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Tuberculosis Prevalence in South Korea

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ABSTRACT

Even before Dr. Robert Koch discovered tuberculosis (TB) in 1882, TB had been taking people's lives. It is one of the leading causes of death worldwide. Despite the fact that TB can almost always be cured with treatments, more than a million people die yearly. Interestingly, only 30 high-burden countries account for more than 85% of TB cases and deaths. Historically, TB has been related to low-income countries, malnutrition, and overpopulation. Among these countries, South Korea has been an exception. South Korea has the highest number of TB cases and deaths among the countries in the Organization for Economic Co-operation and Development (OECD). To analyze the correlation between South Korea's environment and high TB cases, this academic paper delves in-depth at South Korea's environment and the factors that lead to the prevalence of TB.

Keywords: Tuberculosis, South Korea, TB/HIV

Subject: Health (Infectious Disease)

INTRODUCTION

Tuberculosis is a disease that poses a great amount of threat to the global population. Every year, more than 10 million people fall ill with TB, taking the lives of more than a million people (WHO, 2021). In South Korea, there were 19,933 new patients in 2020 and 36,305 patients in 2010 (KNTA, 2022). Thanks to TB prevention and control programs, the number of patients in 2020 saw a steep decline from 2010 (KNTA, 2022). Nonetheless, South Korea is identified as one of the high TB burden countries. As can be seen in Figure 1, the number of TB cases in South Korea is 7 times higher than the average number of TB cases in the countries in the OECD (OECD, 2019). With the vision to create a "TB-free society", South Korea started the national TB elimination program and there has been significant progress. However, the main question remains: what is the reason behind the prevalence of TB in South Korea?

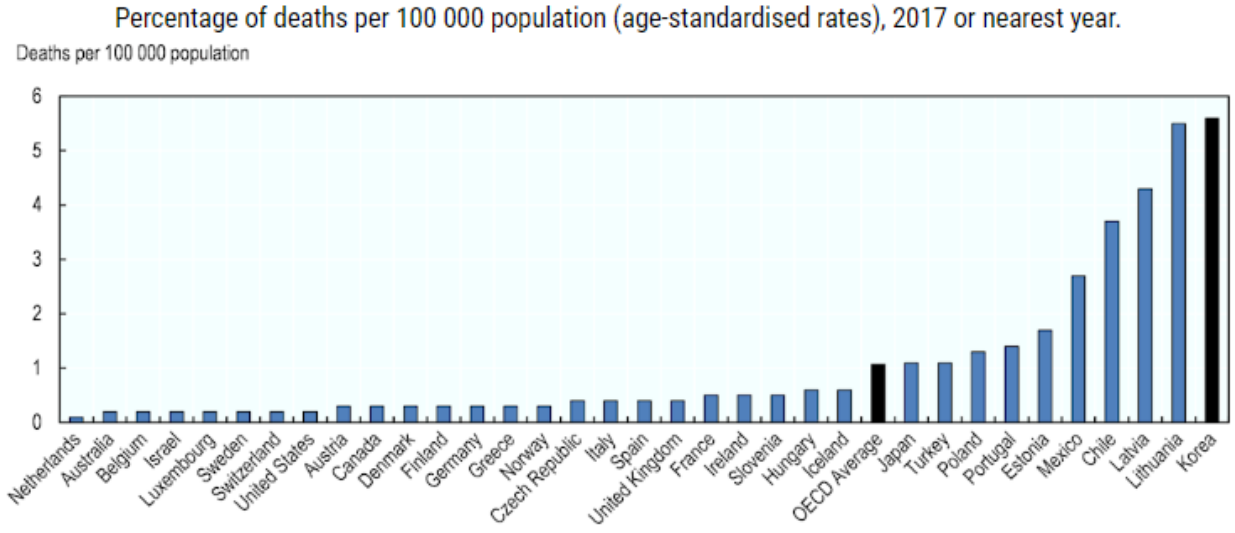

Figure 1: Percentage of deaths per 100,000 population (age-standardized rates), 2017 or nearest year
Source: OECD (2019)

RESEARCH METHODOLOGY

Parts of the research were done by analyzing data points that were collected by health centers such as the World Health Organization (WHO), Center for Disease Control (CDC), OECD Reviews of Public Health, and more. Data points collected from these websites were analyzed to find a possible correlation between several variables. Moreover, basic information about TB was gathered using WHO and Korea Disease Control and Prevention Agency (KDCA). After finishing the research on TB, information on significant events and other infectious diseases were also gathered to find a relationship between them and TB cases.

RESULTS

The Korean War

Identified as one of the most serious global health problems during the 1950s, the first spike of TB cases hit South Korea in 1954. After the Korean War, approximately 350 out of 100,000 people were infected by TB (The World Bank, 2015). In other words, 6% of the South Korean population had active TB (The World Bank, 2015). Due to the Korean War, South Korea was in a state of economic crisis and citizens experienced serious malnutrition. This caused people to have poor immune systems, making them prone to TB. A newspaper article reported that 25% of the hospital patients were diagnosed with Pulmonary TB (Kim, 1951). Furthermore, more than 10,000 people died due to TB every month and the numbers kept increasing (Park, 1954). Moreover, due to poor medical infrastructure and the lack of hospitals, most people were not able to get proper treatment and some did not even know that they had TB as screenings and tests were not available to the mass public at the moment. All of these factors after the Korean War contributed to the spread of TB in South Korea.

HIV

The second prevalence of TB in South Korea started with the arrival of HIV. The first case of HIV in South Korea was identified in 1985 and became a pandemic during the 1990s. People infected by HIV had poor immune systems and this led to the risk of falling ill due to TB. Although the number of HIV cases in South Korea is low, the number of TB/HIV co-infection cases is increasing every year. In 2001, there were only 0.025 TB/HIV cases whereas, in 2005, there were 0.095 (Hwang et al., 2010). This co-infection led to more people being infected by TB as people's immune systems were damaged due to HIV and a higher death toll as co-infection has a higher mortality rate.

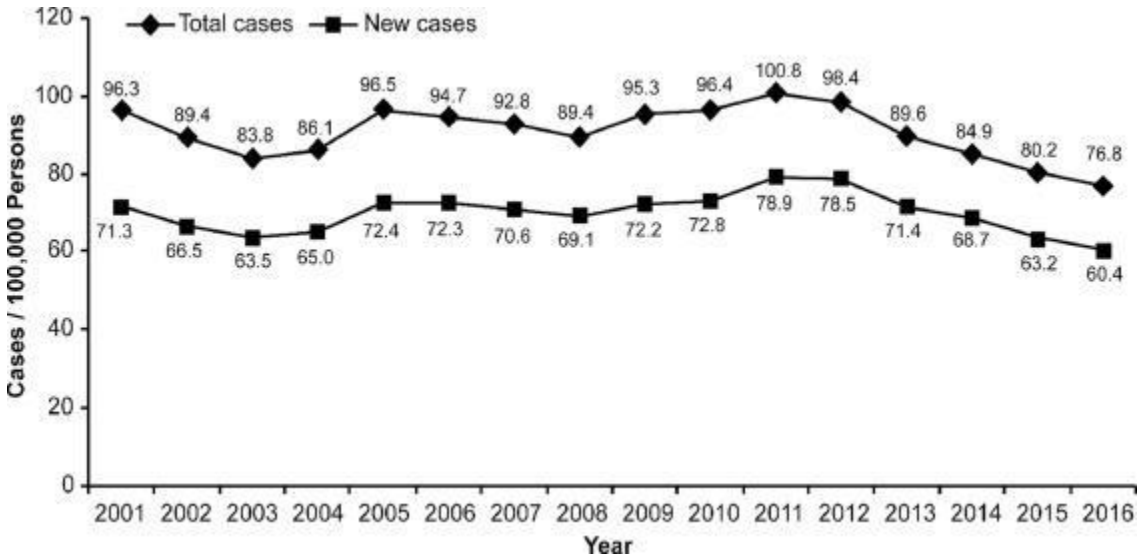

Figure 2: Tuberculosis cases in Korea
Source: Korea Centers for Disease Control and Prevention (2016)

Elderly Population

In South Korea, it is shown that a significant portion of TB cases are found among the elderly population. Even though the number of TB cases in South Korea is decreasing every year, the number of patients that are over 65 years old is increasing. There were 9,322 and 15,227 patients in 2001 and 2013, respectively (KCDA, 2014). In 2001, 20.2% of all

tuberculosis cases were from patients who are older than 65 years of age and in 2013, the percentage was boosted to 33.6% (KCDA, 2015). Data shows that the elderly population accounts for a large number of tuberculosis cases in South Korea. The elderly are more susceptible to infectious diseases due to their decreased host immunity and weak immune system and the infection among this population can possibly lead to a chain reaction in the near future. Moreover, it should be noted that 67.2% of people who are older than 60 years of age have latent TB (Yoon et al., 2012). As some latent bacteria become active, they spread to others, causing infection among the population.

DISCUSSION

After going through the Korean War, South Korea developed at an unprecedented speed. Its economy is now regarded as one of the best in Asia its GDP per capita is currently 150 times of what it was in 1954 (Yonn, 2015). However, South Korea has persistent problems with high TB cases and control programs. In the 2000s, South Korea tried to decrease TB cases by launching several programs, namely the National Tuberculosis Program. Followed by the success of this program, South Korea launched the 2nd National Tuberculosis Program which aims to lower TB cases from 77 out of 100,000 people to 44 out of 100,000 people (Koo et al., 2012). Although programs and active screenings helped reduce TB cases, it is without a doubt that there is plenty of room for improvement. To prevent future pandemics caused by tuberculosis, South Korea's health control systems should actively make policies and programs that focus on preventing TB and taking proper care of TB patients to receive proper treatment.

CONCLUSION

As it can be seen from many data points, TB prevalence in South Korea exceeds that of other countries that have similar economic status to South Korea. This study highlights some of the possible reasons why TB cases remain relatively high in South Korea but more research studies would need to be conducted to figure out the major cause and use the information to prevent TB cases in the future. Collecting information on city levels and, possibly, even smaller areas with a large variety of demographics will allow South Korea to come up with revolutionary ideas that can stop the spread of TB once and for all.

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