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TREATMENT OUTCOME OF TUBERCULOSIS PATIENTS IN SUDDHODHAN RURAL MUNICIPALITY, RUPANDEHI, NEPAL: A CROSS-SECTIONAL STUDY

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Abstract

Introduction: Tuberculosis (TB) is a public health problem in Nepal that affects thousands of people each year and is the sixth leading cause of death in the country. The objective of study was to find out the treatment outcome of the tuberculosis patient of Suddhodhan rural municipality.

Methods: Descriptive cross-sectional study design was used in study. The study was done in Suddhodhan rural municipality, Province no.5, Rupandehi District. 110 Patient who had undergone DOTS treatment were study unit.

Results: The finding of this study showed that majority of patients was not cured i.e. 92.7% and only 7.3% of patients were cured in this study. In this study the patient from nuclear family was statistically significant with the positive treatment outcome (p=0.000)

Conclusions: Although DOTS is most successful programme in treatment of TB in Nepal. Most of patient undergoing treatment was not fully cured.

Key Words: Tuberculosis, Outcome, Patients

INTRODUCTION

Tuberculosis (TB) is a public health problem in Nepal that affects thousands of people each year and is the sixth leading cause of death in the country .[1]

TB mortality is unacceptably high given that most deaths are preventable if proper diagnosis and treatment are provided. [2]

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The Directly Observed Treatment Short Course (DOTS) has been implemented throughout the country since April 2001. The NTP has coordinated with the public sector, private sector, local government, I/NGOs, social workers, educational institutions and other sectors to expand DOTS and sustain the good progress achieved by the NTP. There are 4,344 DOTS treatment centers in Nepal. [3]

The objective of study was to find out the treatment outcome of the tuberculosis patient of Suddhodhan rural municipality, Rupendehi district.

METHOD:

- Study Design: Descriptive Cross Sectional
- Place and duration of study: Suddhodhan rural municipality lies in Province no.5, Rupandehi District. This rural municipality office is located at Maanpakadi. Data was collected during four weeks of period of data collection.
- Ethical approval and Patient consent: Ethical Approval taken from NHRC and IRB of Yeti Health Science Academy. Informed consent was taken from respondent before data collection.
- Inclusion and exclusion criteria: Patient and patient's data that were available at DOTS center and who interested to involve in study were taken for study
- Sample Size and sampling technique: 110, Purposive sampling technique was used for Patient who had undergone DOTS treatment.

DATA COLLECTION TOOLS AND TECHNIQUE:

Semi-structured questionnaires were used as a tool to find out the treatment outcome of tuberculosis patient of Suddhodhan Rural Municipality Rupandehi. Face to face interview with tuberculosis patient was done for the study. The data was collected at Lumbini Zonal Hospital Rupandehi. The data was collected by researcher self for the study.

DATA ANALYSIS

The collected data was checked immediately and editing to minimize possible error and to maintain consistency in the data. Coding was done after all necessary data was collected completely which helped to analyze the data. Microsoft excel, SPSS 16 was used for data entry and analysis of data.

RESULT

Table 1 depicts that only 16.4 percentage of respondents were illiterate. One third of respondents were homemaker. Near to three fourth of respondents i.e 72.7 % were from nuclear family.

TABLE 1: Distribution of socio-demographic characteristics N=110

Socio-demographic variables	**Frequency (%)**
Age	
1-10	4(3.6%)
11-20	13(11.8%)

21-30	35(31.8%)
31-40	19(17.3%)
41-50	14(12.7%)
51-60	6(5.5%)
60 above	19(17.3%)
Education status	
Illiterate	18(16.4%)
Primary	24(21.8%)
Secondary	43(39.1%)
Higher secondary	16(14.5%)
University	9(8.2%)
Occupation	
Homemaker	32(29.1%)
Service	24(21.8%)
Agriculture	21(19.1%)
Labour	5(4.5%)
Others	28(25.5%)
Religion	
Hindu	87(79.1%)
Buddhism	16(14.5%)
Muslim	7(6.4%)
Ethnicity	
Brahmin	29(26.4%)
Chhetri	35(31.8%)
Jjanjati	31(28.2%)
Dalit	8(7.3%)
Muslim	7(6.4%)
Type of Family	
Nuclear	80 (72.7%)
Joint	30(27.3%)
Income source	
Agriculture	52(47.3%)
Business	28(25.5%)
Foreign employment	30(27.3%)

TABLE 2: Category of tuberculosis patients

Majority of patient were new cases of TB i.e 97.3%. More than half of respondents were smear positive i.e 54.5%.

N=110

Category of TB patients	Frequency(Percentage)
New case	107(97.3%)
Retreatment case	3(2.7%)
Type of TB	

Smear negative TB	1(0.9%)
Smear positive TB	60(54.5%)
Extra pulmonary TB	49(44.5%)

TABLE 3: Treatment outcome of respondents

Table 3 depicits that Majority of patients' i.e 92.7 were not cured fully.

N=110

Variable	Frequency(percentage)
Cured	8(7.3%)
Not	102 (92.7%)

TABLE 4: Association of outcome with selected sociodemographic variables

Table 4 depicts that patient from nuclear family were statistically significant with positive treatment outcome.

N=110

	Variables	**Outcome**		P
*Sex	Male	Cured	Not cured	0.368
	Female	6	62	
		2	39	
Family Type				
	Nuclear	18	62	**0.000**
	Joint	18	12	

TABLE 5: Respondent exposure to side effect of tuberculosis drug

Table 5 depicits that only 52 patient experience the minor side effects of TB medicine.

N=52

Side Effect	Frequency (percentage)
Vomiting	27(24.5%)
Epigastric	14(12.7%)
Rashes	10(9.1%)
Headache	1(0.9%)

TABLE 6: Time to reach health centers from home for tuberculosis treatment

Table 6 depicts that distance between home and DOTS centre had no association with treatment outcome.

N=110

Distance	Infections Yes	 No	P value
Within 30 min	36	69	0.132
Within 20 min	0	5	

DISCUSSION

This study shows that most of the respondents were in age group 21-30 years (31.8%) followed by 31-40 years (17.3%).and 60 years above (17.3%). Meanwhile more than 31.88% are of 41-50 years of age following with (12.7%) of 51-60 years of age. The mean age is 34. The percentages of female respondents were high (59.42%) as compared to male respondents (40.58%). The percentage of the respondents studied up to secondary level was 39.1 % while 21.8% respondents studied up to primary level, respondents studies up to higher level 14.5% and university level 8.2%. The percentages of illiterate respondents were 16.4%. The study conducted in India has the different findings than the current study .The majority of the respondents on this study were 21-30 years of age. [1]

More than half of the respondents were homemaker (29.1%) and rest of them were involve in some agriculture, business, service and labour (19.1%), (25.5%), (21.8%) and (4.5%) respectively. More than 57.12% respondents were of Brahmin and Chhetri whereas remaining were Janajati, muslim and Dalit community (28.2%), (6.4%) and (7.3%) respectively. More than (79.1%) respondent followed Hindu religion whereas others followed muslim and Buddhist religion (6.4%) and (14.5%) respectively.

With regards to type of family, near to three fourth of the respondents i.e.(72.7%) were from nuclear family and (27.3%)were lived in joint family .The main source of income was agriculture (47.3%),business (25.5%) and foregin employ (27.3%). With regards to economic condition of family, most of them were able to give their children basic needs for survival.

About three fourth of respondents i: e.79.1% belongs to Hindu religion. Only 8.2% of the respondents had university level education where as 39.1% of respondents have lower secondary level of education. Near to half percentage of the respondents were housewife and only 25.5% were students. About three fourth of the respondents i:e 72.7% belongs to nuclear family.

Assessment of anti –tuberculosis treatment outcome as well as analysis of factors responsible for poor treatment outcome is one of the major indicators for the evaluation of the performance of a national TB program. In this study the successful treatment outcomes of all type of Tb which target is lower than WHO target.

Majority of patients were not cured i.e. 92.7% and only 7.3% of patients were cured in this study. The finding is consistent with the study entitled “Treatment outcome of tuberculosis patients under directly observed treatment in Addis Ababa, Ethiopia” 18.1% were reported as being cured. [4]

The finding is consistent with the study done in India entitled Unacceptable treatment outcomes and associated factors among India's initial cohorts of multidrug-resistant tuberculosis (MDR-TB) patients under the revised national TB control programme (2007-2011): Evidence leading to policy enhancement of 2264 patients, 781 (34.5%) had treatment success, 644 (28.4%) died. [5]

The finding is inconsistent with the study done in Nepal in 2078 where overall, 87.5% of the patient had successful TB treatment, and 5.3% patient died. [6]

In this observation TB type was associated with unsuccessful treatment outcome. The characteristics of TB patients associated with unsuccessful treatment outcome during anti-Tb

treatment were being smeared negative pulmonary TB, and Extra pulmonary TB. This could be due to the treatment outcome monitoring of smear positive pulmonary TB patients and by testing Sputum result at 2nd, 5th and 7th month in addition to clinical progression of the patients but monitoring the treatment outcome of patients having smear negative pulmonary TB and Extra pulmonary TB were higher compared to smear positive pulmonary TB which could be another possible justification for unsuccessful treatment outcome.

The finding of this study showed that treatment category was associated with unsuccessful treatment outcome especially for patient who were treatment previous one study stated that undergoing treatment was found to be a significant risk factor for unsuccessful treatment outcome. Thus the high proportion of unsuccessful treatment outcome in retreatment cases in this study could be related to prior suboptimal therapy and drug resistance.

At government facilities in Nepal, only group A treatment centers achieved World Health Organization global targets for cure. Group B treatment centers showed better outcomes than unsupervised therapy but did not achieve cure targets. Rapid low cost assessments to collect data that are not routinely reported can improve the evaluation of program aspects such as supervision strategies.

In this study only 24.5% of patient had vomiting, 12.7% of patient had epigastric pain. The finding is consistent with the similar study done in India where gastrointestinal symptoms like Anorexia, Vomiting, Nausea, abdominal pain were the most commonly reported (Asati,2016).

The finding is consistent with the study done in Pune,India, gastrointestinal intolerance, arthralgia & itching with or without rashes were most common ADRs (incidence rates: 12.67%, 2.67% and 2.67%, respectively). [7]

The patient from nuclear family was cured from TB and is statistically significant in this study.In this study the patient from nuclear family was statistically significant with the positive treatment outcome.

LIMITATION:

Study was limited to only Suddhodhan Rural municipality Rupandehi, so generalization is not possible.The study was conducted in limited time and resources of researcher.

CONCLUSION

This study was conducted to determine the treatment outcome of tuberculosis among infected patients. Despite of DOTs programme in Nepal the treatment outcome of patient were poor. Only few patients had only minor side effects of TB medicine. The continuous monitoring of patients undergoing DOTS treatment is necessary along with awareness programme on drug compliance.

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