

The aetiology, symptoms and pathogenicity of tuberculosis essay examples

[Technology](#), [Development](#)



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Various communicable diseases exist. These diseases pose a major threat to the current population living in the developing world (Sullivan & Amor, 2012). Examples of the communicable diseases are Malaria, Tuberculosis, Measles, HIV/AIDS, and many others. It is the second only to HIV/AIDS the disease that is the greatest killer worldwide. The disease is so dangerous that 8.6 million fell ill in 2012 with 1.3 million people died from the disease (WHO 2014). Despite their existence, it is an issue of major concern that very few people in the developing world have sufficient knowledge or tools concerning these diseases. For example, most people lack knowledge on how the diseases spread their symptoms, and even how to treat them. Therefore, this essay focuses on tuberculosis, since it is one of the dangerous communicable diseases, killing many people in the developing world (Perkins et al, 2006).

Introduction to Tuberculosis

Tuberculosis, abbreviated as TB, is one among many communicable diseases that causes the death of millions of people in the developing world. The main source of the infection is a bacterium caused by the organism

Mycobacterium tuberculosis which mainly attacks the lungs. The disease mainly spreads from an infected person to another through breathing in infected air (Toman, 2004). However, when a person contracts the disease, it can stay in a state of inactivity in the body for two years, until immunity weakens (Toman, 2004). When, immunity weakens, the disease becomes active, thus attacking other body parts including the lungs, spine, kidneys, and the brain.

As mentioned, TB spreads from an infected person to another, through inhaling infected air. Bacteria containing TB is transmitted into the air through water droplets when an infected individual spits, shouts, coughing or sneezes (Zhongwei et al, 2014). The infected person could be sitting or standing as long as the uninfected person inhales only a few of these germs that most often affects the lungs and they would be infected by the disease (Lurie et al 2014). So there for individuals cannot contract the disease through touching clothes or greeting an infected person (Langley et al, 2012).

There are two types of Tuberculosis (Langley et al, 2012). The two types are latent and active Tuberculosis. Active TB occurs when the infection is in the active process of producing symptoms, such as cough, fever, night sweats, weight loss and many others. however, the symptoms may be mild, so un

noticeable for many months, as it is mild for many months, many delay seeking treatment, this can result in the transmission of the bacteria to others, resulting in infecting up to 10-15 other people through close contact over a year, without treatment up to two thirds of people ill with TB will die (WHO 2014).

Whereas Latent Tuberculosis, occurs when the body is not producing any symptoms (Toman, 2004). About one-third of the world's population has latent TB, which means they are not yet ill with the disease (WHO 2014). Tuberculosis has several associated symptoms and signs (Langley et al, 2012). Some of the symptoms are coughing containing blood sputum, back stiffness, spinal pain, weight loss, chest pain, and fatigue.

Demographic affected and a discussion of why this is the case

In all over the world TB can affect people (Getahun et al, 2013). In Asia in 2012 the largest number of new cases occurred, this accounted for 60 % of new cases globally. However, Sub-Saharan Africa carried the greatest proportion of new cases per population (WHO 2014)

In low and middle income, countries over 95% of deaths occur due to TB (WHO 2014). There are various demographic variations behind tuberculosis infection. For example, existing statistics shows that TB infection is high among men than women in the developing world, especially sub-Saharan Africa (Lurie et al, 2014). There are various factors contributing to these variations. For example, Men are at a higher risk of contracting the disease, than women because of the risky behaviors they engage in. Some of the risk factors are smoking, consuming alcohol, and other harmful substances

(Gough & Kaufman, 2011). Smoking increases the chances of contracting tuberculosis because it lowers the body immunity. Further, smoking increases the chances of contracting the disease because it damages Cilia's function in the airways. More than 20% of TB cases worldwide are attributable to smoking (WHO 2014).

However, these demographic statistics do not hold among women in the reproductive age. For example, the rates of TB infection are higher among reproductive women than men in the developing nations (Friedland, 2011). Expectant women in the developing nations are at a greater danger of contracting the disease, because of their weak immunity so this makes it the top three causes of death for women ages 15-44.

Apart from gender, age is another fundamental demographic factor. For example, existing facts show that children below five years are at higher risk of contracting the disease in the developing countries. In 2012, an estimated 530 000 children became ill with TB and 74 000 HIV-negative children died of TB (WHO, 2014).

Children below five years in the developing world are at a higher risk of infection because they have a weak immunity (Maiga et al, 2012). Similarly, it is arguable that persons above 65 years of age are at a greater danger of TB infection because of age related diseases, which lower their immunity. Other people at a higher risk of contracting the disease are people living with HIV/AIDS being that the highest rates of infection are in the developing world. People living with HIV/AIDS are at a higher risk of contracting TB because of their low immunity. In fact people who are co-infected with HIV and TB are 21 to 34 times more likely to become sick with TB (WHO 2014).

As well as malnutrition or diabetes. On the hand, people working in hospitals are prone to contact the infection because of constantly mingling with people having the illness.

Further, statistics shows that the number of TB infection is high in the developing world among people in the correctional facilities. Examples of the correctional facilities are prisons and other rehabilitation centers (Maiga et al, 2012). There are many reasons behind the high rates of infection in this population especially in the developing world (Maiga et al, 2012). The reasons are wide exposure to various risk factors including therapy interruption triggered by inmates' movement out and into the facilities and language barriers. In addition, the correctional facilities increase the infection rates of TB because of their physical structure that contributes to overcrowding. Equally, International travelers make another group of people at a higher risk of TB infection, because of mingling with different people. Also people

Intervention Measures

Various intervention measures have been put in place in order to address this problem in the developing world. Some of the measures are vaccination of babies and health workers with Bacille Calmette-Guerin (BCG). The aim of vaccinating this population with BCG is to protect it from contracting the disease (Brown, 2004). Apart from immunization, there are other preventive measures in place. The measures are documentation of TB transmission in health care, where each health facility has a TB prevention plan. The plan stipulates the necessary airborne precautions, treatment of people

suspected to be having the diseases, and detecting infectious patients promptly. In order to ensure the plans remain relevant, the administrations of various health facilities in the developing world evaluate them regularly (Brown, 2004).

Other prevention measures put in place in the developing world are issuance of travel advisories to international travelers (Brown, 2004). The advisories ensure that the travelers avoid coming into contact with many people as possible. However, in some cases, other travelers undergo vaccination before traveling in other TB prone areas. Similarly, people coming from TB prone areas, normally undergo screening at the airport in some instances, in order to detect if they have the disease. On the other hand, people living in correctional facilities, normally undergo regular TB screening, in order to prevent them from spreading the disease (Barke et al, 2011). Lastly, various agencies have come up with antismoking campaigns including educating people on the dangers of smoking, as a measure of reducing spreading of the infection. Also people already infected, quickly start undergoing medication in order to avoid infecting other people (Barke et al, 2011). The treatments used in this case are Rifampin, Isoniazid, Rifapen tine and the Stop TB strategy recommended by WHO (WHO 2014).

Evaluation of the Interventions

These intervention measures have been very effective in addressing TB menace in the developing world largely because they managed to reduce its prevalence and infection significantly. For example, cases of TB infection are currently very low among women and children in the developing world.

However, in spite of these success stories, the preventive measures still face a number of challenges (Seth & Kabra, 2006). Some of the challenges are the development of resistant TB among people. As such, treatment of such people has become very difficult since the disease does not respond to any of the medications (Seth & Kabra, 2006). Various reasons relate to the development of resistant TB. Some of the reasons are provisions of wrong medication, failure to complete the dosage, and because of poor quality drugs (Lienhardt et al, 2012). However, in order to avoid this problem, various agencies embarked on a campaign for educating the people on the importance of completing the dosage that is prescribed.

Other challenges facing the preventive measures in the developing world are development of other diseases such as HIV/AIDS that led to an increase in TB infection. This has been a major challenge since treatment of such people is always difficult (Russell & Cohn, 2012). However, currently, many hospitals regularly screen people for TB, in order to ensure treatment of the disease before it becomes chronic. Lastly, lack of enough correctional facilities, hospitals and increased risky behaviors among people, such as smoking is another challenge facing these measures. Lack of enough facilities led people to live in crowded environments that enhance spreading of the infection. On the other hand, smoking contributed to spreading of the infection since it lowers immunity among people (Qu & McCormick, 2011). Stop TB strategy has been successful as an estimated 22 million lives was saved (WHO 2014).

Future prospects for control or eradication

In order to address, these challenges, many agencies are working hard in coming up with robust preventive measures (WHO, 2010). For example, scientists are working on coming up with a new vaccine of the disease. In addition, various medical consultation and regional training centers on TB exist. The aim of establishing these facilities is for the provision of medical consultation to medical providers and TB programs (Flaer et al, 2010). Further, the centers provide up to date training on TB and technical assistance in order to equip the human resource with adequate and latest knowledge on the disease. Similarly, various agencies are training and regularly educating people on TB including the importance of immunizing their children (Barry & Cheung, 2009). As such, it is evident that, with these measures and the inception of new ones, TB prevalence will reduce significantly in the near future just like other communicable diseases. The interventions that have been used have had some success as the TB death rate dropped 45% between 1990 and 2012 (WHO 2014).

Conclusion

TB is a dangerous disease because it kills many people annually in the developing world (Barry & Cheung, 2009). As such, it is essential for individuals to ensure that they take proper measures in order to prevent contracting the disease. Some of the measures are avoiding crowded places, immunization of children, and not engaging in risky behaviors like smoking (Barry & Cheung, 2009). Further, there's a need for people in the developing world to ensure that they regularly undergo screening especially

when they experience any abnormal cough. By so doing, they will be able to take proper measures before the disease becomes severe.

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