

K.A. TULEBAYEV, K.A. ZHANGIREYEVA

Department of "Health Policy and Management", masters of Public Health, Kazakh Medical University named after S.D. Asfendiyarov, Almaty

### MEDICAL AND SOCIAL, ECONOMIC AND GEOGRAPHIC ASPECTS OF TUBERCULOSIS

*Tuberculosis (TB) is considered a classic, socially conditioned diseases and continues to be a major public health (UN, 2000). In 1882 tuberculosis took at least 200 million lives. 98% of all TB deaths occur in the developing countries, 80% of TB sick people of productive age (15-50 years) (WHO, 2010). The purpose of this paper is to examine and analyze factors that influence the incidence and prevalence of tuberculosis in Kazakhstan.*

**Keywords:** Tuberculosis, epidemiology, medicine, and social factors.

Tuberculosis (TB), an infectious disease, still remains an urgent problem that requires the use of radical measures involving substantial financial investment. Attempts made by many countries to localize (solve) the problem within the country have failed. To reduce the incidence of tuberculosis as a first step it is necessary to study the factors influencing it. The epidemiological situation of tuberculosis is influenced not only by the environmental factors or geographical location of the country, but also by the lifestyle and culture of people living in these regions. At the same time, medical and social factors are dominant in this global problem [1].

Geographical and ecological factors

According to the analysis of the geographical, environmental factors and the epidemiological situation of tuberculosis in the Western Kazakhstan (Aktobe, Atyrau and West Kazakhstan region), it should be noted there is a high prevalence of TB [2]. For example, the Atyrau region with TB incidence of 115.7 per 100 thousand people is considered to be one of the three leaders of the highest TB incidence, following after the East Kazakhstan region (124.0) and Astana (165.6) [2; 3]. A possible reason for these high prevalence rates in these areas in contrast to other regions of the Republic may be due to location of highly concentrated industrial facilities. There is conducted intensive extraction of oil, gas, iron ore with a six-valent chromium, which negatively affects the immune system of inhabitants of these regions [4].

In a number of regions with developed industrial infrastructure in East Kazakhstan and Pavlodar regions major impact on public health has an adverse environment. Highest rates of respiratory diseases are registered in these regions, which subsequently facilitates the development of tuberculosis. As it is well known chronic respiratory diseases are the basis of specific processes in the lungs and bronchi.

Economic factor

The uncertain economic situation of the country has a negative impact on the health system as a whole. From the government position it can be expressed in the lack of medical facilities and personnel of TB services, lack of support of necessary modern equipment, drugs, supplies, and safety equipment [7]. From a community perspective, the economic situation affects the way of life, the lack of proper nutrition, stress state of a person, leading to a decrease in immunity.

Despite the fact that abundant provision is made annually by the state to improve the health, the epidemiological situation of tuberculosis in Kazakhstan remains extremely tense. In recent years, there is a tangible increase number of patients with resistant TB and patients co-infected TB / HIV [2;3].

Medical and social factors

According to National TB Center of the Republic of Kazakhstan the incidence among adolescents and college students is significantly different from that of other age groups. The incidence of adolescents to 100 thousand people in 2010 is 105.4, and the rate of children in the same year is 18.3 per 100 thousand population [3]. The question remains, why 80% of all TB cases are related to people of productive age of 15-45 years? [5]. The answer to this question lies at the root of cultural characteristics of the population and behavioral factors. Lifestyle in the present time is somewhat different from the lifestyle, for example, 10 years ago. Young people, especially young students, often lead an unhealthy lifestyle, misuse of alcohol, tobacco and drugs, have an active night life, which leads to lack of sleep, lack of timely nutrition and malnutrition - all this leads to physical underdevelopment and to decrease the immune system. Accordingly, the risk of get TB is dramatically increased. Young students between the ages of 16 and 25 are vulnerable to tuberculosis [2;3; 7]. One of the factors influencing the incidence of this risk is age-related physiological changes the body: stress, and social factors that are typical of youth (collective gathering, crowded youth, social peer pressure, etc.).

As well, studies have shown that the frequency of the population making medical checkups to professionals is much lesser than required [5]. Many people treat themselves and save time and money on their health, underestimate the severity of symptoms onset, and later turn to doctors, which ultimately can lead to a situation where acquiring a chronic disease, neglect, and sometimes incurable form [6]. Symptoms such as a rise in temperature, night sweats, weight loss, constant fatigue often are missed out and not considered to be serious, sometimes linked to acute respiratory infection symptoms, and worse yet - ignore them. In fact, such symptoms are observed in more severe illnesses - such as pulmonary tuberculosis. Medical unawareness of population affects the detection of advanced forms of tuberculosis [8]. More than half of patients with tuberculosis in Kazakhstan in 2010 were identified in preventive examinations [7]. At the same time there is a low literacy about TB and suspicion of TB among professionals in primary care.

Conclusion:

The factors that influence the incidence and prevalence of tuberculosis should emphasize on the multifactorial causes of TB infection[9].

One of the important challenges in Kazakhshtan is to reduce the incidence rates of tuberculosis faced in young adults. The development of TB is affected by the environment, lifestyle, presence of bad habits and social status of patients.

The result of patients' late request for medical checkup is caused by the lack of opportunities, as well as the lack of education of the population. In some cases the role of low motivation is associated with an underestimation of the state of health, which leads to rapid disease progression.

It is a big challenge to completely eliminate tuberculosis in our republic, but with the help of our TB professionals and the population together we can change the situation and leave a brighter future for our legacy.

**К.А.ТУЛЕБАЕВ, К. А. ЖАНГИРЕЕВА**

ТУБЕРКУЛЕЗ АУРУЫНЫҢ МЕДИКО - ЭЛЕУМЕТТІК, ЭКОНОМИКАЛЫҚ, ЖӘНЕ ГЕОГРАФИЯЛЫҚ АСПЕКТІЛЕРІ

**Түйін:** Мақаламақсаты туберкулез ауруына шалдығумен кең таралуы көрсеткіштеріне ықпал ететін факторларды зерттеу және талдау болып табылады.

**Түйінді сөздер:** Туберкулез, эпидемиология, медицина, элеуметтік факторы

**К. А. ЖАНГИРЕЕВА, К.А.ТУЛЕБАЕВ**

МЕДИКО-СОЦИАЛЬНЫЕ, ЭКОНОМИЧЕСКИЕ И ГЕОГРАФИЧЕСКИЕ АСПЕКТЫ В ЗАБОЛЕВАЕМОСТИ ТУБЕРКУЛЕЗОМ

**Резюме:** В данной работе представлена взаимосвязь географическим, экологическим, медико-социальным и экономическим факторами в отношении заболеваемости туберкулезом. Целью данной статьи является рассмотрение и анализ факторов, влияющих на заболеваемость и распространенность туберкулеза в Республике Казахстан.

**Ключевые слова:** туберкулез, эпидемиология, медицина, социальные факторы.

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