COVID-19 Death in Novi Pazar - "Serbian Bergamo"

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Abstract

Serbia was one of the countries in Europe and the world that were most affected by the coronavirus disease 2019 (COVID-19) pandemic. City Novi Pazar was the greatest coronavirus hotspot in Europe on July 1, 2020, due to several hundred infected people. Even though united data were published at the state level, there are no data by region or city, so the interpretation of the COVID-19 epidemic in Serbia at the regional level is difficult. Different levels of health care and health education of citizens and the degree of respect for the proposed epidemiological measures have led to significant differences in the number of tests, a large number of infected, and several deaths by regions and cities. Insufficiently precise and up-to-date keeping of records and statistical data on COVID-19 at the state and local level also complicates the pandemic's scientific and epidemiological analysis. Novi Pazar is a city in southwestern Serbia with a population of 100,000. It is similar in population to the city of Bergamo, in northern Italy in the Lombardy region. As of July 1, 2020, Novi Pazar had 300% higher mortality per 100,000 population compared with the same month last year, and almost 10 times higher mortality than the rest of Serbia.

Serbia is one of the countries in Europe and the world that were most affected by the coronavirus disease 2019 (COVID-19) pandemic. City Novi Pazar was the greatest coronavirus hotspot in Europe on July 1, 2020, due to several hundred infected people. Even though united data were published at the state level,[1] there are no data by regions or cities, so the interpretation of the COVID-19 epidemic in Serbia at the regional levels is difficult. Different levels of health care and health education of citizens, as well as the degree of respect for the proposed epidemiological measures, have led to significant differences in the number of tests, the number of infected, and the number of deaths by regions and cities. Insufficiently precise and up-to-date keeping of records and statistical data on COVID-19 at the state and local level additionally complicates the scientific and epidemiological analysis of the pandemic situation.[1]

Discussion

Novi Pazar is a city in the southwestern part of Serbia with a population of 100,000.[2] It is similar in population to the city of Bergamo, in the northern part of Italy in the Lombardy region, which is, according to the data between January 2020 and April 2020 (data up to April 11), the city with the highest mortality from COVID-19 infection in Europe.[3] During the month July in 2020, the official data of the Institute of Public Health in Novi Pazar indicates that 3524 citizens were tested (the total number of tested on June 30, 2020, is 4571, and this number is 8095 on July 31, 2020).[4] In the same month, there were 472 patients with positive "rapid" serological (proving the presence of immunoglobulin [Ig]M antibodies to the severe acute respiratory syndrome coronavirus 2 [SARS-Cov2] virus test; Innovita 2019-nCoV Ab Test, Innovita Biological Technology Co., Ltd., China) and/or polymerase chain reaction (PCR) test (number of positive ones on June 30, 2020 is 509, and number of positive ones on July 31, 2020, is 981).[4] In the same month at the level of the state of Serbia, the number of tested patients was 259,118, the number of positive people was 10,716, and the number of COVID-19 deaths was 292.[1]

By analyzing these data, it was found that, in July 2020, of the total number of tested citizens in Serbia, 1.36% were tested in Novi Pazar, and the number of positive results in Novi Pazar was 4.4% of the total positive patients from COVID-19 infection in Serbia. Unfortunately, the number of deaths in Novi Pazar does not exist on the official websites of health institutions. This is somewhat understandable because of the number of deaths that occurred in larger health centers and tertiary referral facilities where patients are referred for further treatment, a certain number of patients died at home and a large number of patients died during the diagnostic process without full confirmation of COVID-19 infection, due to late reporting to the medical staff or due to clumsy and slow medical processing. However, by the end of July 2020, the local institution that deals with funerals (Javno komunalno preduzeće, "Čistoća"; [in Serbian] or public waste management company), and through which every death is registered for burial (there are no

Table 1. COVID-19 surveillance data in the Novi Pazar and the rest of Serbia for July 2020

	Population (million)	Cases	Deaths	Case fatality rate
Novi Pazar	0.1	472	110	23.3%
Rest of Serbia	6.9	10,716	292	2.72%

cremations in the city) published data on the total number of funerals during the first 7 months of 2020 and for the same period during previous five years (Supplementary appendix). As of July 1, Novi Pazar had 300% higher mortality per 100,000 population compared with the same month last year, and almost 10 times higher mortality than the rest of Serbia (Table 1). Novi Pazar and the region of Sandzak were affected by the COVID-19 outbreak after pre-election rallies and campaigns with a possibly delayed public health response and uncontrolled transmission between asymptomatic individuals at the community level.

Mortality rates provide more definite information and truly quantify how deadly COVID-19 is over a period of time. The development of many cases fixed within a short time frame filled hospitals. Pressure on medical and hospital services might have affected the health services' preparedness negatively. Also, these services might not have been adequately supported and integrated with the community and primary care services. Regional-level data from outside of Serbia might help to put Novi Pazar's data into context. Novi Pazar's data were compared with those from other international settings that were similar in terms of urbanization and sociodemographic characteristics.

Analysis by mid-June, 2020, at the local authority level (Nomenclature of territorial units for statistics 3 [small regions for specific diagnoses], NUTS3) across Europe shows that the highest rates of excess mortality were in areas in Central Spain and Northern Italy; Bergamo had the highest peak excess mortality of 847.7% (around March 20, 2020) compared with the highest in the United Kingdom, Brent at 357.5% (around April 17, 2020).[5] Novi Pazar in the second week of July had the highest mortality peak of 457%.

Even with the different regional policies, comparing the numbers of cases and deaths by region does not make much sense, is there a way to explain the crude case fatality rate in Novi Pazar (23.3%) being approximately 10 times higher than the rest of Serbia (2.27%, as of July 31, 2020) (Table 1)? Unfortunately, these data have little epidemiological value to show excess mortality in Novi Pazar, but it is important that they are shown and exist.

Conclusions

Although the region of Novi Pazar is counting deaths and infected patients, what is missing in Serbia and in many other countries affected by the pandemic is a robust system of epidemic intelligence that can provide much needed, solid, epidemiological data at the regional level to inform modeling of disease transmission at the population level and what can ultimately be used to offer effective guidance on public health action. Data-affiliated factors that are linked to varying case fatality rates throughout regions should be investigated in different regional testing strategies and scopes.

References

1. https://covid19.rs/
2. OP3C. Ethnicity data by municipalities and cities. https://pod2.stat.gov.rs/ObjavljenePublikacije/Popis2011/Nacionalna%20pripadnost-Ethnicity.pdf. Accessed October 22, 2021.
3. **Piccininni M, Rohmann JL, Foresti L, et al.** Use of all cause mortality to quantify the consequences of covid-19 in Nembro, Lombardy: descriptive study. *BMJ.* 2020;369:m1835. doi: 10.1136/bmj.m1835
4. **Zavod Za Javno Zdravlje**. Informacija CORONAVIRUS 19–31.07.2020. https://zzjznp.rs/2020/07/31/informacija-coronavirus-covid-19-31-07-2020-godine/
5. **Office for National Statistics**. Comparisons of all-cause mortality between European countries and regions: January to June 2020. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/comparisonsofallcausemortalitybetweeneuropeancountriesandregions/januarytojune2020. Accessed October 16, 2021.