



UTILIZATION OF NIKSHAY POSHAN YOJANA AMONG TUBERCULOSIS PATIENTS IN AN URBAN SLUM MUMBAI: A CROSS-SECTIONAL STUDY

Community Medicine

Dr Ramalakshmi C S* Senior Resident, Dept of Community Medicine, Lokmanya Tilak Municipal General Hospital and Lokmanya Tilak Municipal Medical College, Sion, Mumbai, Maharashtra, India *Corresponding Author

Dr Shrikala Acharya Professor, Dept of Community Medicine, Seth GSMC & KEM Hospital, Mumbai, Maharashtra, India

Dr Vignesh K Medical Officer, Mumbai, Maharashtra, India

ABSTRACT

Background: The Nikshay Poshan Yojana provides financial aid for nutrition through Direct Benefit Transfer (DBT) to Tuberculosis patients to combat nutritional deficiencies. This study aims to assess the awareness, coverage and utilization of Nikshay Poshan Yojana scheme among Tuberculosis patients in an urban slum. **Materials & Methods:** A facility-based cross-sectional study was conducted among 168 Tuberculosis patients at an Urban Health Training Centre in Mumbai (October-November 2023) using complete enumeration. Data was collected using a pre-designed, validated questionnaire. Quantitative data was analysed for frequency, percentage, and Chi-square test. **Results:** Majority 58.3% participants were females. 47.61% patients were Underweight. Majority (83.3%) patients were aware of the scheme but only 36.9% patients had received DBT. The amount of average INR 2024.59 was received, while 85.4% TB patients spent the amount on purchasing nutritious food items. Egg and Milk were the main supplementary food items purchased. 22.6% patients faced challenges in getting the financial assistance. Migration of patients, lack of bank account, lack of guidance, lack of time, stigma, irresponsible attitude of healthcare workers, multistep approval process was found as the main barriers in utilization of the scheme. **Conclusion:** The coverage of Nikshay Poshan Yojana in urban slum shows huge gap between the need and supply. A majority of patients were unsatisfied with the scheme and proper implementation of services for addressing the barriers in uptake of scheme are needed.

KEYWORDS

Awareness, Nikshay Poshan Yojana, Tuberculosis, Utilization

INTRODUCTION

Tuberculosis (TB) is an ancient human disease caused by *Mycobacterium tuberculosis*.^[1] It was the world's second leading cause of death from a single infectious agent, after coronavirus disease (COVID-19), and caused almost twice as many deaths as HIV/AIDS.^[2] The link between tuberculosis and malnutrition is well-established. Tuberculosis increases nutritional requirements, alters metabolism, and reduces appetite, leading to weight loss and micronutrient deficiencies. Nutritional recovery usually occurs with anti-tuberculous chemotherapy, driven by increased intake, reduced energy demands, or improved substrate utilization.^[3] The Nikshay Poshan Yojana, launched by the Ministry of Health and Family Welfare since 2018, provides Rs. 500 per month via DBT to TB patients registered on the NIKSHAY portal. Payments are made at notification, after intensive phase follow-up, and post-treatment, with additional incentives for treatment extensions, previously treated, and drug-resistant TB patients.^[4] Maharashtra has 60,000 to 70,000 beneficiaries.^[5] In view of less studies related to utilization of Nikshay Poshan Yojana Scheme among Tuberculosis patients in urban slums, this study was planned to find out identify gaps in implementation and utilization of the scheme.

OBJECTIVES

1. To assess the awareness and coverage of Nikshay Poshan Yojana scheme among Tuberculosis patients
2. To assess the utilization of Nikshay Poshan Yojana among Tuberculosis patients.

MATERIALS AND METHODOLOGY

Ethical approval was obtained from the Institutional Ethics Committee. The study was conducted at Urban health Training Centre, situated in Malavani slums under P/N district of Mumbai. The centre has a Tuberculosis OPD, Designated Microscopy centre and DOTS centre for a population of about 1.5 lakh population. A facility based cross-sectional study was conducted among Tuberculosis patients attending Follow-up Tuberculosis OPD in Urban Health Training Centre Malavani, Mumbai, Maharashtra. All Tuberculosis patients who were registered for anti-TB treatment during the year 2023 from Urban Health Training Centre from October 2023 to November 2023 were included in the study. All types of TB patients new, old, pulmonary, and extra pulmonary, both Drug sensitive and Multidrug resistant TB (MDR TB) cases were included. Complete enumeration technique was used as a sampling technique. The total sample size was 168. Patients not enrolled in Nikshay and the patient who did not give

the consent were excluded from the study. Data on demographic profile, clinical profile of the disease, details about benefit under Nikshay Poshan Yojana was collected. All the patients were asked about whether they got financial benefit and how they used the assistance. Informed written consent was obtained first after explaining the purpose of the study and ensuring privacy and data confidentiality. The in-person interview was conducted for 10–15 minutes in the local language (Hindi) starting using Semi-Structured, validated questionnaire on awareness and utilization of the scheme, difficulties encountered, suggestions for improvement. Each patient was given a unique identification number and data were entered in Microsoft excel after verifying the forms for completeness. The data was analysed using SPSS software.

RESULTS

168 patients were registered in this study. 98(58.3%) of participants were female, while 70(41.6%) were male. The socio-demographic data showed out of 168 participants, females predominated in younger age groups, with 38(38.77%) of those ≤ 20 years and 30(30.61%) of those 21–30 years. The maximum proportion of males was in the age group of 20 years or younger, at 17(24.28%). The minimum proportion was in the age group of 41 to 50 years, at 8(11.42%). Majority 36.30% participants had high school education. 14(20%) of males were illiterate, while 20(20.40%) of females were illiterate. In the study, 31 males (44.28%) were unemployed, while 59 females (60.20%) were housewives. Students were also a significant group, with 15 males (21.42%) and 29 females (29.59%) being students. The lowest occupation category among males was craft and related trade workers, with 3 individuals (4.28%). Additionally, one 7-month-old female child was also included in the study. (Table 1)

The socio-economic status calculated using the modified Kuppuswamy scale showed, the majority of participants were from the upper lower socio-economic class, comprising 129 (76.78%) participants. The lower middle class accounted for 20 (11.90%) participants, while the lower socio-economic class included 15 (8.92%) participants. Only 4(2.38%) participants were from the upper middle class.

In the study, the maximum proportion of participants with new tuberculosis was observed among 84 females (85.71%), while the minimum proportion was for old tuberculosis, affecting 14 individuals of both males and females. Regarding TB site, the highest proportion of pulmonary TB was among males, at 75.71%, and the lowest was

extra-pulmonary TB among males, at 24.28%. For drug type, the highest proportion of drug-sensitive tuberculosis (DSTB) was seen among females, with 85.71%, while the lowest was drug-resistant tuberculosis (DRTB) among females, at 14.28%. Regarding BMI, the highest proportion of underweight individuals was among females, at 53.06%, compared to 40% among males. (Table 2)

All patients were linked to the Nikshay portal with their unique Nikshay ID number; yet 140 (83.3%) were aware of the cash incentive provided under the Nikshay Nutritional Scheme. This included 80 females (57.14%) and 60 males (42.85%). [Figure 1]. They got the information from the healthcare workers (100%). Of the patients who were aware of the scheme, only 62 (36.9%) had received financial assistance, while the remaining 78 (55.71%) had not received any funds. The amount of average INR 2024.59 was received. Out of the 62 participants, the majority 52 participants (83.87%) received financial assistance during the intensive phase of treatment, while 10 participants (16.12%) received it during the continuous phase. (figure 2) The median time of the first instalment after diagnosis was 2 months. Similarly, of all the patients who received assistance through the scheme, 48 (77.4%) received without any difficulty, while the remaining 14 (22.6%) encountered challenges in getting the assistance. Among those who received without difficulty, 31 were female (64.6%) and 17 were male (35.4%). Among the 62 patients who received assistance, 23 (37.1%) withdrew it themselves, 15 males (65.2%) and 8 females (34.8%). However, 34 patients (54.8%) relied on their husband or father, or another family member, including 26 females (76.5%) and 8 males (23.5%). Additionally, 3 patients (4.8%) withdrew money with the help of a friend, with 2 males (66.7%) and 1 female (33.3%) seeking assistance in this way. Additionally, 2 patients (3.2%) had their money withdrawn by their neighbours, both of whom were females (100%).

The majority, 53 patients (85.4%), spent the money on purchasing nutritious food, with 33 females (62.3%) and 20 males (37.7%) making this choice. The remaining 9 patients (14.5%) used the funds to fulfil personal and family needs. Egg and Milk were the main food items purchased [figure 3]

When asked about their overall satisfaction with the sufficiency of the assistance during the ATT, 18 patients (29.0%) expressed dissatisfaction. This group included 11 females (61.1%) and 7 males (38.9%). They also agreed to the statement that it was not sufficient to meet their nutritional requirements.

There are a few open-ended questions regarding the barriers encountered while availing the scheme and suggestions for improvement. The data thus collected was analysed by content analysis that threw light on a few major difficulties faced by the patients (Table 3). 24 patients reported issues related to bank account problems, 20 patients mentioned difficulties with multistep approval processes, 16 patients mentioned a lack of knowledge, 12 patients pointed out ignorance, 4 patients experienced unresponsive attitudes from healthcare workers, and 2 patients faced challenges due to migration.

The suggestions given by patients for the improvement of the implementation of scheme were to increase the amount of money, timely incentives, cash incentives on the spot, creating more awareness about this scheme and an effective grievance redressal system.

The Chi-Square test revealed a significant association between gender and the need for a helper to withdraw money from the bank, with a p-value of 0.024. This indicates that gender plays a significant role in determining whether individuals require assistance for bank withdrawals. We found that there was no significant association of age, gender, education, occupation with the utilisation of the scheme.

DISCUSSION

Most of the TB patients were female and belonged to the under-20 age group. This observation is consistent with Takur et al.'s^[6] study, which indicates that adolescent females are more prone to tuberculosis compared to males. Among the patients, 129 (76.78%) were from the upper-lower socioeconomic classes. This aligns with the findings of Jiamsakul et al.,^[7] which highlight a higher risk of tuberculosis among individuals from lower socioeconomic backgrounds. This study found that around 47.61% of patients were malnourished and thus is a matter of concern as we have known that malnutrition adversely affects treatment outcome and compliance of tuberculosis patients.^[8-10]

However, the study by Musuenge et al.^[11] conducted in Burkina Faso, West Africa, found that 35.8% of adult TB patients were undernourished. They identified low food frequency per day as a factor that increases the likelihood of undernutrition. Musuenge et al.^[11] recommend incorporating an assessment of comorbidity and nutritional status into the treatment process for every TB patient. Few other studies have shown malnutrition being more prevalent among TB suspected and confirmed patients in rural India and the importance of addressing the issue properly and in a timely fashion to reduce the morbidity and mortality of TB patients.^[12,13]

Although enrolled in the Nikshay program, 16.66% of patients were still unaware of the nutritional scheme, which is significantly higher than the 8.5% reported by Begum et al.^[14] and the 6% found by Rabeensa et al.^[15] This suggests a greater need for improved patient education and outreach to ensure that all beneficiaries are informed about the scheme's benefits. In our study, all information about the scheme was provided by healthcare workers (TB Health Visitors). In contrast, the study by Tasnim et al.^[16] identified television as the primary source of information on tuberculosis. Of those who were aware of the scheme, only 37% got financial assistance (1st instalment) and that majority 84% got during intensive phase of treatment. Similar results were found in Begum et al.^[14] study, where only 22% of the patients had received at least one instalment of DBT and in Kumar et al study^[17], where only 52.6% of the patients had received at least one instalment of DBT.

Among those who got the incentive, 22.6% faced difficulty in getting the financial assistance deposited in accounts. In Begum et al.^[14] study, 41.2% patients faced difficulty while getting the money. Majority 54.8% of patients drew the money through their husband/father/family member and spent it on buying nutritive foods. Patel et al.^[18] observed that patients used their incentives from the Nikshay Poshan Yojana (NPY) to purchase milk, fruits, and other food items. Similarly, in the study by Begum et al.^[14] 76% of the patients spent the money on buying food.

In our study, barriers to utilizing the Nikshay Poshan scheme included bank account problems, difficulties with multistep approval processes, lack of knowledge, ignorance, unresponsive attitudes from healthcare workers, and challenges due to migration. Similarly, Jarina Begum et al. (2020) highlighted challenges like illiteracy, stigma, technical delays, and complex approval processes. Nirgude et al.^[19] study also noted delays due to multi-layered approvals, paper-based documentation, and technological issues with the NIKSHAY and Public Financial Management System (PFMS) portals.

CONCLUSION

Although the NPY scheme was initiated to support the nutrition of the TB patient, there was a large gap identified between the demand and supply chain of services in urban slums. A majority of patients were unsatisfied with the scheme and proper implementation of services for addressing the barriers in uptake of scheme are needed.

Recommendations

Community Level

At the community level, focus on capacity building of healthcare workers, reducing stigma among the community through awareness campaigns and educational programs, and implementing initial sensitization for newly diagnosed TB patients. Seek the help of digital media and community health workers to enhance outreach and support.

State Level

At the state level, focus on training of healthcare workers and educating all stakeholders involved with the scheme. Additionally, ensure that healthcare workers are well-informed about the scheme to improve its implementation and effectiveness.

National Level

At the national level, establish a linkage of patients with the Jan Dhan Yojana, provide a direct communication desk or toll-free number for addressing scheme-related issues, and implement an effective grievance redressal system. Ensure technical advancements with upgraded software and reliable internet, and maintain a smooth flow of funds with regularity and timely instalments.

Limitations

Small sample size

Financial Support and Sponsorship

Nil.

Conflicts of Interest

There are no conflicts of interest.

Table 1: Socio-demographic Details of TB Patients (n=168)

S.no	Variable	Criteria	Male		Female	
			Freq	%	Freq	%
1.	Age	≤ 20	17	24.28	38	38.77
		21 to 30	14	20	30	30.61
		31 to 40	12	17.14	10	10.20
		41 to 50	8	11.42	6	6.12
		51 to 60	9	12.85	10	10.20
		More than 60	10	14.28	4	4.08
		Total	70	100	98	100
2.	Education	Illiterate	14	20	20	20.40
		Primary school	10	14.28	13	13.26
		Middle school	19	27.14	15	15.30
		High school	21	30	40	40.81
		Intermediate / diploma	4	5.71	2	2.04
		Graduate	2	2.85	8	8.16
		Total	70	100	98	100
	Occupation	Unemployed	31	44.28	89	90.81
		Elementary occupation	12	17.14	3	3.06
		plant and machine operators, assemblers	16	22.85	0	0
		craft and related trade workers	3	4.28	3	3.06
		skilled agricultural and fishery workers	0	0	0	0
		skilled workers and shop and market sales workers	7	10	3	3.06
		Total	70	100	98	100

Table 2: Clinical Profile Details of TB Patients (n=168)

S.no	Variable	Criteria	Male		Female	
			Freq	%	Freq	%
1	Type of TB	New	56	80	84	85.71
		Old	14	20	14	14.28
		Total	70	100	98	100
2	TB site	Pulmonary	53	75.71	67	68.36
		Extra pulmonary	17	24.28	31	31.63
		Total	70	100	98	100
3	Drug type	DSTB	50	71.42	84	85.71
		DRTB	20	28.57	14	14.28
		Total	70	100	98	100
4	BMI	Underweight	28	40	52	53.06
		normal	35	50	38	38.77
		Overweight	7	10	6	6.12
		obese	0	0	2	2.04
		Total	70	100	98	100

Table 3: Barriers in Utilization of Scheme (n=78)

Theme	Category	Codes	Number
Bank account problems	➤ Lack of bank account,	➤ Entered wrong details, forgot the bank account details,	24
	➤ Late submission	➤ Bank account got rejected.	
Multistep approval	➤ Unapproved by govt	➤ Did not get approved by the govt	20
	➤ Technical issues		
Knowledge	➤ Illiteracy	➤ Don't know how to check in mobile and bank	16
	➤ Stigma	➤ Shy to ask about money	
Ignorance	➤ Lack of time	➤ No time to check bank account	12
	➤ Negligence		
Irresponsive attitude of healthcare workers	➤ Lack of Communication	➤ Health care professional not responsible to answer	4
	➤ Lack of guidance		

Migration of patients	➤ Transferred In patients	➤ Transferred process is going on	2
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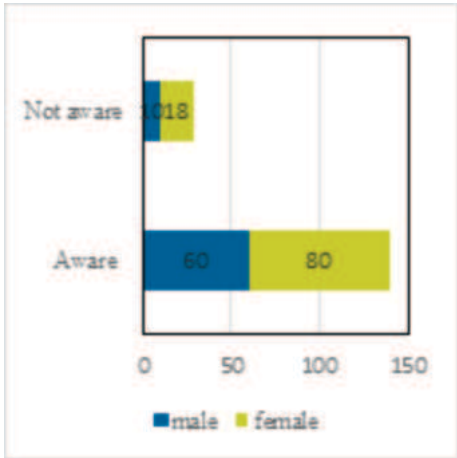


Figure 1 – Awareness of Cash Incentive Scheme (Nikshay Poshan Yojana)

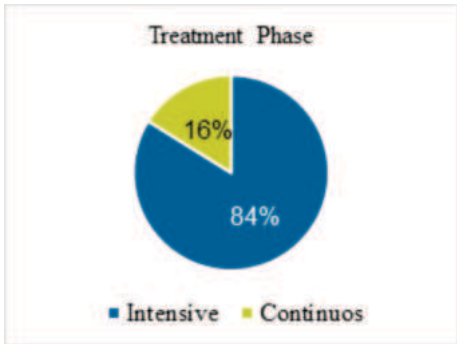


Figure 2: Treatment Phase of 1st Instalment (n=62)

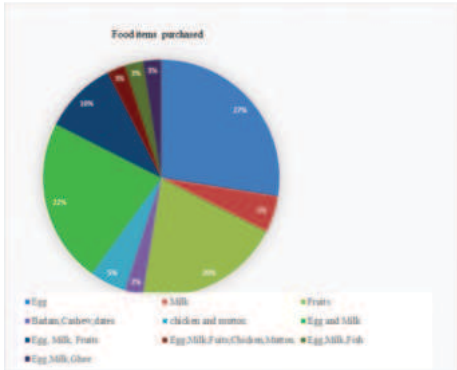


Figure 3: Food Items Purchased (n=53)

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