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COMPARATIVE ANALYSIS OF AGE AND SEX DISTRIBUTION OF TUBERCULOSIS IN SRI LANKA AND BELARUS

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Resume. Tuberculosis remains the second deadliest infectious disease after COVID-19, with 10.6 million cases and 1.6 million deaths in 2021. South-East Asia bears 46 % of global cases, including 11 % children.

Keywords: Tuberculosis, Incidence, Males, Females, Age groups

Actuality. Tuberculosis (TB) remains a major global health challenge, ranking as the second leading infectious cause of death after COVID-19. In 2022, about 10.6 million people worldwide were infected with TB, marking a significant public health concern. New TB diagnoses reached 7.5 million in 2022, the highest number reported since 1995, indicating a resurgence or better detection of the disease and prevention remain critical to controlling and ultimately reducing the global TB burden.

Aim: The main aim of the thesis is to analyze the variation of distribution of the prominent factors such as age and sex in tuberculosis epidemiology

Objectives:

1. To analyse the age and sex distribution of tuberculosis cases in the Vavuniya district of Sri Lanka based on data from the local Chest Clinic.
2. To examine nationwide tuberculosis incidence data in Sri Lanka to assess the overall disease distribution.
3. To compare age and sex distribution of tuberculosis in Belarus using data from the Department of Pulmonology and related specialties and correlate these findings with global TB reports from WHO to identify relapse factors and associated diseases**.**

Material and Methods. An analysis of patient case findings was collected from Chest clinic of Vavuniya district of Sri Lanka to analyze the district distribution of tuberculosis with age and sex. The nationwide data also collected to analyze the total incidence of distribution in Sri Lanka. The information regarding the age and sex distribution of Belarus was collected from the Department of Pulmonology, Phthisiology, Allergology and occupational pathology with advance training and retraining course. Other supporting factors with relapse and correlated diseases and total incidence rate were clarified from the database submitted to the Global TB report of WHO by the respective countries.

Results and Discussion. According to the 2024 statistical report from Sri Lanka, tuberculosis (TB) incidence shows a distinct pattern based on age and sex. In individuals older than 24 years, males have a relatively higher incidence of TB compared to

females. Conversely, in those under 24 years, females exhibit a higher incidence than males. Sri Lanka's total population is approximately 23 million. Among males aged over 15 years, TB cases range from 5,800 to 13,000, while females in the same age group have between 2,800 and 6,500 cases. For children aged 0-14 years, TB incidence ranges from 490 to 940, with male children numbering between 100 and 150 cases and female children between 100 and 120 cases. The overall TB incidence rate is about 0.04 % for males and 0.02 % for females within the total population. The total TB cases in Sri Lanka fall within the range of 10,000 to 19,000.

Sri Lanka Gender & Age wise TB Cases 2024

	0 -4	5-14	15 -24	25 -34	35 -44	45 -54	55 -64	65 -74	75-Over
Male	41	80	400	584	879	1126	1429	944	438
Female	21	86	473	371	381	544	622	554	207
Total	62	166	873	955	1260	1670	2051	1498	645

Fig 1 : The distribution of TB patients with Gender and Age in 2024

Sri Lanka Gender & Age wise TB Cases 2023

	0 -4	5-14	15 -24	25 -34	35 -44	45 -54	55 -64	65 -74	75-Over
Male	33	62	385	599	930	1227	1484	1093	371
Female	26	94	461	417	433	544	647	512	220
Total	59	156	846	1016	1363	1771	2131	1605	591

Fig 2 : The distribution of TB patients with Gender and Age in 2023

The age group most affected by TB is adults between 35 and 65 years, with the peak incidence in males aged 55–64 years, where male cases are more than twice that of females in the same age bracket.

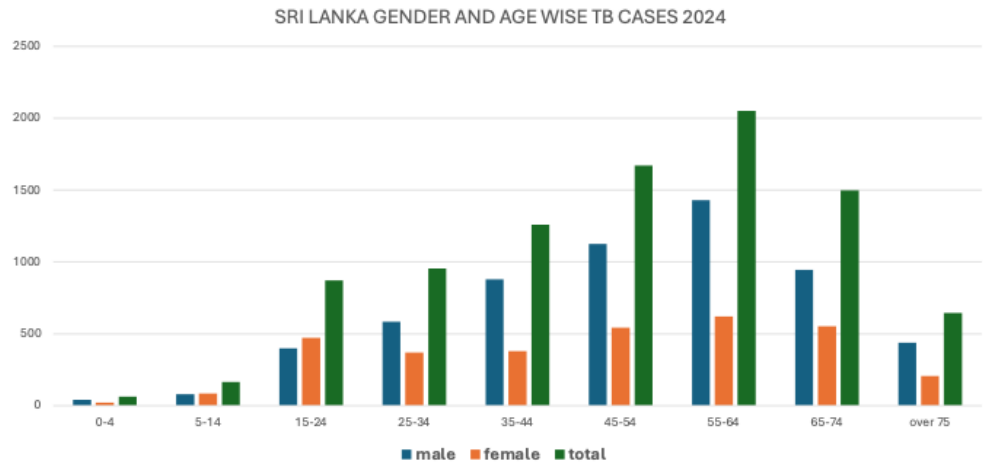

Fig 3. Distribution of TB patients with Gender and Age across Sri Lanka. Number of patients (Y) and age groups (X) Iin the year of 2024.

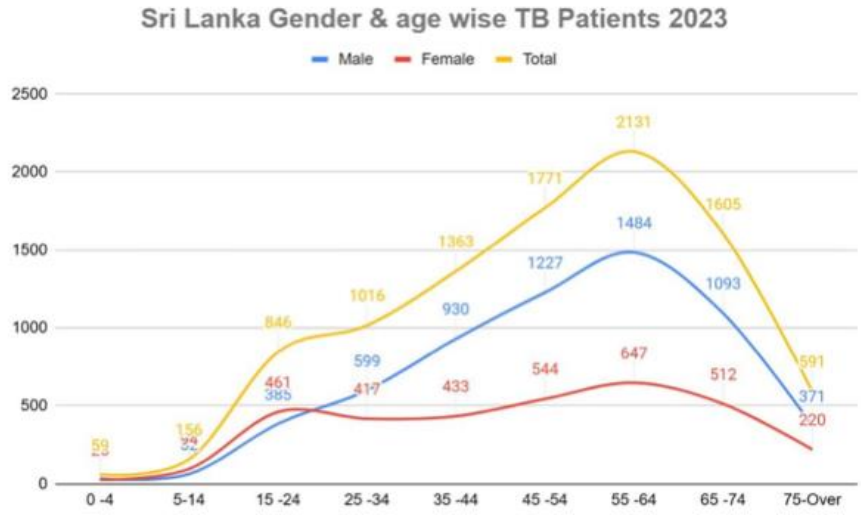

Fig 4. Distribution of TB patients with Gender and Age across Sri Lanka. Number of patients (Y) and age groups (X) Iin the year of 2023.

In Belarus, with a population of 9.5 million, TB incidence among males aged over 15 years ranges from 1,200 to 2,400 cases, while females in the same age group range from 450 to 920 cases. Data for children aged 0–14 years is unavailable, but for those under 17 years, the total cases are estimated between 16 and 20. The TB incidence rate is approximately 0.02 % for males and 0.0076 % for females in Belarus.

Overall, the data from both Sri Lanka and Belarus confirm global trends indicating higher TB incidence in males compared to females across most age groups.

Conclusion: In both Sri Lanka and Belarus, males generally exhibit a higher TB incidence than females, aligning with global trends. However, in Sri Lanka the women in working sectors and being exposed to huge crowds is relatively lesser compared to males but in Belarus women are dominating in many work sectors even though the statistics remains same as male having higher incidence. This could be of gender and age based physiological factors, good lifestyle habits than males could be contributing to infection and the epidemiology of TB, with further research it should be studied.

Even though the TB control in Belarus is impressive the reminder is that HIV-Positive TB incidence is high is Belarus compared to Sri Lanka.

Literature

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