Tuberculosis among Asians as Compared to the General Population in Massachusetts

Mariela Miron
University Park Campus School

Adhithri Raja
Westborough High School

Valerie Tran
South High Community High School

Nancy Phan
South High Community High School
What is Tuberculosis?

An infectious disease caused by the bacteria Mycobacterium Tuberculosis that mainly affects the lungs.

What is a Health Disparity?

Health Disparity

Difference In

- Incidence
- Prevalence
- Mortality
- Burden of Disease
- Adverse Health Condition

National Institutes of Health (NIH)
The Truth About Tuberculosis
Asians are at 44.3 times of a higher risk of being diagnosed with TB in 2018 in Massachusetts compared to white residents.
Tuberculosis Among Asians...

% of Tuberculosis Cases in Massachusetts in 2018 by Race/Ethnicity

- Asian: 46.5%
- Hispanic: 13.5%
- Black, non-Hispanic: 25.5%
- White, non-Hispanic: 14.5%

Factors that Contribute to the Disparity Among Asians

Language Barriers

Cultural Barriers

Vitamin D Deficiency

Genetics
"Links to Genetics Related Programs, Organizations and Resources." Ohio Department of Natural Resources, 2020.
Language Barriers = Healthcare Issues

When patients can’t communicate with doctors due to differences in language, it discourages them from going to the doctor even when necessary.

U.S. Census Bureau, 2012-2016 American Community Survey, Public Use Microdata Sample (PUMS), BPDA Research Division Analysis.
Cultural Barriers = Healthcare Issues

Stigma
Asian cultures tend to face stigma, discouraging them from seeking healthcare when necessary.

Traditional Medicine
Many Asian cultures use traditional medicine as opposed to Western medicine prescribed by doctors.

Family
Asian cultures emphasize the important of family, consulting them first before making medical decisions.

Vitamin D Deficiency

Why is There a Disparity in Vitamin D Levels?

Religion
- Diet
- Traditional Attire

Popular belief among Asian ethnicities
- “Fairer skin is more beautiful”

Melanin Levels In Skin

Vitamin D Levels in Asians and Whites Over Four Seasons in MA


Genetic polymorphism is associated with increased susceptibility of tuberculosis among the Asian population.

Genetics

Genes of Interest:

\[ Rs2275913 \]

-819T

Mutation

Abnormal Protein: IL-10

The Solution to Cultural and Language Barriers:

A Need for More Asian Doctors

The Solution to Vitamin D Deficiency: Incorporating More Vitamin D Into Diet

**Bring awareness to Asians** about Vitamin D deficiency that may be putting them at risk for Tuberculosis.

**Encourage them to get tested** for vitamin D Deficiency and take vitamin D supplements accordingly or add vitamin D rich foods to diet.

MA Medical Clinics with Tuberculosis Services

Partnership with Community Clinicians

Utilizing Financial Incentives to Promote Prevention and Treatments
If we work to resolve these factors through the solutions we mentioned, we can significantly reduce the number of cases of tuberculosis in Asians in MA, thereby minimizing the disparity.
Thank You!

Questions?

Citations

- Nguyen, Giang T. Challenges and Opportunities in the Care of Asian American Patients. 1 Oct. 2014.
- “Mental Health: Overcoming the Stigma of Mental Illness.” Mayo Clinic, Mayo Foundation for Medical Education and Research, 24 May 2017.

- “Institute for Asian American Studies.” University of Massachusetts Boston.
Citations

- “Learn About Tuberculosis.” American Lung Association.
- Siddiqui. "Vitamin D and Tuberculosis." YouTube, uploaded by Dr. Siddiqui, 31 December 2019.