

**Certificate of Higher Education Skills for the Workplace
Health and Social Care**

Introduction to Public Health

Major Health Issue

Tuberculosis

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Introduction

This report will focus on defining tuberculosis and understand its impact on health social care setting in the UK and on an international scale. We will analyse public health measures available for the population, risk factors of the disease, and potential consequences.

According to WHO (2022), tuberculosis (TB) is a communicable disease and has been the biggest cause of mortality from a single infectious agent before COVID-19. The disease had even higher death rates than HIV/AIDS. The cause of TB is the bacillus bacteria and is spread in the air by sick individuals. Men are at first sight to contact the disease to women, and 90 percent of them are adults. On a global scale, about a third of the population has been affected by tuberculosis and without treatment, while the death rate is 50 percent among individuals infected. The World Health Organisation is publishing a report on tuberculosis since 1997 and in 2022, 99 percent of the countries have reported their cases of TB. The success rate for treated individuals in 2022 is 86 percent, which is the same as 2019. This is proof that the health conditions have been maintained even with the difficulties met during the pandemic.

Tuberculosis had seen a massive decline in cases since 2012 in the UK, the average rate of mortality before that being of almost 2 percent annually. There have been very limited incidents of tuberculosis in the UK in the last decade, and two out of three are brought from people that travel overseas (Glaziou et al, 2018).

The disease spread across the UK mainly during the industrial revolution and the two world wars due to the unhealthy living conditions, poverty, and urbanisation. Only in 2020, there were 1464 cases of TB reported in London, the highest infectious area in the country.

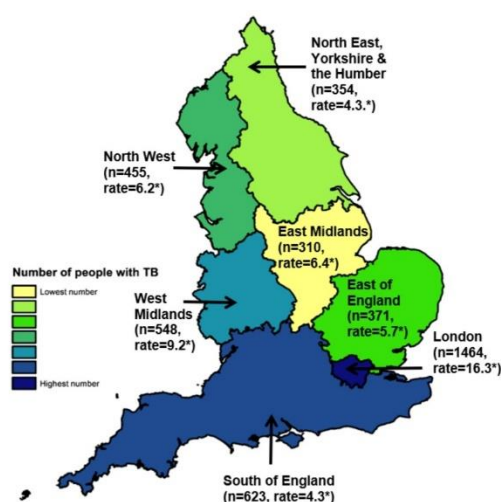


Figure 1. Number of Tuberculosis Notifications in the UK 2020 (UK Health Security Agency).

Public Health Measures Available

Due to the easy methods of contamination, the UK has implemented a set of measures to prevent the disease, especially in healthcare facilities, where the risks are much higher. The World Health Organisation has introduced a an year-to-year programme in England that has the objective to prevent TB and reduce health inequalities. The pandemic had a massive impact on the entire globe and health facilities, and experts believe many cases of tuberculosis have been undetected during the recent years, this being the reason for a decline in cases (UK Health Security Agency, 2021).

Some of the measures implemented in the UK include hospitalization and isolation in negative pressure rooms of the sick individuals and avoiding discharging them without securing that the necessary arrangements have been made, such as treatment and care. Visitors and healthcare professionals should always wear FFP3 masks with infectious patients and the administration of the BGG vaccine is recommended (National Collaborating Centre for Chronic Conditions, 2006).

Children under five can be administered the vaccine, especially when they are born in high risk areas, but the BGG vaccine is available for everyone in the UK since 2015 as well.

It has been discovered the TB is resistant to certain drugs, such as isoniazid and rifampicin, which are first line anti-tuberculosis drugs, or injectable second line drugs, including fluoroquinolones. The World Health Organisation has the objective to prevent TB, and one of the measures is to improve the opinion of the population regarding treatment against TB. Controlling and monitoring effects and implications of the disease allows research to be done and healthcare professionals to receive more information on treatment and prevention. Additionally, people that have been in contact with sick individuals can choose to test themselves in the first instance, in order to prevent any possible transmission (Agyeman and Ofori-Asenso, 2016).

According to Ismail et al (2021), environmental control has the objective to prevent infection by reducing the concentration of respiratory aerosols in the air and decreasing the risks. Healthcare professionals are exposed to the risks more that anyone else, and this measure can offer a healthier work environment, along with following the other procedures.

The measurements differ from country to country depending on their levels of clinical developments and available medicine. WHO is funding the majority of the costs involved in the treatment and prevention, including vaccines and medicine prescribed to patients.

Risk Factors of Tuberculosis

There is a constant risk of an increased cases of mortality due to tuberculosis, and this can occur under different circumstances, such as big gatherings of social mixtures or a long exposure to the infection. Diabetes, alcohol, malnutrition, tobacco smoke, and indoor air pollution are factors that impact a larger population and accelerate progression to tuberculosis (Narasimhan et al., 2013).

The disease is caused by mycobacterium tuberculosis which can lead to a lung infection that is later developed into an active disease. There is a rather high risk of infection and this depends on a set of social and medical factors. The quality of ventilation, the level of proximity, and the length of the contact with an infected person is what usually determines the risk level. Once exposed to the bacteria, the person's defence system against infections is determining the risk and there is a range of characteristics that can lead more or less to an active disease, including age, sex, or medical conditions (WHO, 2010).

The treatment for TB lasts for at least six months and can include chemotherapy and close monitoring while the drugs are administered. Even with the right treatment there are cases of treatment failure, which is often caused by social and medical determinants. Natural factors have a great influence of risk level as well. For example, men are more likely to be infected than women, and the disease usually affects adults rather than children.

According to Davies (2005), underweight individuals are exposed more to the disease, especially when the weight is much under norm. The researcher describes a series of studies that support the correlation between the disease and reduced body mass. The lifestyle one has, is also a determinant factor, and conditions such as poverty, a poor diet, alcohol intake, drug abuse, or the lack of sunlight are considered to have a solid relationship with people being infected.

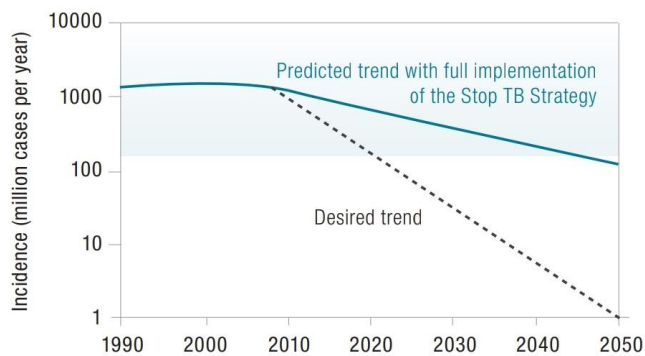


Figure 2. Predicted trends of Global TB 2007-2050 with the implementation of STOP TB Strategy (WHO, 2010).

Short-term Consequences

Tuberculosis is a fatal disease if left untreated, and up to 65 percent of people that contract it might die in this case (WHO, 2010).

However, the infection can be treated and people the survival rate is about 86 percent on a global scale. There are short-term consequences affecting people with TB even if treatments is administered. It is important to be noted that there are three stages of tuberculosis – the exposure, the latent phase and the active phase. The disease can be easily tested through blood or skin tests, and not all individuals contracting the disease are going through all three phases, if treated in time (John Hopkins Medicine, 2022).

It has been reported that between 1995 and 2015, there have been 66 million cases of treated tuberculosis around the worlds. Many of treated patients have presented medical conditions after the treatment, such as difficulties in breathing or restricted airflow. This consequences of TB can be worse if the individual smokes, lives in a poor ventilated residence, or abuses drugs or alcohol (Ravimohan et al., 2018).

Other short-term consequences related to tuberculosis are economical and social conditions of individuals. Receiving the treatment means that people are either hospitalised or closely monitored, with strict schedules that involve treatment and chemotherapy. This can create shortages or lack of work. Some countries would require the treatments to be paid by the patient, which can be an issue for certain social classes. Because tuberculosis affects the lungs in the first instance, individuals will be coughing, will feel chest pain or even coughing

blood. Other short-term effects of the disease include weight loss, night sweats, fever, nausea, weakness, fatigue, and back pain.

Children that have contracted tuberculosis might experience poor growth and appetite loss, but also have the symptoms adults would have. Children living with HIV or experiencing any symptoms of TB should be tested more often.

According to NHS (2019), people that have a cough for more than 3 weeks must be tested for TB, as it often appears without other symptoms in the latent stage and only during the active phase starts to present more signs. Also, while people are in the latent phase, they are not infectious and present no risk to society. However, TB can become active if the immune system weakens and the person becomes infectious.

Long-term Consequences

The short term consequences can be treated and often disappear once the infection is eliminated or shortly after. With long term effects is different, as these can be long lasting consequences, even for the rest of one's life. If untreated, the rate of mortality is very high, and when treated late, it can leave deep prints on one's health, such as lung damage, bone infections, or spinal cord infections. The long-term impacts of TB can be very serious and many individuals have reported them during the years.

There is a strong correlation between long-term consequences of tuberculosis and medical issues, such as diabetes, severe kidney disease, cancer, or HIV and AIDS. Individuals undergoing chemotherapy or being in the process of organ transplants are also more exposed to the infection.

There are different possible causal pathways linking low socioeconomic status with high risk of TB and the main long-term consequences are in fact of a socio-economic nature, as patients are not physically able to work during treatment or they have to cut out the workload (WHO, 2010).

A study conducted by Glaziou et al. (2018) determined that during TB treatment, almost half of the patients become unemployed or self-employed. The socio-economic difficulties also

impact the household, with 17 percent of children interrupting their schooling during the study and 58,5 percent reported severe financial impact.

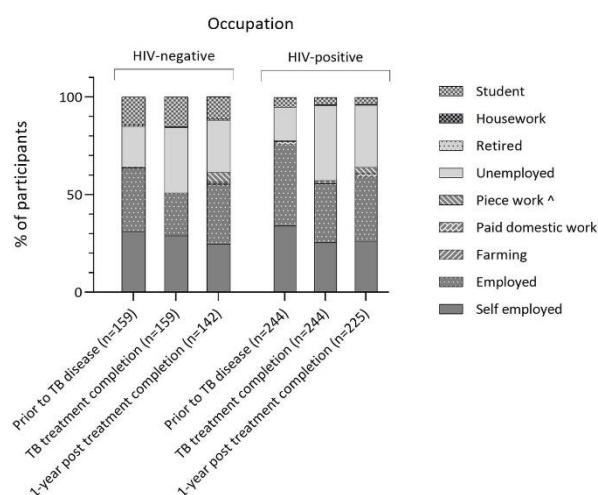


Figure 3. Occupation of patients during TB treatment and one year after (Glaziou et al., 2018).

Conclusion

TB is still one of the deadliest diseases in the 21st century and the impact of it on the population is relatively high, as anyone can be exposed to it, even if there are several risk factors that maximise the transmission. Studies show that health professionals activating in areas where tuberculosis is treated are more exposed to the infection, and occupation is another determinant of it. However, medical staff have measures in place to protect themselves from the infection.

If the disease is treated in time, the survival rate is high and it has been kept like this throughout Covid-19 in recent years. People should get tested if they have symptoms of TB, as this information is distributed in healthcare settings, online, and other places people have access to. Medical research in the field has expanded drastically and people are well informed of consequences and risk factors leading to it. Therefore, having the necessary resources for prevention is very important for the population. The highest rate of disease in the UK is in London, as the congestion of people in the capital is quite high compared to other regions, this being one of the main factors for infection. In conclusion, people living in risk areas are advised to test themselves for the disease more often.

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