthcare delivery among TB patients.

Acknowledgements

We express our extreme gratitude to the District Tuberculosis Controller Officer (DTO), Belagavi, Karnataka, India who supported us in conducting this training programme. We are also thankful to the ASHA workers of Belagavi district who participated in our study.

Source of Funding: None

Conflict of Interest: None

References

1. Thakur G, Thakur S, Thakur H. Status and challenges for tuberculosis control in India - stakeholders' perspective. Indian J Tuberc. 2021 Jul;68(3):334-9. [PubMed] [Google Scholar]
2. Nahid P, Pai M, Hopewell PC. Advances in the diagnosis and treatment of tuberculosis. Proc Am Thorac Soc. 2006;3(1):103-10. [PubMed] [Google Scholar]
3. World Health Organization [Internet]. Tuberculosis; [cited 2024 Nov 21]. Available from: https://www.who.int/news-room/fact-sheets/detail/tuberculosis
4. Zaman K. Tuberculosis: a global health problem. J Health Popul Nutr. 2010;28(2):111-3. [PubMed] [Google Scholar]
5. Central TB Division [Internet]. [cited 2021 May 13]. Available from: https://tbcindia.mohfw.gov.in//
6. World Health Organization. Health in 2015 from MDGs: Millennium Development Goals to SDGs: Sustainable Development Goals [Internet]. Geneva: World Health Organization; 2015 [cited 2017 May 2]. Available from: http://apps.who.int/iris/bitstream/10665/200009/1/9789241565110_eng.pdf [Google Scholar]
7. Central TB Division. TB India 2013: Ministry of Health and Family Welfare [Internet]. Revised National Tuberculosis Programme; 2014 [cited 2017 May 2]. Available from: https://tbcindia.mohfw.gov.in/annual-reports/3
8. Katiyar SK, Bihari S, Arun S, Rawat T. An analysis of failure of category II DOTS therapy. Indian J Community Med. 2008;33(2):129-30. [PubMed] [Google Scholar]
9. Verma R, Khanna P, Mehta B. Revised national tuberculosis control program in India: the need to strengthen. Int J Prev Med. 2013;4(1):1-5. [PubMed] [Google Scholar]
10. Government of India, National Rural Health Mission (2005-2012) [Internet]. Ministry of Health and Family Welfare, Mission document; [cited 2024 Jul 13]. Available from: https://nhm.gov.in/images/pdf/guidelines/nrhm-guidelines/mission_document.pdf
11. Kishore J. National health programs of India. 11th ed. Century Publications; 2014. p. 81-2.
12. National Health Systems Resource Centre [Internet]. Annual ASHA update 2020 to 2021; [cited 2024 Jul 13]. Available from: https://nhsrcindia.org/annual-asha-update-2020-21
13. National Health Mission [Internet]. ASHA; [cited 2024 Jul 12]. Available from: https://nhm.karnataka.gov.in/page/community+monitoring/asha/en
14. Dwivedi R, Goswami D, Singh P, Singh K. Assessment of knowledge, attitude, practice (KAP) regarding directly observed therapy (DOT) in tuberculosis among ASHA workers from tribal subpopulation zone of Rajasthan. J Family Med Prim Care. 2022;11(11):6783-8. [PubMed] [Google Scholar]
15. National Health Mission [Internet]. Guidelines on Accredited Social Health Activitists (ASHA); [cited 2024 Jul 12]. Available from: https://nhm.gov.in/images/pdf/communitisation/task-group-reports/guidelines-on-asha.pdf
16. Kochukuttan S, Ravindran TK, Krishnan S. Evaluating birth preparedness and pregnancy complications readiness knowledge and skills of Accredited Social Health Activists in India. Int J MCH AIDS. 2013;2(1):121-8. [PubMed] [Google Scholar]
17. Waskel B, Dixit S, Singodia R, Pal DK, Toppo M, Tiwari SC, Saroshe S. Evaluation of ASHA programme in selected block of Raisen District of Madhya Pradesh under the National Rural Health Mission. J Evol Med Dent Sci. 2014;3(3):689-94. [Google Scholar]
18. Dholakia RH, Bajpai N. Improving the performance of Accredited Social Health Activists in India [Internet]. Working Paper Series: Working Paper No 1. 2011; [cited 2012 Sep 10]. Available from: https://www.researchgate.net/publication/265121185_Improving_the_performance_of_Accredited_Social_Health_Activists_in_India_Working_Paper_No_1
19. Sagare SM, Bogam RR, Murarkar SK, Patil UP, Ghate MM. Knowledge, attitude and practices of ASHAs regarding tuberculosis and DOTS. Indian J Sci Technol. 2012;5(3):1-4.
20. Singh AR, Pakhare A, Kokane AM, Shewade HD, Chauhan A, Singh A, Gangwar A, Thakur PS. 'Before reaching the last mile'- knowledge, attitude, practice and perceived barriers related to tuberculosis directly

observed therapy among ASHA workers in Central India: a mixed method study. J Epidemiol Glob Health. 2017;7(4):219-25. [PubMed] [Google Scholar]
21. Ibrahim LM, Hadjia IS, Nguku P, Waziri NE, Akhimien MO, Patrobas P, Nsubuga P. Health care workers' knowledge and attitude towards TB patients under Direct Observation of Treatment in Plateau state Nigeria, 2011. Pan Afr Med J. 2014;18(Supp 1):8. [PubMed] [Google Scholar]
22. Mekonnen HS, Azagew AW. Non-adherence to anti-tuberculosis treatment, reasons and associated factors among TB patients attending at Gondar town health centers, Northwest Ethiopia. BMC Res Notes. 2018 Oct 1;11(1):691. [PubMed] [Google Scholar]
23. Kigozi NG, Heunis JC, Engelbrecht MC, van Rensburg AP, van Rensburg HC. Tuberculosis knowledge, attitudes and practices of patients at primary health care facilities in a South African metropolitan: research towards improved health education. BMC Public Health. 2017 Oct 10;17(1):795. [PubMed] [Google Scholar]
24. National Tuberculosis Elimination Programme [Internet]. Guidance Document – Nutritional Care & Support for TB patients in India; [cited 2024 Jul 14]. Available from: https://tbcindia.mohfw.gov.in/tb-nutrition/

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202467