

To be with TB: the global problem of tuberculosis and how it affects human rights.

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Abstract

Tuberculosis continues to have a significant impact on global health, despite a decline in incidence in some developing countries throughout the world in the past few years. This article first provides an overview of this problem in terms of global prevalence and incidence and related prevention and treatment strategies. The second section outlines some of the challenges this presents in terms of human rights issues for individuals (those with the disease and those caring for them) and communities. The picture that emerges is that of a serious global problem that can nevertheless be improved with action on prevention and treatment that respects and promotes human rights.

The global problem of tuberculosis

Tuberculosis (TB) is a communicable disease which has had a significant impact on populations of the world for centuries. The disease is caused by a bacterium called *Mycobacterium Tuberculosis* which predominantly affects the pulmonary system of the human body. An individual may contract the disease through inhalation of the droplet nuclei, through the act of an infected person coughing, sneezing or laughing as explained by Davies and Gordon (2014). TB is considered to be the second biggest killer worldwide, second to Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS). In 2013, it was thought that globally, there were 9 million incident cases of TB and from this figure, 1.5 million deaths as stated by The World Health Organisation (World Health Organisation 2015).

TB is thought to have originated from Africa some 5,000 years ago making it a relatively new disease, suggests Daniel (2006). Due to the infectious nature of the disease, it has since spread from its origins to countries throughout the world. Although there has been a notable decline in incidence from 2000-2013, TB still continues to be a burden on global health. Figures from *The Global Tuberculosis Report* (World Health Organisation 2014) reveal that in 2013, the South-East Asian and Western Pacific regions of the world were responsible for 56% of TB cases. The African Region was accountable for an estimated one quarter of cases worldwide, with the highest rates of TB related cases and deaths relative to population; per 100,000 of the population on average, there were 280 incident cases reported, which is almost double the global average. Collectively, India and China had the largest number of cases of the global total which amounted to 24% and 11%.

Although the incidence per 100,000 populations has been on the decline in some countries, with notable improvements being made in Brazil and China (World Health Organisation 2015a), there still remains a high incidence rate in others. According to the World Bank (2015) from 2010-2013 countries such as Afghanistan, Chad, Iraq, Libya, Senegal, Sri Lanka and Timor-Leste have had high incidence rates which have remained stagnant throughout the years.

In spite of having what could be considered as adequate health care facilities and access to necessary education in the United Kingdom, Public Health England (Public Health England 2014) suggests that per 100,000 populations, there were 13 cases of TB in 2013. TB rates have been on the increase in Scotland from 2005-2010. There was however, a slight decline in numbers in 2011 and 2012. Of 408 cases in Scotland, the most prominent area with the disease was 48.5 percent (%) from Greater Glasgow and Clyde. 20.1% were from Lothian and 8.8% were from Grampian (Health Protection Scotland 2013). In England, and in particular London, there is an estimated 12% of population which accounts for 400 people with complicated cases of TB (London Health Programmes 2011). Essentially, the reason for this increase in numbers is unknown, but it could be related to travel, with UK Citizens being exposed to the disease when going abroad or because of the number of immigrants from high burden countries currently living within the UK. The Office for National Statistics (2013) found that in 2012, at least 12% of the United Kingdoms' population was made up from people who were born abroad.

The *Stop TB Strategy* is a strategy created by the Stop TB Partnership (2015) in co-ordination with The World Health Organisation (WHO). Currently, the global TB target set out by The United Nations in *The Millennium Development Goals Report* (2015) is within reach of stopping global TB incidence. Thirty seven million lives were thought to be saved between 2000 and 2013 through effective diagnosis and treatment of the disease (World Health Organisation 2015b).

The purpose of a global health strategy is to achieve a world where populations of people live longer, healthier and safer lives, suggests Beaglehole and Bonita (2010). In relation to TB, this vision can only be achieved through collaborative efforts from governments, health organisations, other organisations such as charities and the individuals who are affected by TB.

The Bacillus Calmette-Guérin (BCG) fast became the most widely used intervention for the prevention of TB (Crisp 2007). It is the only current vaccination which is available to be carried out by health care professionals in the hope of preventing the disease, but it is now around 85 years old. It only protects against tuberculosis meningitis and military TB, and its effectiveness against pulmonary TB is very limited.

Following its' introduction in to The World Health Organisation's Expanded Programme on Immunization in 1974, global coverage rates of the vaccine exceeded 80% of countries endemic of TB (World Health Organisation 2014.) BCG vaccination became a mandatory method of prevention for TB in most countries of the world shortly after World War Two, however there is little sound evidence to suggest that the BCG vaccination is accountable for the decline in incidence levels globally over the years. *The International Union Against Tuberculosis and Lung Disease* (IUATLD 2015) therefore suggested that

mandatory global BCG vaccinations were discontinued and this was put in to place by The Department of Health (DH 2005 cited in: Pilger et al. 2012). The National Institute for Health and Care Excellence (National Institute for Health and Care Excellence 2006) recommends that babies born to high risk groups, such as parents who originate from what is considered to be a high incident country or those who are exposed to other significant risk factors such as poor accommodation, are to be vaccinated. This United Kingdom policy has been changed through history due to the low level of incidence rates. America is a country which has never used BCG vaccination as a preventative intervention of TB and incidence rates have significantly been on the decline since the 1950's according to *The Centers for Disease Control and Prevention Report* (2014). As a country, they have instead opted to put financial focus on the diagnosis and treatment of latent TB which has proved to be successful to date.

There is an urgent need for the development of novel TB vaccines to protect children and young adults from contracting TB in developing countries (Delft *et al* 2015). There has been huge investments made in the last decade to achieve this and, according to Rowland and McShane (2011), by the end of 2009 there were several novel TB vaccinations undergoing investigation in humans with at least two of these recombinant protein vaccines reaching Phase two trials. One of the most creditable strategies to help treat TB, and thereby to prevent further spread, has been the introduction of *Direct Observation of Drug-Taking Strategies* (DOTS) in the 1990's. Individual compliance with medication is a cost-effective and successful form of treatment for TB. A study by Dosumu (2001) showed a 100% compliance and cure rate from using DOTS. In a systematic review of 27 peer reviewed articles carried out by Chaulk and Kazandjian (1998) similar success rates can be noted.

The lack of compliance with medicine has been established as one of the main reasons as to why TB can develop in to Multi-Drug Resistant TB (MDR TB) and can be fatal to lives suggests Prasad and Srivastava (2013). DOTS highlights that there is a need for five key components to be considered in the global implementation of this strategy, these include; commitment from governments in the control of TB, regular detection of the cases of TB, to ensure that a supply of high-quality drugs are available, to allow for supervised treatment of around six to eight months and to enable the regular use of a reporting system which effectively monitors the success rates. A randomised controlled trial carried out in Pakistan by Walley et al. (2001) it showed that the strategy of DOTS had a significant impact on the control of TB within this country. However, despite the high success rates there is evidence to suggest that DOTS is not cost effective and, because of this, it could reduce its efficacy in developing countries (Steffen et al. 2010).

To be with TB: recognising and addressing human rights issues

Human rights are the rights that individuals' have just for being human. These rights are universal, and should not differ depending upon an individuals' ethnicity, lifestyle, sociological and economic background, sexual orientation or religious and cultural beliefs as stated in The Universal Declaration of Human Rights (United Nations 2015). The main principles of human rights to be taken in to consideration are: fairness, respect, equality, dignity and autonomy as stated by Hughes (2010). The National Economic and Social Rights Initiative (NESRI

2004) explains that health is a human right and that everyone, regardless of background has the right to the 'highest attainable standard of physical and mental health, which includes access to all medical services, sanitation, adequate food, decent housing, healthy working conditions, and a clean environment.' In relation to TB, this definition of health as a human right can be considered as being greatly relevant.

The implications of contracting the disease are very much related to significant factors that increase the risk. In densely populated countries high incident rates could be the result of individuals' living within such close proximity of each other in poor accommodation. Other potential factors for individuals' to contract the disease are a weakened immune system due to malnutrition and disease, diabetes, smoking, travel, poor access to health care facilities and education and the consequence of poverty as suggested by Narasimhan et al. (2012). The Health and Human Rights Resource Guide (2015) also highlights how women and children are particularly vulnerable to the factors above. As the World Health Organisation (World Health Organisation 2015) emphasises, there are certain socio economic factors which may contribute to the contraction of TB that are out-with the individuals' control. Individuals' with TB are often stigmatised by members of a community and therefore can get mistreated. According to Slagle et al. (2014) in some countries where there is non-compliance in drug-resistant TB patients, these individuals' have been subjected to compelled isolation through involuntary detention to prevent the spread of the disease. The WHO's TB and Ethics Guidelines (2010) emphasises that this should be a last resort measure limited to three exceptional circumstances which primarily involve a person known to be contagious, refusing treatment and with whom all other reasonable measures have proved unsuccessful. Nevertheless, this policy remains controversial and contested as other community treatment models have proved effective (Health and Human Rights Resource Guide 2013). Clearly there are significant tensions involved between individual and community rights.

Many of the basic human rights are unfortunately often interlinked in connection to the prevention and contraction of TB. Regardless of the country from which the individual with TB originates from, they have the same rights as everybody else with the disease. However, due to the cost involved with diagnosis and treatment, a lack of resources and medical facilities in developing countries, these rights are often hindered suggests the Joint United Nations Programme on HIV/AIDS (JUNPAIDS 2010).

The Stop TB Partnership has initiated a rights based approach in order to improve the individuals' overall health, by emphasising the development of TB prevention, diagnosis and treatment methods that are effective (Global Fund 2013). This human rights task force aims to achieve this by targeting five key areas that are necessary to recognise when addressing TB, such as empowering the individual with TB and the communities that are affected from the disease; recognising the socio-economic determinants of TB; by making access to quality TB prevention, care and support more attainable for all; to develop an enabling legal and policy environment and to create and implement an accountability mechanism. Huge responsibility therefore lies with the governments of these countries to try and improve the standards of living and quality of lives of the individuals of a population by investing money in to the prevention and treatment of TB. In order to ensure that individuals' human rights are being met

they should have access to medical facilities that offer support from a health care professional in the diagnosis, treatment and management of the disease suggests the Stop TB Strategy (2015). Individuals' should have access to the most current and effective medication in relation to curing the disease. It may be appropriate to use DOTS as a strategy to successfully do this.

For the individual with TB, the challenging issue of communicating information effectively may arise, particularly if the individual is from a different country and there is an evident language barrier, suggests Ivany and Boulton (2014). This could pose a threat to the success of the treatment plan due to the already complex nature of the disease and its methods for treatments and adherence to infection control measures. According to Public Health England (2014a) 72% of the UK's TB cases are from individuals' born outside of the UK. In this case, it would be essential that the health care professional found a solution to the language barrier in order to ensure that the individual with TB receives the necessary education on their condition. A translator would be essential in delivering this information and, in accordance with the National Institute for Health and Care Excellence (NICE) Guidelines (2006a), it is stated that patients should receive written information of the disease in their native language, however if the patient has been exposed to low levels of formal education this can also prove futile in the prevention of the disease (2020 Health 2012).

When considering health care professionals that are caring for the individual affected by TB, their rights need to be acknowledged too as they are at risk of exposure to the disease, thus potentially spreading it to others that they come in to contact with. It would be necessary for the health care professional to ensure that if they did not already have their BCG vaccination, they are given the opportunity to have it. They are eligible to the BCG vaccination due to the environment that they work in (Nazarko 2013).

A health care professional delivering care to the individual with TB has the right to acquire a basic knowledge and understanding of the disease and its implications. It is integral for health care professionals to have access to educational facilities in order to achieve this. In doing so, an understanding of the symptoms of the disease, the available diagnostic techniques and methods of treatment, the appropriate infection control measures that need to be taken by both; the health care professional and the patient is gained (Gonzalez-Angulo et al. 2013). Having this knowledge could help prevent the disease from spreading, ultimately saving lives.

Personal protective equipment in the form of gloves, aprons and FFP3 masks should be provided to health care professionals by organisations when MDR-TB is suspected (National Institute for Health and Care Excellence 2006b). This is to protect the health of the health care professional and to minimise the risk of transmission of the disease to others states Aziz (2008).

Amidst human rights, the health care professional also has the power by law to report any non-compliance with tuberculosis treatment incidents under the Public Health (Control of Disease) Act 1984 and the Public Health (Infectious Disease) Regulations 1988 as suggested by Griffith (2009). Also stated under section 11 of the Public Health (Control of Disease) Act 1984, the health care professional should be aware that cases of TB need to reported, in compliance

with the World Health Organisation to help keep an accurate account of current incident figures.

Conclusion

In conclusion, TB continues to have a global burden on health and poses a threat to the lives of vulnerable people. The disease has had a significant impact on mortality rates globally, though figures are improving within some countries. In order to help eradicate the disease, the research and development of up-to-date methods for diagnosing the disease and treating it need to be seen as a financial priority for governments globally. Other contributable factors to individual health which impose on the human rights of an individual such as poverty, poor accommodation, lack of access to health care facilities and lack of education that may be outwith the individuals' control also needs to be addressed by governments. The health care professional should take in to consideration their human rights when caring for the individual with TB in order to prevent the spread of the disease and to promote best practice.

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