

A STUDY ON THE UTILIZATION PATTERN OF MONETARY BENEFITS IN RELATION TO NUTRITION AND TREATMENT OUTCOME AMONG THE NEWLY DIAGNOSED DRUG SENSITIVE TB PATIENTS OF GADAG DISTRICT, KARNATAKA,-A MIXED METHOD STUDY

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Abstract

Background: Tuberculosis remains one of the top 10 causes of death worldwide, with the highest burden of disease in low- and middle-income countries¹ India alone shoulders a quarter of this global TB burden, with 28 lakh active infections and 423,000 deaths occurring annually.. India's tuberculosis incident for the year 2021 is 210 per 1,00,000 population compared to the baseline year of 2015 there has been 18% decline. These figures also place India at the 36th position in terms of incidence rates. The objective is to assess number and proportion received Direct Benefit Transfer (DBT). To measure utilization pattern of monetary benefits with respect to nutrition, To determine the enabling and hindering factors in nutritional support under NPY as perceived by patients and health care providers. **Materials and Methods:** Mixed method study. Which includes cross sectional study as quantitative method and in-depth interviews with patients and health care providers as qualitative method. Period based (six months) all eligible newly diagnosed TB patients notified during June to Dec 2023. **Result:** Majority of study subjects were in the age group of 30-50yrs (60%) males, residing in urban areas (53%), belonging to SES middle (40%) and lower mid class (35%). Out of which 390 patients had completed the treatment, 128 patients are ongoing treatment, it was found that 70.3% patients used it for nutrition purpose saying they purchased milk.egg/meat/pulses, protein powder. To fulfil their protein rich diet. **Conclusion:** Tuberculosis is still persistent prevailing health problem in middle and lower income groups.

INTRODUCTION

A compromised nutritional status increases susceptibility to the disease, delays recovery, and can even contribute to death among TB patients. TB, in turn, reduces appetite and induces wasting among patients. Malnourishment in TB patients doubles the likelihood of death due to the disease.^[1-5]

In a study conducted by Samuel B on relationship between Nutritional support and Tb Treatment outcomes in West Bengal, Out of 173 TB patients provided nutritional support, 15 (9%) had unsuccessful treatment outcomes, while 84 (21%) of the 400 not provided nutrition support had unsuccessful treatment outcomes (p < 0.001). Those who received nutritional support had a 50% reduced risk of unsuccessful treatment outcome than those

who did not receive nutritional support (Relative Risk: 0.51; 95% Confidence Intervals: 0.30 - 0.86).^[6] Additionally, higher risk of TB relapse and TB related death is predicted by undernutrition at the time of active TB diagnosis.^[7] In this context, the National Strategic Plan 2017-25 (NSP), shaped by WHO's End TB Strategy and the Sustainable Development Goals (SDGs) agenda framework blends health and social interventions.^[2] In addition to advancing existing programme components (case detection, diagnostics, drugs), the NSP introduced , Patient Support Systems (PSS) to support patients during the treatment period with the provision of incentives, nutrition support as well as creating linkages to other social welfare programmes. The Ministry of Health and Family Welfare, Government of India has announced the scheme for incentives for

nutritional support to TB patients- “Nikshay Poshan Yojana”(NPY). Under this scheme all TB patients notified on or after 1st April 2018 including all existing TB patients under treatment are eligible to receive incentives of Rs.500 per month towards nutrition till the completion of treatment .The first incentive is paid out immediately after notification, the second is paid out after the results of the intense phase follow-up, and the third is paid out after the results of the six-month treatment follow-up.^[1]

Our study aims to assist national tuberculosis (TB) programs with this new policy direction by providing them with an overview of concepts used in the social protection sector and by reviewing some of the critical operational aspects associated with the implementation of cash transfer interventions among the beneficiaries. Which includes, challenges associated with provision and Proper utilization of incentives for nutrition and its outcome, Incorporate beneficiary prospective in the current strategy and to study the disease outcome.

Objectives:

- To assess number and proportion received Direct Benefit Transfer.(DBT)
- To measure utilization pattern of monetary benefits with respect to nutrition
- To determine the enabling and hindering factors in nutritional support under NPY as perceived by patients and health care providers.

MATERIALS AND METHODS

- Study design: Mixed method study. Which includes cross sectional study as quantitative method and In depth interviews with patients and health care providers as qualitative method.
- Sampling method: Purposive convenient sampling
- Study duration: Period based (six months) all eligible newly diagnosed TB patients notified during June to Dec 2023.

Sample Size

- A total of 7 TUs are functioning under Gadag District TB centre (NTEP). All eligible newly detected TB patients notified during June to December 2023 from the 7 functional TUs will be taken for the study. As per the data collected from district TB center Gadag, In the year 2023(January to December), A total of 1527 cases have been reported out of which 1353 were found to be new cases among that 1028 were newly diagnosed pulmonary TB cases. In our study period of 6 months (June to December),newly diagnosed cases of pulmonary TB were found to be 577 cases after excluding the pediatric(37) cases our sample size is 540.

Inclusion Criteria

All eligible newly diagnosed Drug Sensitive TB patients notified during June to Dec 2023.

Exclusion Criteria

Treatment failure and relapse cases are excluded. Extra –pulmonary Tb cases. And TB associated with other co-morbidities are excluded

Data Collection

- The primary data will obtained using the semi structured questionnaire, to the newly diagnosed drug sensitive TB patients coming for follow up to GIMS, hospital and respective taluka level health care centers. The secondary data will be collected from the clinical records & reports of the relevant clinical investigations done on respective patients in including NIKSHAY portal.
- Analysis plan: The data will be entered in excel sheet and analyzed using SPSS software using chi-square as test of significance to know the p-value and content analysis for qualitative data

RESULTS

Sociodemographic Profile of Study Participants

A total of 540 newly diagnosed drug sensitive TB patients were enrolled in our study as study participants and their sociodemographic data was obtained from nikshaya portal. Majority of study subjects were in the age group of 30-50yrs(60%) males, residing in urban areas(53%),belonging to SES middle(40%) and lower mid class(35%). With respect to education morethan half study subjects are literates, Hindu (71%) by religion and working as labourers (40%), farmers (30%) and professionals (25%). Almost all the patients (93%) opted government sector for treatment & management.

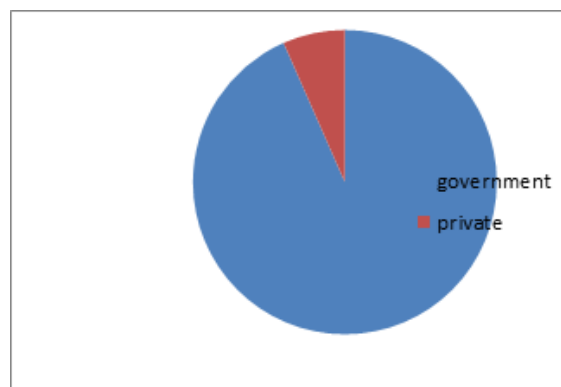


Figure 1: Treatment Sector

[Table 2] showing A total of 540 patients were registered during our study period as per the NIKSHAYA Portal app, among that 528 patients where included as our study subjects with their consent. Out of which 390 patients had completed the treatment, 128 patients are ongoing treatment and 7 patients were loss to follow-up and three have died during study period.

In the above [Table 3] showing direct benefit transfer status, out of 390 patients who have completed treatment, have received complete amount (Rs.3000) 76.6%. Same with respect to patients who are

ongoing treatment (75.7%). study patients upto 10% of have not received any DBT in both treatment groups.

In the [Table 4] showing utilisation patterns among those 465 study subjects who received DBT, it was found that 70.3% patients used it for nutrition purpose saying they purchased milk.egg/meat/pulses, protein powder. To fulfil their protein rich diet and

6% used it for other purposes not clearly able to recall.

The above [Table 5] showing the reasons for not able to receive money under nikshaya poshan abhiyan are categorised into two, program error consisting of 40% and patient error upto 60%,among the patient errors it was lack of awareness among the patients and no appropriate bank account were major reasons.

Table 1: Sociodemographic profile.

Variables	Category	Frequency (N=540)	Percent
Age group	18-30yrs	104	19.20
	31-42yrs	182	33.70
	43-54yrs	146	27.00
	55-66yrs	64	12.00
	>66yrs	44	8.10
Sex	Male	364	67.40
	Female	176	32.59
Religion	Hindu	384	71.64
	Muslim	106	28.36
	Others	50	9.20
Education	Literate	360	67.00
	Illiterate	180	33.30
Occupation	Professionals	137	25.30
	Farmers	159	29.40
	Labors	220	40.70
	Unemployed	24	4.40
Type of family	Nuclear	196	36.20
	Joint	248	45.90
	3-Generation	96	17.70
Address	Rural	250	46.29
	Urban	290	53.70
Socio-Economic Status (modified BG Prasad classification)		N=540	
Upper Class		22	4.2
Uppermiddle Class		69	13.3
Middle Class		209	40
Lower Middle Class		181	35
Lower Class		119	22.9

Table 2: Treatment Outcomes

Registered TB case	N=540
Study participants	528(97.7)
Wrong mobile num/switched off	12(2.3)
Treatment Outcome	n=528
Treatment complete	390(73.8%)
Ongoing treatment	128(24.2%)
Loss to follow up	7(1.3%)
Death	3(0.5%)

Table 3: Direct Benefit transfer status.

	N=518
Treatment completed	n=390
Received completely (Rs 3000)	299(76.6%)
Partial incentives (Rs.1000- Rs.1500)	69(17.6%)
No incentives	22(5.6%)
On Going Treatment	n=128
Partial(Rs.1000-Rs.1500)	97(75.7%)
No incentives	31(24.2%)
(Total patients not received DBT=22+31)	53, (10%) of 518

Table 4: Utilisation pattern

Among who received incentives	n -465	100%
UTILISATION PATTERN		
Nutrition	327	70.3
Personal	76	16.3
Family	33	7.2
Others	29	6.2

Table 5: Reasons for not receiving DBT

REASONS FOR NOT RECEIVING DBT	53	100%
Program error	n=21	40%
System Error/Portal Error/Process error	3	5.6
Delay In Fund Release/No Funds	11	20.7
Patient Details Not Matching In Portal	7	13.2
Patient Details Not Entered In Portal	0	0
Patient error	n=32	60.30%
Patient not aware	13	24.5
Patient with no bank account	11	20.7
Patient reluctant	8	15

DISCUSSION

The role of nutrition is very crucial in, Malnourishment in TB patients doubles the likelihood of death due to the disease.^[5] In this context, the National Strategic Plan 2017-25 (NSP), shaped by WHO's End TB Strategy and the Sustainable Development Goals (SDGs) agenda framework blends health and social interventions. The NTEP is now working on a plan to end tuberculosis by 2025.^[4]

Keeping these things in mind we conducted the above study and obtained following results, Majority of study subjects were in the age group of 30-50yrs (60%) males, residing in urban areas (53%), These findings were similar with the study results by rabseena et al,^[8] showing males 75 (65%) were affected more which was same in studies conducted by Begum et al,^[9] and Horton et al,^[10] which showed 63.8% males being affected by tuberculosis.^[8,9]

In our study patients belong to middle (40%) and lower mid class (35%) SES, same as results from rabseena et al,^[8] and research study conducted by Muniyandi et al showed TB prevalence was significantly higher among people living in middle and lower socioeconomic group,^[11] but there was a contrast findings about SES in study conducted by begum et al found 83.1% patients belonged to upper lower according to modified Kuppaswamy scale. Proving it that tuberculosis is still persistent prevailing health problem in middle and lower income groups.

Table 02 showing A total of 540 patients were registered during our study period as per the NIKSHAYA Portal app,^[12] subjects whose contacts details were incorrect, remaining 528 patients were included as our study subjects with their consent. Out of which 390 patients had completed the treatment, 128 patients are ongoing treatment and 7 patients were loss to follow-up and three have died during study period.

In the table 03 showing Direct benefit transfer status, out of 390 patients who have completed treatment, those who have received complete amount (Rs.3000) are 76.6%. Same with respect to patients who are ongoing treatment (75.7%). Overall, 771 (42.2%) patients had received at least one instalment of DBT, 578 (75.0%) of whom received all instalments as noted in study by Patel BH, et al. Similar results were found in study by rabseena et al,^[8] 83 participants (71.5%) got incentives in full or in part, Kumar et

al,^[13] stated 52.6% had received the Nikshay Poshan Yojana (NPY) for two months, in contrary to findings in study by Begum et al,^[9] found that 22.4% of participants had money deposited while the remainder 77.6% had not received any money, Whereas In Our Study 53(10%) study patients of have not received any DBT in both treatment groups. Coming to the reason for not receiving DBT are grouped into program error accounted to 40% and patient errors 60%,delay in fund release(20.4%) and patient unaware of scheme(24%) similar to study by Rabseena et al,^[8] 14 (42%) did not know whom to contact regarding the process of the Nikshay scheme ,no appropriate patient bank accounts (20%) where the most common reasons in our study which was same as study by conducted by Kumar et al,^[13] and by Prakash et al,^[14] where 21 individuals did not enlist owing to a lack of information, a lack of time, or a lack of a bank account.^[1,13,14]

This points to the importance of creating awareness about the nikshay poshan abhiyan by case workers and field level staffs, stating that that the system had an 81.4% participation rate by study conducted by Prakash et al.^[14]

In the [Table 4] showing utilisation patterns among those 465 study subjects who received DBT, it was found that 70.3% patients used it for nutrition purpose saying they purchased milk.egg/meat/pulses, protein powder. To fulfil their protein rich diet, 16% used it for personal use,7% used it for family and 6% used it for other purposes not clearly able to recall.^[15]

CONCLUSION

Tuberculosis is still persistent prevailing health problem in middle and lower income groups. There is need for Creating of awareness among patients with respect to the nikshay poshan abhiyan, addressing the program and patient errors. More of operational research needs in aspects associated with the implementation of cash transfer interventions among the beneficiaries leading to treatment adherence and better outcomes.Taking a step closure towards the NTEP plan to end tuberculosis by 2025.

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