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Research Article

**HEALTH FACILITIES TO THE TUBERCULOSIS PATIENTS
AT NISHTER HOSPITAL MULTAN**¹Noor-ul-Huda, ²Musfra Maham, ²Dr. Mussarat Sharif¹Sir Ganga Ram Hospital²Allied Hospital Faisalabad**Abstract:**

Tuberculosis (TB) is a communicable disease caused by Mycobacterium tuberculosis (MTB). Developing countries are facing mortality rate as higher as 95% due to MTB. MTB prevalence in adults is more common. The children, elderly and teenagers are also at risk of developing MTB. Tuberculosis patients are at high risk of mortality. It is among top 5 dangerous diseases of the world due to the reason of warranting greater deaths in females of ages between 15-44 years. The mortality rate for MTB has reduced to 47% from 1990 till 2015.

Objective: The objective was to highlight the demographic parameters associated with Tuberculosis at Nishter Hospital Multan. **Methods:** The design of the research was cross-sectional and performed in OPD of Chest Medicine at Nishter hospital Multan. The duration of the study lasted for 6 months from Jan 2018 to Jun 2018. The patients consented before the start of the research. The study comprised of 1120 patients from different locations of Punjab. Simple random sampling technique employed for sample selection. The SPSS-22 software was used for the analysis of the data. **Results:** A total of 1120 subjects participated in the research. The mean age of the selected sample was 33 ± 16.76 years with an age range of 15-100 years. The number of male and female participants were 529(47.23%) and 591(52.77%) respectively. The age group of 15-24 was the most common group that contained 473(42.23%) cases. The frequency of the disease and the age of the patients had an inverse relationship irrespective of the gender. The distribution of age in both genders was almost the same. Most of the cases were from Lahore 830(74.11%) cases whereas the rest were from other places (25.895%). The literacy rate of the patients was slightly different in connection to gender distribution (48.96% in males and 38.92% in females). The patients with 10,000 or less monthly income were 37.24% males and 52.79% females. Some patients had their monthly income between 10,000 and 30,000 (34.82% males and 25.04% females). The males (38.75%) and females (44.84%) were from the lower class. The number of new cases during the research was 116 whereas 1004 patients paid to follow up visits. The patients with extrapulmonary tuberculosis (754 cases) outnumbered the patients with pulmonary tuberculosis (PTB) which were 366 cases. **Conclusion:** The research concluded that the majority of the cases were from Lahore 830(74.11%) whereas a nominal number of cases were from other cities (25.895%). The patients showed improvement after the treatment. The study noticed the pulmonary lymph node as the most common site involved in TB patients.

Keywords: Mycobacterium tuberculosis, Pulmonary tuberculosis, Silicosis, HIV and Extra-pulmonary tuberculosis.

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INTRODUCTION:

Tuberculosis (TB) is a disease which develops due to *Mycobacterium tuberculosis* (MTB) [1]. Tuberculosis, according to WHO, had divided into two categories i.e. pulmonary tuberculosis (PTB) and extra-pulmonary tuberculosis (EPTB) which involve other organs besides the lungs. TB is a communicable disease whose germs can easily transfer from one person to other. The patient sneezing, coughing or spitting allows the germs to travel through the air to the potential host causing the transfer of the disease. All age groups are at risk especially the adults in their most productive age have suffered from this disease. The mortality rate of developing countries due to TB is alarming (95%). The TB which causes the lungs to malfunction is referred as Pulmonary Tuberculosis (PTB), whereas, if other parts except lungs are affected, it is referred to as Extra Pulmonary Tuberculosis (EPTB). PTB and EPTB can exist in a patient simultaneously. The Tuberculosis indications might include temperature, sweating, no or low hunger, lethargy and nail deformation/clubbing [4].

Tuberculosis is the most transmissible disease with approximately 95% mortality rate in developing countries. TB effected 1 mil children in 2014 causing 140000 deaths. The HIV/AIDS patients also suffered from TB in 2015. Every 3rd patient of HIV/AIDS faced death due to TB. However, the occurrences of TB are continuously falling since 2015 and have decreased by 18% since 2000. The mortality rate has reduced to 50% from 1990 to date. Many lives saved due to timely diagnosis and treatment. The researchers performed this cross-sectional study at the Department of Chest Medicine's OPD at a public sector health facility at Lahore. The research lasted for 6 months (from 1 Jan 2017 to 30 Jun 2017). Written approval from all the adult patients obtained in favour of the research. The sample consisted of 1120 patients from all over the province of Punjab. The patients' information recorded after receiving a questionnaire filled by each patient. The doctor conducted the patients' interview and the information updated. We interpreted the data by using SPSS (Ver. 22) for statistical analysis.

RESULTS:

The mean of the ages for the patients in current research was 33 ± 16.76 with an age range of 15 - 100 years. The patients' categorization according to age groups was as follows; 25% cases were < 20 years, 50% of cases were < 27 years and 75% of the cases were < 45 years. The age group 15-24 was most significant with the prevalence of 473(42.23%) Tuberculosis cases. The age group 25-34 had

228(20.36%) cases whereas 138(12.32%) cases observed in 35-44 years' age category. Similarly, 117(10.45%) cases were 45-54 years old, 84(7.5%) cases lied in the age range of 55-64 years of age and 80(7.14%) cases were > 65 years. Out of total 1120 patients, the males and females were 529(47.23%) and 591(52.77%) respectively. The male to female ratio was lower in our set up.

There existed an inverse relationship between the age of the patients and the prevalence of the disease. Only a few cases seen at the age of 60 or above. The age distribution of gender was not normal as concluded by the 'Z' test (One-Sample Kolmogorov-Smirnov). To find out the median Mann Whitney U test conducted for the comparison of medians (IQR). The test produced that the median of the age for the males was greater than females (30 ± 27 years for males and 26 ± 21 years for females with a p-value = 0.001). Only one forth cases were from outside Lahore, rest of the cases (74.11%) belonged to Lahore. The males and females from Lahore were 68.05% and 53.47% respectively whereas 31.95% males and 36.37% females were from other places. The literacy rate of the sample according to gender was 22.65% males and 28.43% females. The patients' monthly income had divided into 3 categories; below 10,000, between 10,000 and 30,000 and 30,000 to 1 lac. Most of the patients were from the low-income group (38.75% males and 44.84% females from lower class, 34.22% males and 36.04% from lower middle class, 27-03% males and 19.12% females were from upper middle or upper class).

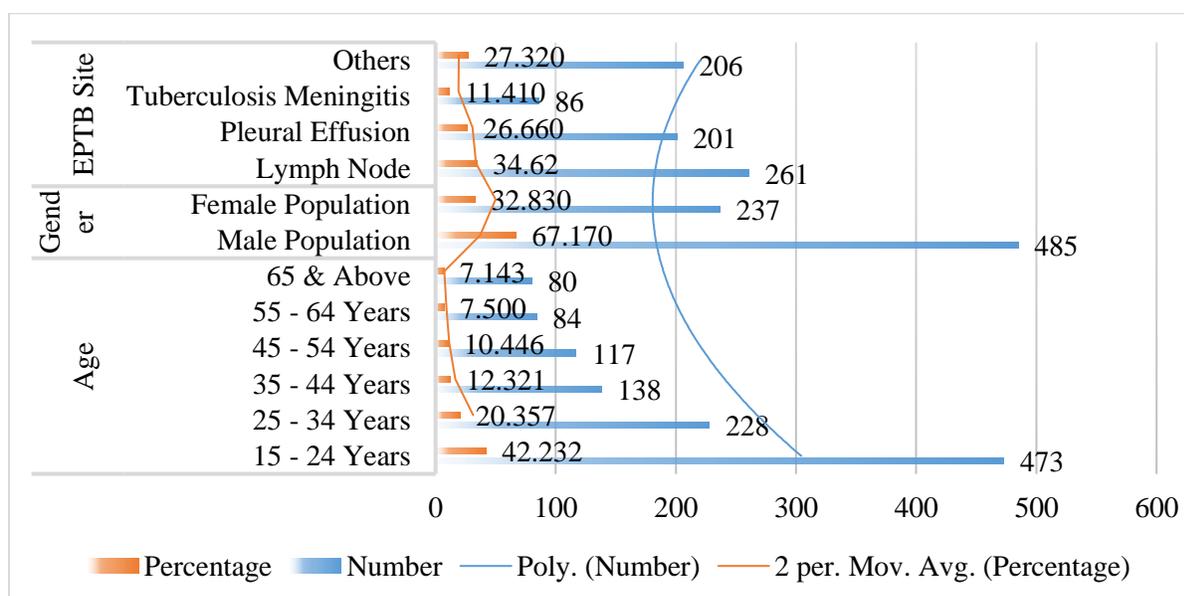
The 15-24 years' age group consisted of 473 (42.23%) patients, 25-34 years consisted of 228 (20.36%) patients, 35-44 years consisted of 138 (12.32%) patients, 45-54 age group consisted of 117 (10.45%) patients, 55-64 years consisted of 84 (7.50%) patients and 65 years or more age group consisted of 80 (7.1%) patients. The number of MTB patients decreased as the patients' age increased.

Prevalence of lymph node observed in extra PTB cases (261 patients), pleural effusion in 201 patients, TBM in 86 patients and 206 patients involved MTB from other parts of the body. The patients' qualification showed that 259 males and 230 females were literate.

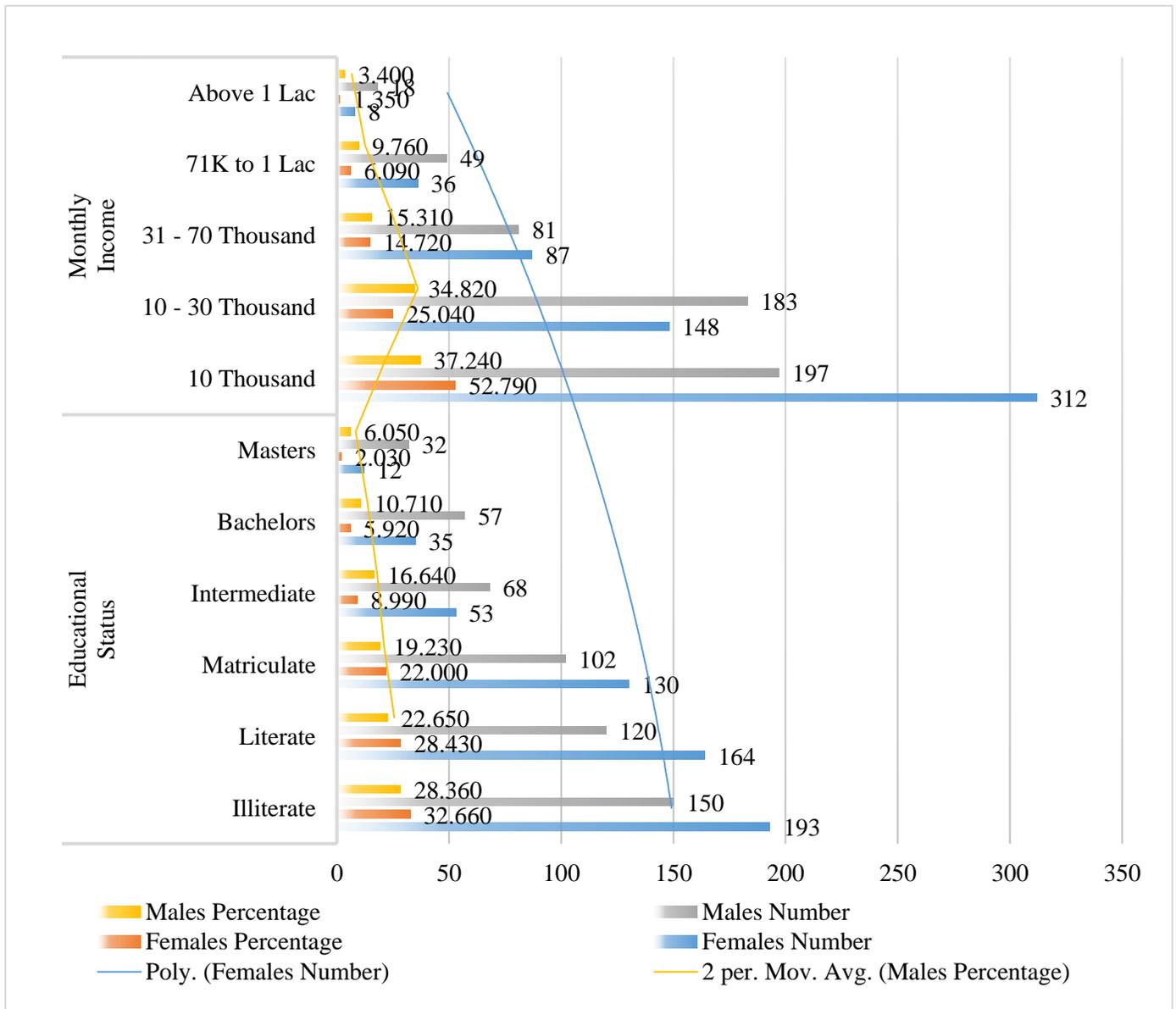
Most of the patients were from lower middle class whereas lower numbers of patients were from the middle, upper-middle and upper classes.

Table – I: Age, Gender and

Age, Gender and EPTB		Number	Percentage
Age	15 – 24 Years	473	42.232
	25 – 34 Years	228	20.357
	35 – 44 Years	138	12.321
	45 – 54 Years	117	10.446
	55 – 64 Years	84	7.500
	65 & Above	80	7.143
Gender	Male Population	485	67.170
	Female Population	237	32.830
EPTB Site	Lymph Node	261	34.62
	Pleural Effusion	201	26.660
	Tuberculosis Meningitis	86	11.410
	Others	206	27.320

**Table – II:** Education and Income Stratification

Education and Income		Females		Males	
		Number	Percentage	Number	Percentage
Educational Status	Illiterate	193	32.660	150	28.360
	Literate	164	28.430	120	22.650
	Matriculate	130	22.000	102	19.230
	Intermediate	53	8.990	68	16.640
	Bachelors	35	5.920	57	10.710
	Masters	12	2.030	32	6.050
Monthly Income	10 Thousand	312	52.790	197	37.240
	10 – 30 Thousand	148	25.040	183	34.820
	31 – 70 Thousand	87	14.720	81	15.310
	71K to 1 Lac	36	6.090	49	9.760
	Above 1 Lac	8	1.350	18	3.400



DISCUSSION:

The prevalence of Tuberculosis is more common in men than women as concluded by different studies from multiple locations. However, both genders are likely to be infected by the disease [10]. The number of male patients was more than the number of female patients except for two age groups (<15 & >65 years). The ratio of male to female patients was the highest in XDR-TB [11]. A study on the same subject delivered that the Tb patients were more prevalent in 60 years and above age group while the minimum number of patients were from 18-29 years' age group (12.7%). The prevalence of TB in earlier group attributed to the weak immune system of the older patients. Sputum positivity in different age groups was 39% (the highest) in 20-40 years' group, 37.6%

in 40-60 years and 34.5% in 60 years & above. A study conducted at Manipal Hospital (India) produced varying results of Tb patients in respect of age groups. According to the study, 41.5% patients (maximum) were from age group 21-40 years, 38.2% were from 41-60 years and only 11.6% patients were from above sixty years' age group [12]. Another study by Q.H Khan reflected the conflicting results (63.83/1000 patients) for older patients of >60 years [13]. Roviglion delivered that most of the TB patients were older than 65 years [14]. Many other studies confirmed that the number of male patients was higher than the number of female patients; (Case 1: male 79% - female 25.1%, Artil and Anjali Case 2: male 57.8% - female 42.2% [15], Deepak Study Case 3: male 66% - female 34% [16]. An Indian study showed that the maximum patients were Hindu

(74.3%) followed by Muslims (16.9%). Similarly, Sputum positive were Hindu (40%), Muslims (37.8%) and Sikhs (11.0%) [17]. N Shetty et al delivered the matching results for his study with the highest prevalence of the disease in Hindus patients (72%) [18].

The facts and figure for TB patients are alarming in Pakistan, particularly, the prevalence of tuberculosis is on the rise among Pakistani females. This is due to the environment which most of the females are to live with. They have to look after the families and take care of the sick and elderly at the home which causes the transfer of bacteria causing TB. Moreover, the healthcare facilities are often given late and the quality of these facilities is not satisfactory as compared to Pakistani males [19].

The present study consisted of 1120 patients (males 47.23%, females 52.77%). Most of the patients of the study were females in this research. The sample ages ranged from 15-100 years with a mean value of 33 ± 16.76 years. The age group 15-24 was most significant with the prevalence of 473(42.23%) Tuberculosis cases. The age group 25-34 had 228(20.36%) cases whereas 138(12.32%) cases observed in 35-44 years' age category. Similarly, 117(10.45%) cases were 45-54 years old, 84(7.5%) cases lied in the age range of 55-64 years of age and 80(7.14%) cases were > 65 years. Interestingly, the prevalence of TB in children and older patients has reported by different researches but in this set up the prevalence of TB was more common in youngsters.

The number of male and female patients from Multan was 68.05% males and 53.47% females whereas 31.95% males and 36.37% females reported from other cities. The urban to rural area ratio of the patients was 2:1. The literacy rates of the sample were higher for males as compared to females. The monthly income of the patients also noted. The analysis showed that most of the patients were from lower middle or middle class having a monthly income of less than 30,000.

CONCLUSION:

The research concluded that the majority of the cases were from Multan 830 (74.11%) whereas a nominal number of cases were from other cities (25.895%). The patients showed improvement after the treatment. The study noticed the pulmonary lymph node as the most common site involved in TB patients.

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