RETROSPECTIVE EPIDEMIOLOGICAL ANALYSIS OF COVID-19 INFECTION INCIDENCE IN TASHKENT CITY FROM 2020 TO 2023 AND THE FIRST HALF OF 2024

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This thesis presents a retrospective epidemiological analysis of COVID-19 infection incidence in Tashkent city from 2020 to 2023 and the first half of 2024. The study investigates the dynamics of infection spread across various districts of Tashkent city and identifies factors influencing the spread of the disease. The results indicate that infection rates significantly differ between districts, with some periods showing higher rates of infection.

COVID-19, a respiratory infection caused by the SARS-CoV-2 virus, spread rapidly worldwide in late 2019, resulting in a global health crisis. In Uzbekistan, during the pandemic, infection rates increased, and the infection intensity varied across different regions. Tashkent city, as the capital of Uzbekistan, had the highest infection rates. The purpose of this study is to examine the dynamics of COVID-19 spread in Tashkent city, especially the infection waves, and evaluate the effectiveness of preventive measures.

COVID-19, caused by the SARS-CoV-2 virus, became a global pandemic, leading to widespread morbidity and mortality. The infection spread rapidly across the world starting in December 2019, with significant effects on public health. In Uzbekistan, COVID-19 spread at varying rates, and the impact was most severe in Tashkent city. This study aims to explore the spread dynamics of COVID-19 in Tashkent and assess the effectiveness of various preventive measures, including lockdowns, social distancing, and vaccination campaigns.

The study uses a retrospective analysis method, relying on data from the Tashkent Health Department. The study period spans from March 2020 to June 2024. The dynamics of infection spread were analyzed based on the incidence rate per 100,000 population. Demographic factors, including age, gender, and migration status, were also studied. The epidemiological analysis includes an assessment of the impact of preventive measures such as quarantine, social distancing, and vaccination campaigns.

Discussion. The study results show that the COVID-19 incidence in Tashkent was twice as high as the national average. At the end of 2020, the incidence rate was 2,842.67 per 100,000 people. By 2021, this rate increased to 4,158.3. From March 2020 to January 2022, the incidence rate sharply increased, but starting from January 2022, a decreasing trend was observed, with infection rates significantly decreasing by 2023.

The study identified four major infection waves:

- First wave (June-September 2020): The incidence rate increased from 49.9 to 630.3 per 100,000 population.
- Second wave (June-July 2021): The rate rose from 302.9 to 1,320.1.
- Third wave (December 2021 - January 2022): The rate increased from 59.5 to 809.36.
- Fourth wave (June-September 2022): The rate increased from 41.57 to 494.96.

The highest infection rates were observed in June-July 2021, coinciding with the global peak of the pandemic. In the second half of 2022 and 2023, infection rates significantly decreased due to the implementation of preventive measures, including vaccination campaigns.

The study also revealed differences in infection rates across various districts of Tashkent city. For instance, Bektemir district had a significantly higher incidence rate, with 5,502.1 per 100,000 people, while Sirgali district had a relatively low rate of 307.5 per 100,000 people. These differences were primarily due to migration levels, population density, and the implementation of local preventive measures.

Conclusion

This retrospective epidemiological analysis shows significant variation in the spread of COVID-19 infection across different districts of Tashkent city. The effectiveness of preventive measures and vaccination campaigns played a crucial role in reducing infection rates. However, the differences in infection spread between districts highlight the importance of social and health infrastructure, as well as the effective implementation of migration controls and preventive measures.

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