

Study of Nozogeographic Situation and Its Study on the Basis of Sociological Survey

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Abstract

Development of scientific and practical recommendations on improvement of nosogeographic situation by assessing the impact of nosogeographic situation on the territorial structure of diseases and pathological processes of population in Samarkand and Navoi regions. This includes an analysis of the pathological processes associated with the disease of the population of Samarkand, Navoi regions and their districts; Identification and evaluation of natural, socio-economic geographical factors and nosogeographic situation affecting the health of the population in the regions; medical geographical analysis of some infectious diseases occurring among the population of the regions and their specificity; Determine the main problems in the nosogeographical condition of the regions, the prognosis of the existing diseases among the population. The study identified groups and types of diseases that occur in the regions of the region such as Khatirchi, Qiziltepa, Bulungur. The nosocomial situation was assessed on the basis of a sociological survey method.

Keywords: focal diseases, tuberculosis, malaria, medical geoecological, carcinogenic substances.

Introduction

A number of measures are being taken in the Republic to further improve the health of the population, modernize the healthcare system, reduce the number of disease groups and types of disease, and protect maternal and child health. Item 4 of the Strategy of actions for the further development of the Republic of Uzbekistan in 2017-2021 states: "... decrease of morbidity and life expectancy among the population; health services, above all, aimed at improving accessibility and quality of medical and social services."¹

In recent years, many areas of Uzbekistan, including Samarkand region, have been affected by anthropogenic and anthropogenic factors such as pollution of atmospheric air in large cities and villages, various social and environmental problems increase.² Anemia,

respiratory tract, gastrointestinal tract, kidney (stone), viral hepatitis and malignant neoplasms are among the leading diseases associated with household hygiene and lifestyle.³ In Samarkand, the pathology of respiratory diseases is mainly due to the pollution of the city's air with gases emitted by various industrial plants and vehicles, and the polluted air stays in the city streets.^{4,5,6}

Urgut district is the second most common respiratory tract. Like many diseases in the district, the pathology of this disease is mainly tobacco farming in the area. Urgut district provides about 90% of tobacco produced in the Republic.^{7,8} We aim to analyze the emergence and geographical distribution of various diseases within the Navoi region, which species play a leading role in the current environment, and the evolution of the disease, by city and district.

Characteristic of Geocological Problems in Navoi Region

In our research we studied the geocological problems and their impact on human health in the Navoi region. Navoi region is one of the most well-developed regions in the mining, chemical, electro-energy and animal industries. The growth of industrial enterprises and motor vehicles, the intensive use of arable land will lead to further environmental pollution in the area of agricultural chemicalization and so on. In most regions of Uzbekistan, including Navoi region, there is an increasing incidence of various diseases due to origin and other adverse events.

According to the Department of Ecology and Nature Protection of Navoi region, it can be seen that some of the chemical compounds released into the atmosphere from industrial enterprises in the city are higher than the permissible limits (REM). In particular, from the atmospheric air analyzes in Navoi, in January, source No. 3 of NIES reported that NO_x nitrogen oxide was 14.89 g/s and was 0.11 times higher than REM. One of the most common diseases among the population of the region is malignant neoplasms. All the factors that cause tumors are classified into two types: exogenous and endogenous. These include: dietary habits and types of food, 35%, tobacco and nasvay 30%, sunshine 5%, alcohol consumption 3%, industrial waste 18%, and radiation 5%.^{9,10}

The survey was conducted by the author in two months in 2018 (January-February) in Samarkand (Nurabad and Bulungur) and Navoi (Khatirchi and Qiziltepa) regions. A total of 912 respondents from these areas differed in their natural, environmental conditions, demographics, geographical location, economy, and the daily rituals of the people in these districts. Bulungur, Nurabad, Samarkand and Khatirchi and Qiziltepa districts of Navoi region were selected for the study. The Bulungur district of Samarkand region is located on the large transport and highway in the area adjacent to Jizzakh region.

As it is known, Navoi city is one of the largest centers of chemical, mining and construction industries in the country. This city is distinguished not only in this region, but also in the country, in terms of maternal mortality rates, births with congenital malformations, and morbidity of the population with malignant neoplasms.^{11,12}

The main toxic chemicals of tobacco that have a negative impact on human health are the nicotine they contain. It often causes malignant tumors in the mouth, throat, bronchi, esophagus and lungs of the human body. For this reason, tonsils, allergic rhinitis are common in tonsils, chronic bronchitis, asthma, and allergic rehydration, which are allergic to respiratory diseases.¹⁰ In particular, the total incidence of respiratory diseases in Pakhtachi district was 8747.1 in 2005, 15.329.4 in 2010 and 18.652.0 in 2015. We compared the districts in the eastern and western parts of the province to this disease. The most common districts are those of Samarkand, Taylak, Kattakurgan and Akdarya districts.¹³

Samarkand and Taylak districts are specialized in agriculture, horticulture and various pesticides are used in fruit and vegetable growing. They are mainly used by spraying. As a result, it causes inflammation of the upper respiratory system and the development of various allergic diseases.¹⁴ One of the most common diseases among the population of the region is diseases of the digestive system. The incidence of such diseases was 252.4 in 1997, it increased by 364.7 in 2000, in 10445.3 in 2005, and by 14.223.9 in 2010, and in 2015 it increased to 15.839.2.

Another common disease among the residents of Kushrabad district, which is rare in other districts, is the gastrointestinal tract. The prevalence of gallbladder disease is caused by the high levels of calcium, sodium, potassium in the drinking water sources and high water hardness. In Kushrabad district infectious parasitic diseases are among the lowest in other districts. In large cities, where there is a high density of public transport, crowded parks, theaters, and stadiums, the prevalence of infectious diseases (hepatitis A, and flu) is linked to human factors. In addition, migration has a significant impact on the incidence of infectious diseases.^{15,16}

Analysis of the Results of a Sociological Survey

The analysis shows that in recent years, though overall mortality rates, including infant and maternal mortality rates have been declining slightly, overall morbidity rates are increasing. Taking into account this process, the survey was conducted in the slightly ecologically unfavorable areas of these regions. In the present study, it was necessary to cover 15 questions directly related to the research topic from the 20 questions included in the sociological survey.

1. First of all, through the questionnaire, the respondents were defined as provincial and district citizens, their age and sex. The results of the table show that the respondents in each of the four provinces had different ages (Table 1). The study was conducted at the central district hospitals, as well as with the staff of sanitary-epidemiological centers and rural health centers located in these areas.

Table 1. Birth and sex of the respondents (as a percentage of total)

No.	Districts	1950-1959		1960-1969		1970-1979		1980-1989	
		male	female	male	female	male	female	male	female
1.	Bulungur	7.2	9.3	13.4	17.5	10.4	14.5	10.1	17.6
2.	Nurabad	5.8	14.1	12.8	18.9	15.1	19.1	4.7	9.5
3.	Khatirchi	6.6	8.3	8.1	19.7	11.4	13.8	15.1	17.0
4.	Kiziltepa	1.4	15.2	6.8	7.1	4.2	8.2	7.3	13.7

Source: the table is based on the results of a sociological survey.

2. "What diseases are most common in your area?". In the Kiziltepa district, 61.3% of respondents noted that they are more likely to have allergies, gallbladder and kidney stones in their area, more frequent tuberculosis and infectious and parasitic diseases (Table 2).

Table 2. Territorial composition of diseases of the population (as a percentage of total)

No.	Districts	Diseases common in the area		
1	Bulungur	67.8% of accidents and poisonings, gastrointestinal and bone diseases	21.1% are anemia, endocrine disorders, vision organs	11.1% decrease in immune system, digestive system, allergy
2	Nurabad	55.4% of the district has brucellosis, hepatitis, bull	32.6%: skin, bone brucellosis	12.0%: diabetes mellitus, scabies, rumen, and liver disease
3	Khatirchi	51.4%: hepatitis, foot, gastrointestinal tract	41.0%: blood pressure, radiculitis, cirrhosis of the liver, infectious diseases	5.3%: cancer, chronic cholecystitis, tuberculosis, etc. infectious diseases
4	Kiziltepa	61.3% of allergies, gallbladder and kidney stones, tuberculosis, infectious and parasitic diseases	About 32.1%: gastrointestinal and bone diseases	6.6%: hepatitis, vomiting and other infectious diseases

Source: the table is based on the results of a sociological survey.

3. In the questionnaire, “What’s the biggest impact on the health of the population in your area?”, high levels of air pollution in the Kiziltepa district were taken into account as the main cause of illness. Also, 47.7% of respondents in the district stated that drinking water is the main source of many diseases.

4. The question “What infectious diseases are common in your area?”. Most respondents in all three districts emphasized TB. In the Kiziltepa and Bulungur districts, response sheets show a relatively high TB rate of over fifty percent, in Khatirchi district 37.1 percent, and in Nurabad, about 31.0 percent.

5. Participants were also asked whether the air pollution in your area is harmful to human health. This question allows us to think more fully about the environmental situation of these areas. Kiziltepa district (59.2%) had the highest number of answers “Yes, it does”. This indicator is slightly lower in Bulungur (46.8), Nurabad (27.5) and Khatirchi districts (23.9). In

the Khatirchi district, on the contrary, the “no” answers are common. There are also many who cannot comment on this question.

6. In four districts, the question “How are the people in your area provided with health facilities?” has received a very interesting answer. Kiziltepa district (22.3%) had the highest “negative” answers – 15.1% in Khatirchi district, 12.4% in Nurabad district and 9.7% in Bulungur district.

7. When respondents were asked: “What do you think is the main cause of maternal mortality in your area?”, most respondents mentioned anemia, childbirth, and death due to cervical and breast cancer. Especially in Kiziltepa district due to severe environmental conditions, the number of malignant tumors among mothers is growing. It should be noted that maternal mortality in 2017 was 93.5 per 100.000 live births, which is several times higher than the national average (Table 3).

Table 3. The main causes of maternal mortality (percent)

No.	Districts	Anemia	Birth processes	Cervical cancer	Infectious Diseases
1.	Bulungur	18.9	38.9	29.2	13.0
2.	Nurabad	21.4	41.4	33.7	3.5
3.	Khatirchi	20.9	48.2	28.0	2.9
4.	Kiziltepa	13.6	37.0	38.1	11.3

Source: the table is based on the results of a sociological survey.

8. The question “What illnesses are most common among children in your area?” has also given controversial results. It is well known that the most common group of children and their deaths are respiratory diseases. In all four districts surveyed, infant mortality rates are close to the national average, but the incidence and morbidity rates vary widely (Table 4).

Table 4. The most common diseases in children (in% to total)

No.	Districts	Born defects	Anemia	Gastrointestinal diseases	Complications related to delivery (trauma)	Respiratory diseases
1.	Bulungur	25.7	14.7	19.1	23.3	17.2
2.	Nurabad	23.3	10.1	16.9	30.1	11.4
3.	Khatirchi	17.0	17.4	11.8	27.7	26.1
4.	Kiziltepa	31.5	13.1	9.3	21.9	30.8

Source: the table is based on the results of a sociological survey.

9. The question “Where do you usually get drinking water from your household (from a well, from a river, canal or ditch, from other areas)?” is also included in the questionnaire. However, in many regions of the country, access to these sources remains one of the most pressing problems. As a result of the research, we have received the following answers: most of the wells used as the main water source came from Nurabad district, as well as the majority of river, canal or arable water users. The majority of household water users were identified by Khatirchi district respondents. But its share was only

9.8%. In Nurabad district, the indicators are the lowest (0.6 percent).

10. The question “How do you assess the medical, hygienic, and environmental quality of the population in your area?” Was given by the respondents: The majority of the respondents rated this situation as “poor” (19.3%) (Table 5). It can be concluded that in each of the four districts surveyed, some negative results were reported in Kiziltepa district and in Bulungur district.

Table 5. Results of assessment of medical, hygienic and environmental quality of population (in percent)

No.	Districts	Bad	Medium	Good	Excellent
1.	Bulungur	14.1	43.2	38.3	4.4
2.	Nurabad	17.2	52.4	28.0	2.4
3.	Khatirchi	10.9	53.8	31.8	3.5
4.	Kiziltepa	19.3	58.5	21.3	0.9

Source: the table is based on the results of a sociological survey.

In general, the results of such a survey of the population in the regions of medical geographical surveys provide reliable information on the nosogeographic situation of these regions and serve as the basis for the implementation of the necessary measures.

Conclusions

As a result of many years of research, based on the evaluation of natural, socio-economic factors influencing the nosogeographic situation in the regions, the public health problems and recommendations for their solution were developed; revealed that the epidemiological source of some infectious diseases is associated with economic specialization and epizootic situation, i.e. the range of brucellosis and other diseases is related to livestock.

The results of the research show that the types and types of diseases that occur in the population differ sharply in urban and rural areas. In fact, Samarkand and Navoi, the largest cities, have a high incidence of respiratory diseases and malignant neoplasms, nervous system, allergic diseases. The main reason for this is that the cities, in particular, have some negative aspects of the nosocomial situation in Navoi. Most of the industrial

facilities in the city are not equipped with modern technical equipment and require repair and high level of modernization. At the same time, the incidence of the outbreak is very high in the regions.

Ethical Clearance: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study. A study was approved by National Ethics Committee of Uzbekistan, October 4, 2019, No 415-I.

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