
CONSIDERATIONS ON THE EVOLUTION OF THE COVID-19 PANDEMIC, IN THE FOURTH WAVE, IN GORJ COUNTY

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Abstract:

***PURPOSE:** THE STUDY HIGHLIGHTS THE DYNAMICS OF THE EVOLUTION OF THE COVID-19 PANDEMIC IN GORJ COUNTY, BETWEEN 15.09.2021-01.12.2021, PERIOD CORRESPONDING TO THE FOURTH WAVE OF THE PANDEMIC, MANIFESTED AT NATIONAL LEVEL. THE STUDY FOCUSED, ON THE ONE HAND, ON REVEALING THE CHARACTERISTICS OF THE PANDEMIC EVOLUTION IN THE URBAN ENVIRONMENT OF GORJ COUNTY, AND ON THE OTHER HAND ON HIGHLIGHTING THE DEGREE OF SOCIAL INVOLVEMENT OF PEOPLE WITH HIGHER EDUCATION IN COMBATING THE SPREAD OF THE PANDEMIC, BY ACCEPTING / REJECTING VACCINATION AGAINST COVID-19. THIS LED TO CONCLUSIONS ABOUT THE REASONS BEHIND THE HESITATION OR REFUSAL OF VACCINATION AGAINST THE SARS-COV-2 CORONAVIRUS.*

***METHODS:** THE STUDY WAS BUILT ON THE BASIS OF STATISTICAL ANALYSIS OF AVAILABLE OFFICIAL DATA AND A QUESTIONNAIRE APPLIED ONLINE TO PEOPLE WITH A MINIMUM AGE OF 21, GRADUATES OF HIGHER EDUCATION AND WITH PERMANENT RESIDENCE IN GORJ COUNTY.*

***RESULTS:** THE STUDY SHOWS A LOWER ACCEPTANCE OF COVID-19 VACCINES, COMPARED TO THE MANDATORY AND OPTIONAL VACCINES FOUND IN THE NATIONAL VACCINATION SCHEDULE. ON THE OTHER HAND, IT HIGHLIGHTS THE LOW LEVEL OF TRUST IN THE ROMANIAN MEDICAL SYSTEM COMPARED TO THE LEVEL OF TRUST IN DOCTORS. LAST BUT NOT LEAST, IT REVEALS HIGHER PERCENTAGES OF ACCEPTANCE OF THE COVID-19 VACCINATION OF PEOPLE FROM URBAN AREAS IN GORJ COUNTY AND THOSE WITH HIGHER EDUCATION.*

***CONCLUSIONS:** THE STUDY CONFIRMS THE INITIAL HYPOTHESIS REGARDING THE HIGHER DEGREE OF SOCIAL RESPONSIBILITY OF PEOPLE LIVING IN URBAN AREAS AND THOSE WHO HAVE GRADUATED HIGHER EDUCATION.*

Keywords:

PANDEMIC, COVID-19, GORJ, VACCINATION, URBAN, HIGHER EDUCATION.

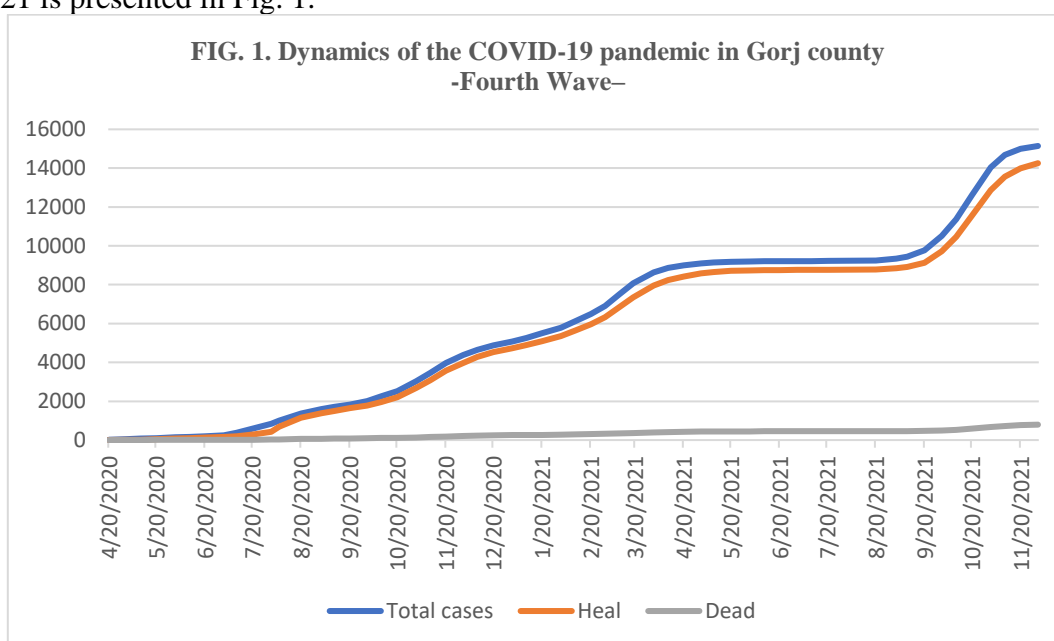
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THE EVOLUTION OF THE COVID-19 PANDEMIC IN GORJ COUNTY

The fourth wave of the COVID-19 pandemic is still ongoing in Romania, and the emergence of a new mutation, identified by the World Health Organization as Omicron, raises serious concerns of the international medical community, due to the high degree of contagion (digi24.ro, 2021) and the fact that there is a suspicion that it may become the dominant strain. Some European countries, such as Germany, France and the United Kingdom, have entered the fifth wave of the pandemic, reporting daily records of the number of infected and dead, which leads us to think of a potential new increase in cases of infections in Romania too.

The first case of infection with the new coronavirus SARS-CoV-2, in our country, was registered in Gorj County, on February 26, 2020 (romania.europalibera.org, 2021). The subsequent evolution of the cases of illness with the new coronavirus (dsp-gorj.centruldecalcul.ro, 2021), in Gorj county, until 01.12.2021 is presented in Fig. 1.

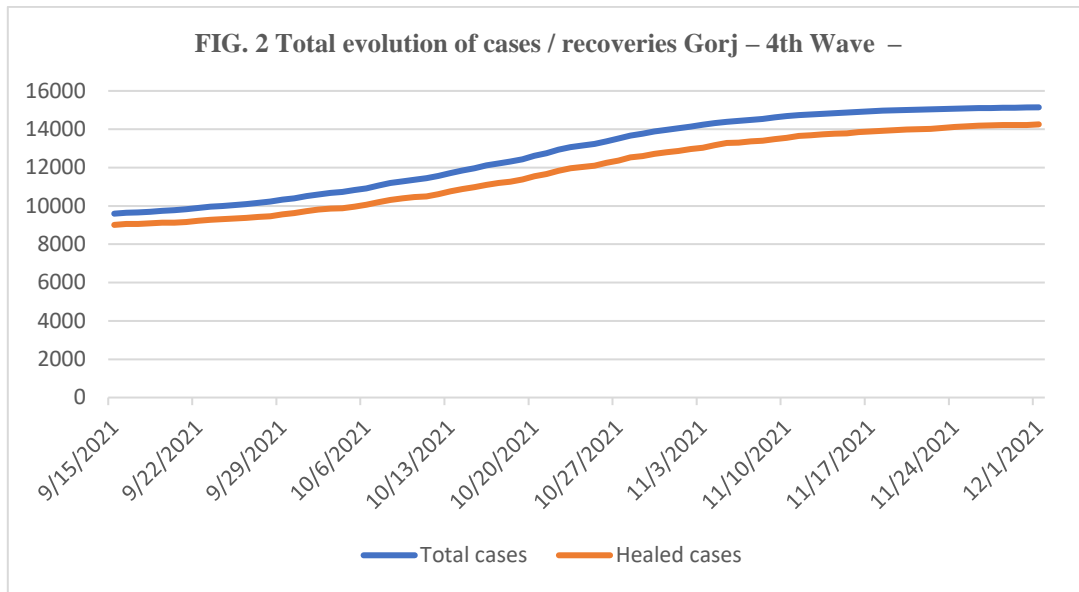


Data source: dsp-gorj.centruldecalcul.ro, vaccinare-covid.gov.ro, graphs.ro, datelazi.ro

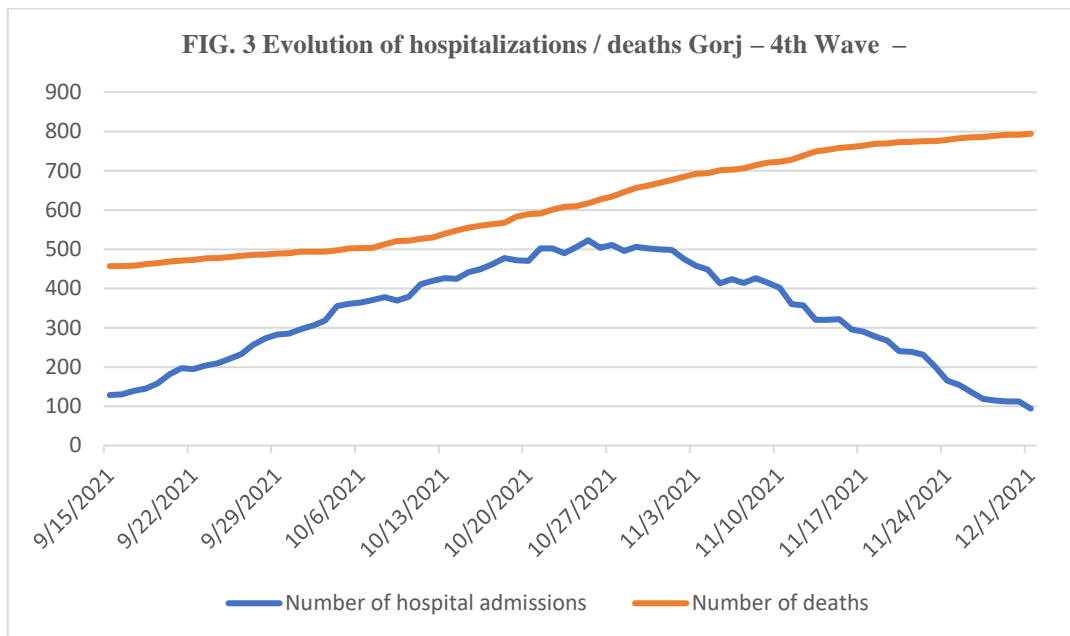
At the level of Gorj county, the dynamics of the COVID-19 pandemic presented the following characteristics, relatively similar to those registered at national level (Peptan and Peptan, 2021, pp. 161-174):

- Progressive increase in the number of infected people, from August 2020 to the end of December 2020 (corresponding to the second wave recorded nationally);
- Sharp increase in the number of infected people between the second half of March 2021 and the beginning of May 2021 (corresponding to the third wave recorded nationally);
- Manifestation with a special dynamism of the pandemic, starting with September 2021 (corresponding to the fourth wave registered at national level);

For the fourth wave of the pandemic, the evolution at the level of Gorj county (dsp-gorj.centruldecalcul.ro, 2021) of the dynamics of the COVID-19 pandemic is presented in Fig. 2-3.



Data source: dsp-gorj.centruldecacul.ro, vaccinare-covid.gov.ro, graphs.ro, datelazi.ro



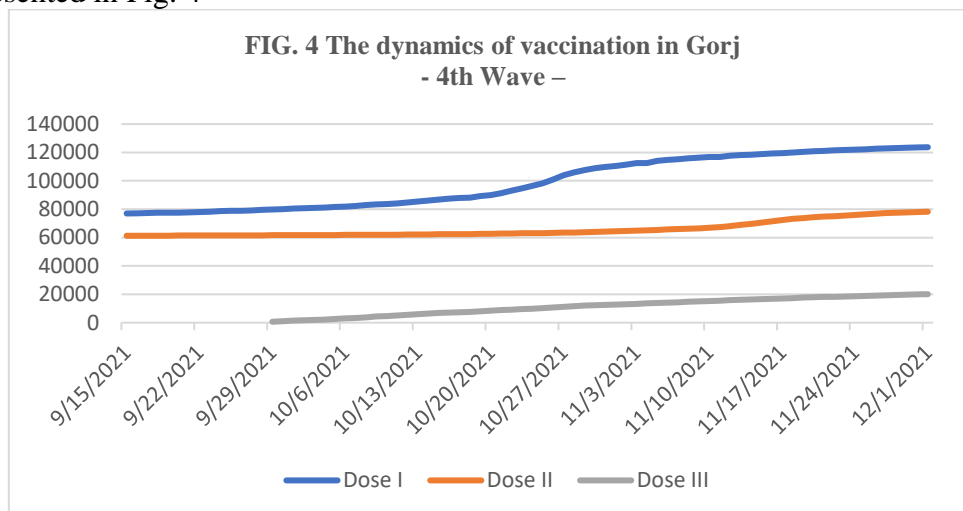
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The characteristics of the COVID-19 pandemic dynamics, at the level of Gorj county, in the fourth wave, highlight:

- The gradual increase in the number of people infected with SARS-Cov-2 coronavirus until mid-November 2020, when there was a decrease in the number of those affected, which predicts optimistic prospects in the future evolution of the pandemic;
- The virulence of the incidence of coronavirus marked by the increase in the number of hospitalized persons in specialized hospital units until the beginning of November 2021, a temporary landmark from which the number of hospitalized decreased to values comparable to those recorded at the beginning of the fourth wave of the pandemic;

- Despite the declining dynamics of the pandemic after 01.11.2021, the number of deceased persons continued to increase until the end of the analyzed period, which highlights the degree of danger that SARS-Cov-2 coronavirus poses to the health of the population.

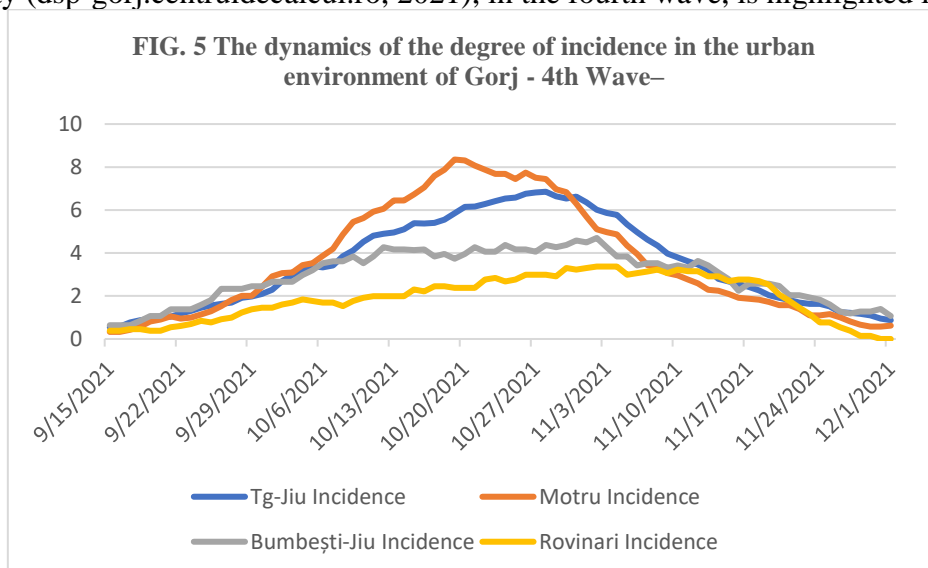
Although the role of vaccination of the population in combating SARS-Cov-2 coronavirus has been scientifically demonstrated, in Gorj there was no significant increase in the population's availability for vaccination. Its dynamics, according to statistical data (dsp-gorj.centruldecacul.ro, 2021), is presented in Fig. 4



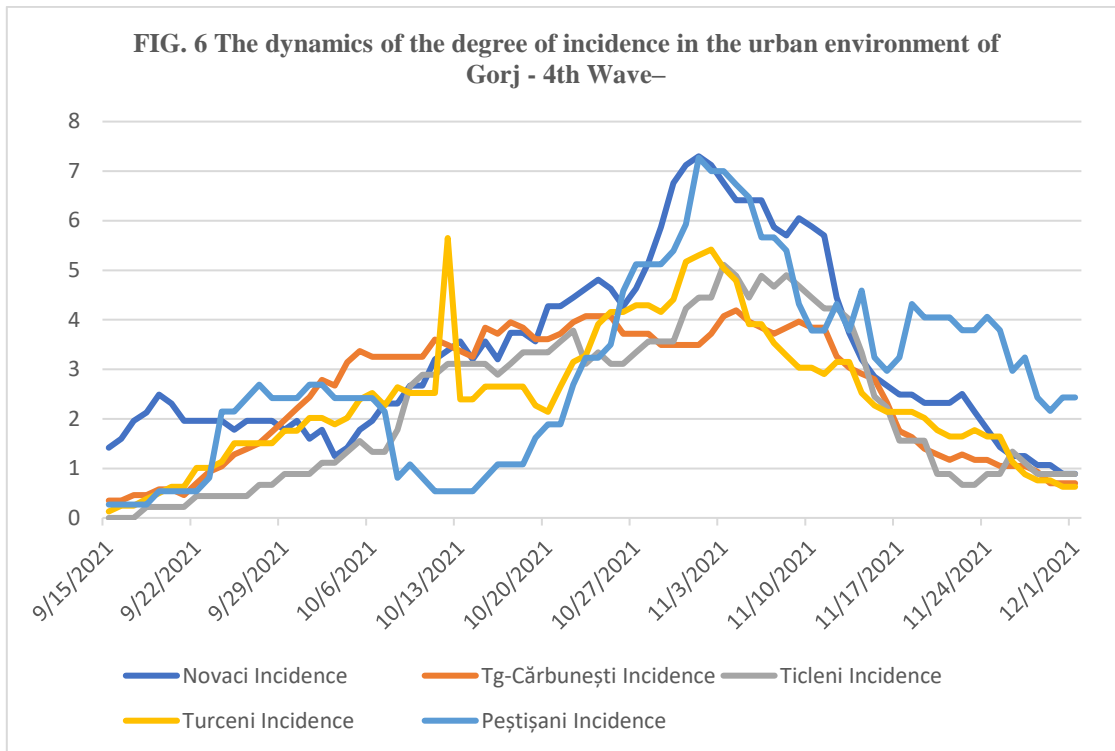
Data source: dsp-gorj.centruldecacul.ro, vaccinare-covid.gov.ro, graphs.ro, datelazi.ro

Against the background of a pro-vaccination public rhetoric and some administrative decisions adopted by the state authorities, applicable to unvaccinated persons, there was a significant increase in the number of vaccinated persons between 20.10.2021-10.11.2021, after which there is a decrease in the interest of persons for vaccination.

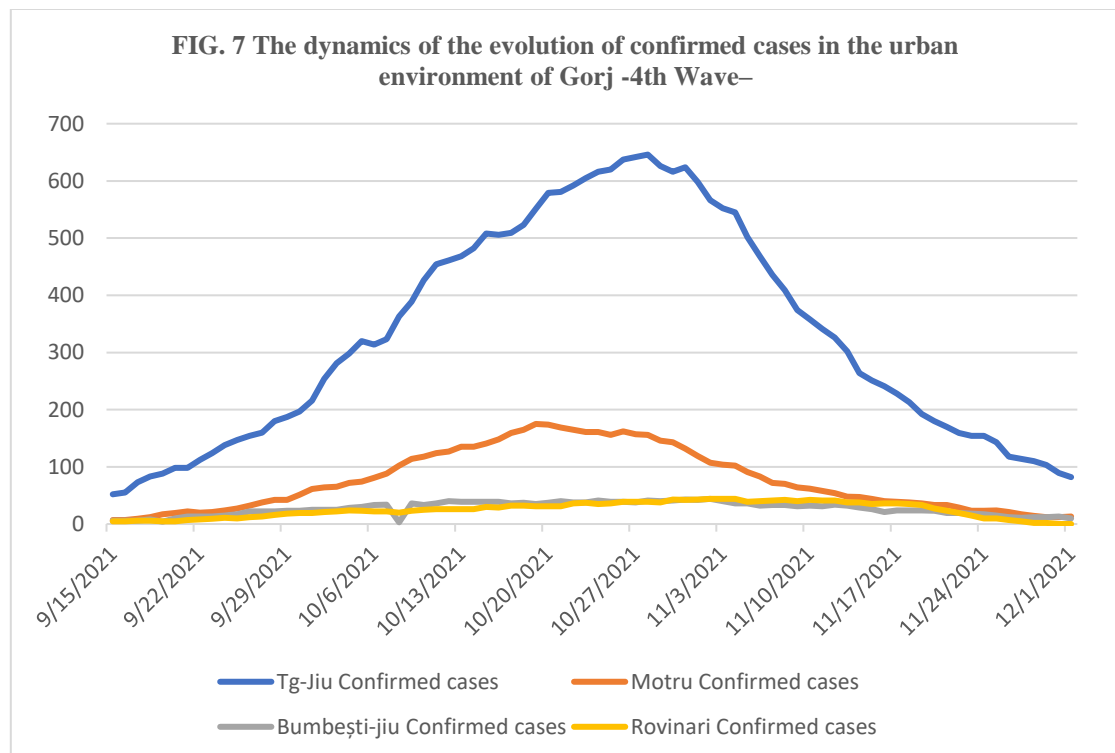
Compared to the indicators “the degree of incidence over the last 14 days” and “the number of people infected with the SARS-CoV-2 coronavirus”, the dynamics of the pandemic in the urban area in Gorj County (dsp-gorj.centruldecacul.ro, 2021), in the fourth wave, is highlighted in Fig. 5-8



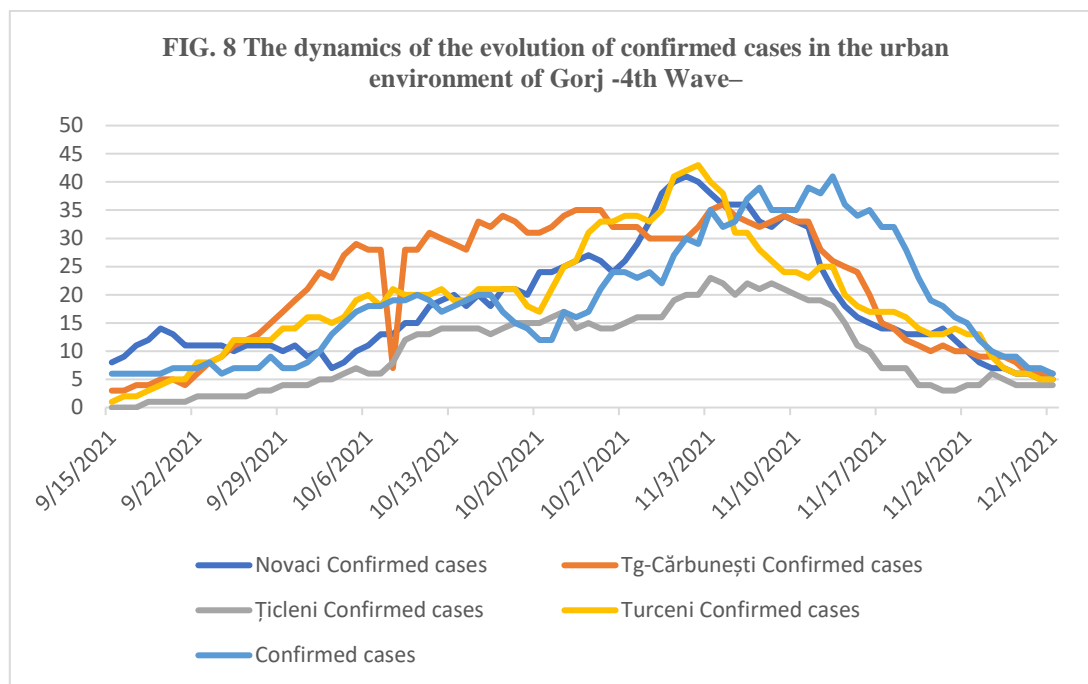
Data source: dsp-gorj.centruldecacul.ro, vaccinare-covid.gov.ro, graphs.ro, datelazi.ro



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The following conclusions can be drawn:

- The incidence rate has experienced a non-linear increase since the beginning of the fourth wave of the pandemic, reaching a maximum in the last decade of October 2021, in the case of larger urban settlements in Gorj County (Târgu Jiu, Motru, Rovinari and Bumbești Jiu), respectively in the first decade of the following month for the other urban settlements in the county (Novaci, Tismana, Țicleni, Tg-Cărbunești and Turceni).
- A variation curve with similar characteristics is also recorded in terms of the dynamics of the evolution of confirmed cases.
- There has been a sharp decline in both the incidence rate and the number of confirmed positive cases of SARS-CoV-2 coronavirus infection since November 2021, with optimistic prospects for reducing the impact of the pandemic.

SCIENTIFIC RESEARCH METHODOLOGY

Participants

The present study was based on a questionnaire that was applied to people in Gorj County during the fourth wave of the COVID-19 pandemic in Romania. We chose to distribute the questionnaire online due to the impossibility of applying it face to face, due to the existing epidemiological conditions.

The target group had to meet three cumulative conditions in order to participate in completing the questionnaire, namely: 1) minimum age of 21 years; 2) permanent residence in Gorj County; 3) to be graduates of higher education.

Procedure

The questionnaire was posted on social networks, covering over 70% of the localities of Gorj County. It was designed on the Google Forms platform and did not include identifiers of the respondents, being completely anonymous.



Measurements

We aimed to extract data on the degree of acceptance of vaccines included in the national vaccination scheme but also of optional vaccines. Starting from these two variables, we aimed to see what is the acceptability rate of these and of the anti-COVID-19 vaccines. We also sought to identify the reasons behind the respondents' decisions not to accept the COVID-19 vaccination.

Statistical analysis

The analysis and data processing were performed in the Excel program, part of the Microsoft Office Professional Plus 2019 package, aiming to present the results in a clear way. Thus, the variables underlying the analysis concerned the age of the participants, the level of education (in order to determine whether there is a difference of opinion depending on them) and the acceptance of the vaccines included in the compulsory vaccination scheme and optional vaccines.

RESULT

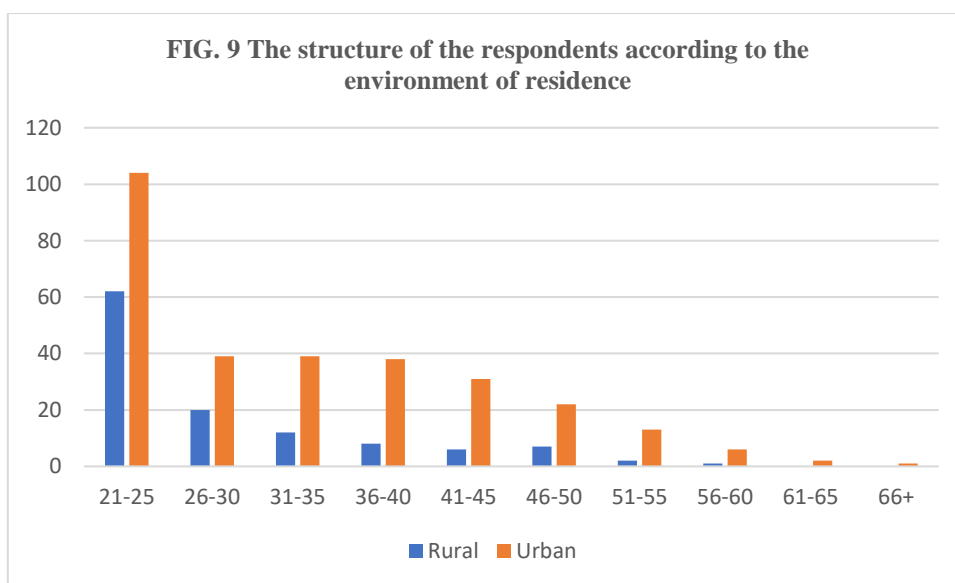
In the present study we analyzed a number of 413 valid answers. The socio-demographic data of the participants are presented in Table 1.

Data	Rural	Urban	Total
21-25 years	62	104	166
PhD.		1	1
Faculty	46	76	122
Masters	16	27	43
26-30 years	20	39	59
Faculty	8	19	27
Masters	12	20	32
31-35 years	12	39	51
PhD.	1	1	2
Faculty	7	20	27
Masters	4	18	22
36-40 years	8	38	46
PhD.		4	4
Faculty	4	19	23
Masters	4	15	19
41-45 years	6	31	37
PhD.	1	3	4
Faculty	4	19	23
Masters	1	9	10
46-50 years	7	22	29
PhD.	2	10	12
Faculty	3	7	10
Masters	2	5	7
51-55 years	2	13	15
PhD.	1	5	6
Faculty		3	3
Masters	1	5	6
56-60 years	1	6	7
PhD.		1	1
Faculty	1	2	3
Masters		3	3

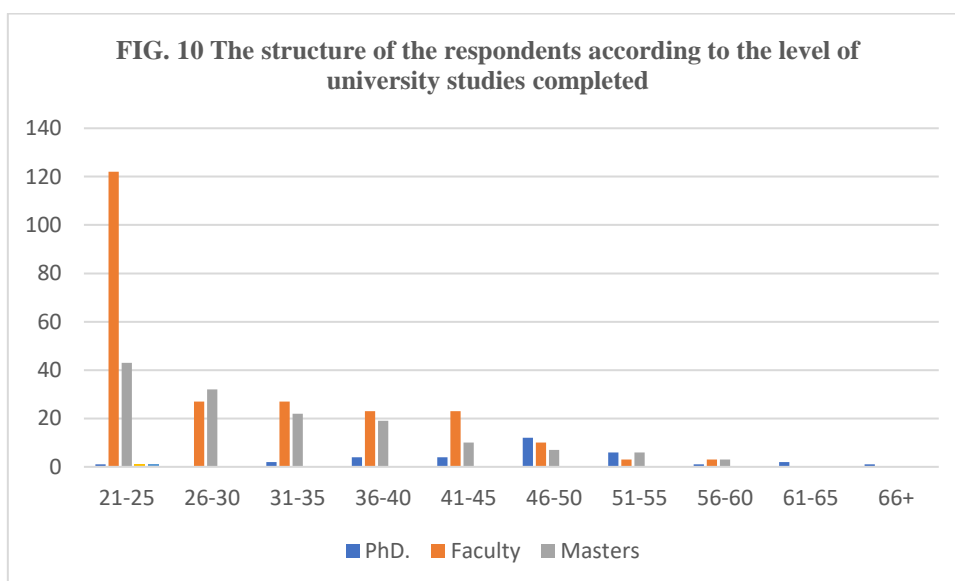
61-65 years		2	2
PhD.		2	2
66+ ears		1	1
PhD.		1	1
Total	118	295	413

Table 1. Socio-demographic data of the participants

The structure of the respondents according to the environment of residence is presented in Fig. 9. It is noted that 71.43% come from urban areas and 28.57% from rural areas.

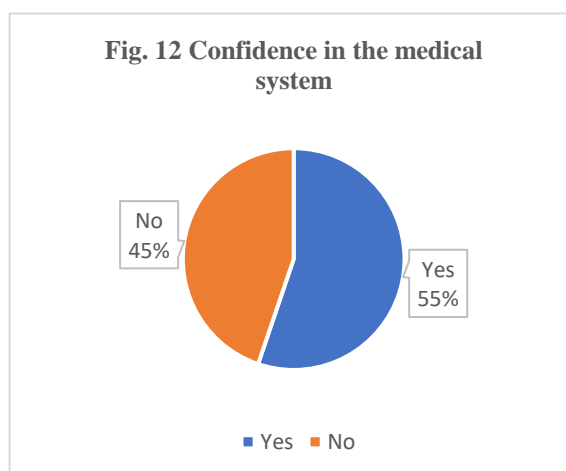
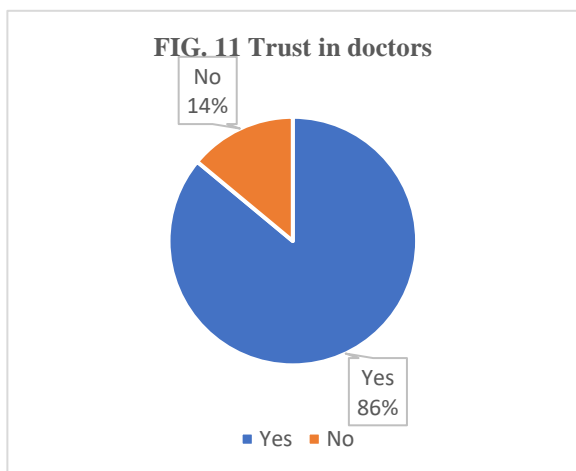


The structure of the respondents according to the level of graduated university studies, related to each age category, is presented in Fig. 10.

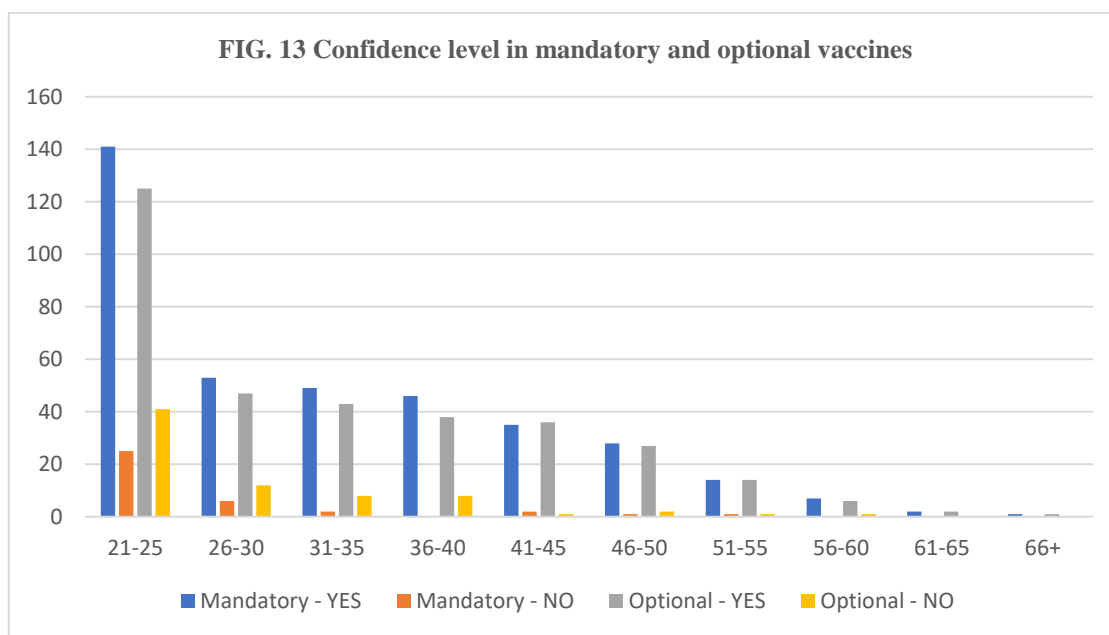


The level of trust given to doctors and the medical system

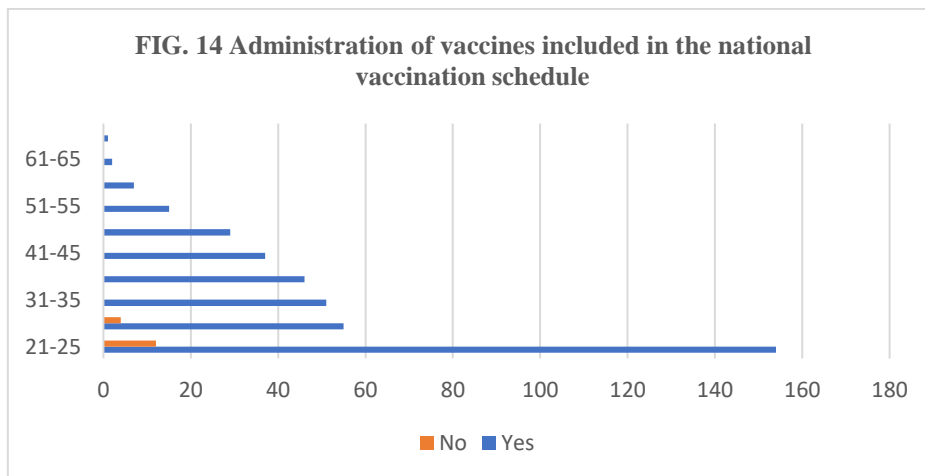
The respondents have a much higher degree of trust in doctors than in the Romanian medical system, according to the representations presented in Fig. 11 - 12.



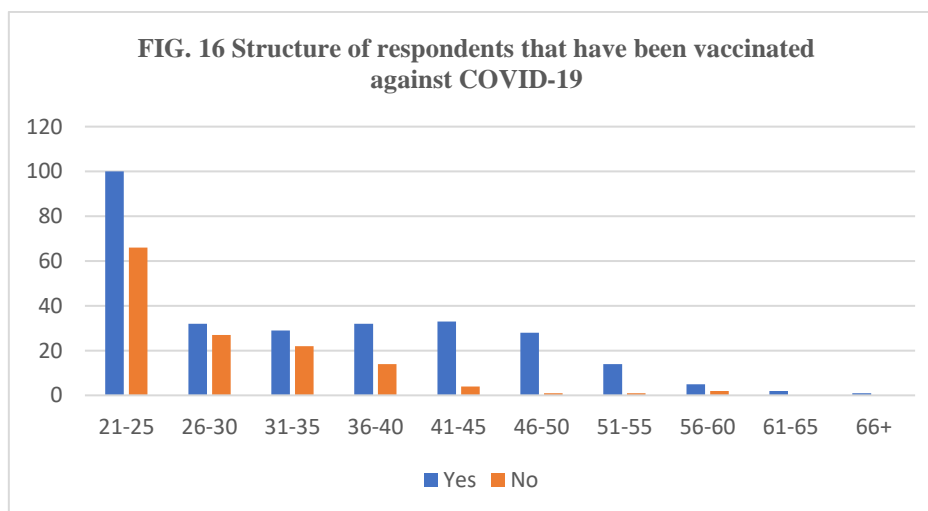
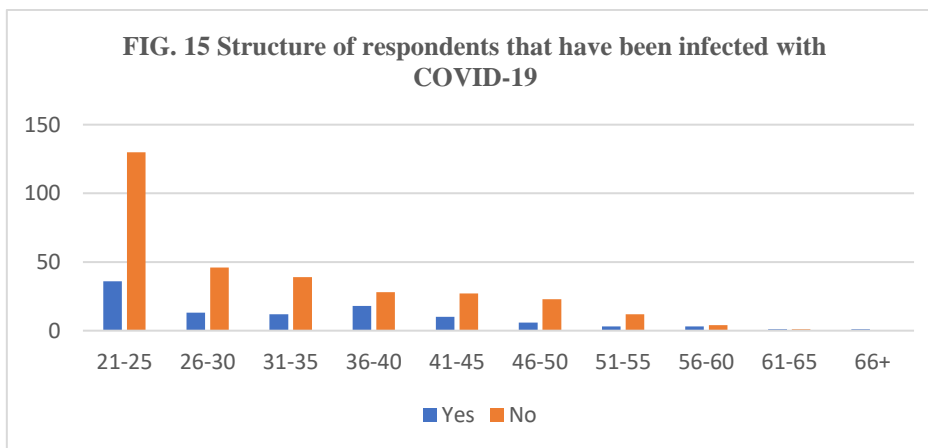
The confidence rate of respondents in vaccines included in the national vaccination scheme is 91.04%. With regard to optional vaccines other than COVID-19 vaccines, the percentage of respondents who trust such vaccines is 82.08%. The structure of the respondents by age groups, who express their confidence in the previously mentioned vaccine categories is presented in Fig. 13.



The percentage of vaccination of the respondents with the vaccines included in the national vaccination scheme is 96.13%, the structure by age groups being presented in Fig. 14.



The structure of the respondents who have been infected with COVID-19 and who are vaccinated against COVID-19, by age intervals, is presented in Fig. 15-16. The statistical processing of the obtained data shows that the percentage of people who agreed to be vaccinated against the SARS-Cov-2 virus is 66.83%, and a percentage of 24.94% of the respondents have been infected with COVID-19.





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DISCUSSIONS

Regarding the structure of the respondents, it should be noted the availability of graduates of higher education in the age categories 21-25 years and 26-40 years (in percentage of 35.24%, respectively 39.32% in urban areas and 52.54%, respectively 33.89% in rural areas), to answer the questions in the questionnaire, which highlights a high degree of social responsibility.

The level of trust of respondents in the Romanian medical system (55%) is lower than the level of trust in doctors (86%), an issue that can be explained in the opinion of the authors by the inconsistency in strategic decision makers in managing the complex problems in recent decades (economist.com, 2019; bbc.com, 2010; euronews.com, 2021).

The level of confidence of respondents in vaccines included in the national vaccination scheme (91.04%) and in optional vaccines other than those against COVID-19 (82.08%) is higher than the level of confidence in vaccines against COVID-19 (66.83%). It should be noted the availability of respondents in the age group 21-25 years to be vaccinated with vaccines from the aforementioned groups, their percentage being 34.14% in the case of mandatory vaccines and 30.26% in the case of optional vaccines other than the COVID-19 ones, out of the total respondents.

The percentage of COVID-19 vaccination of the respondents who participated in this study (66.83%) is higher than the percentage of the vaccination of the population recorded at the level of Gorj county (38.62%) (hotnews.ro, 2021), as of 01.12.2021, an aspect that confirms the high degree social responsibility of persons who have completed higher education (Oberiri and Bahiyah, 2021; de Lima, 2021; Apuk and Omar, 2021).

Out of the total number of vaccinated respondents, 36.23% are in the age group 21-25 years, and 92.02% in the age groups under 50 years, which highlights the concern of the categories of active people to be vaccinated, either out of self-belief or as a result of restrictions imposed by national authorities.

Compared to the number of respondents who have been infected with COVID-19, a percentage of 31.85% belongs to the age category 21-25 years and 86.22% are in the age category under 50 years. We can conclude that it was the active population that contracted the SARS-Cov-2 virus, due to the epidemiological risks generated by the more pronounced social interaction.

CONCLUSIONS

At the level of Gorj county, the COVID-19 pandemic was characterized by a progressive evolution of its incidence, until the beginning of November 2021, a temporary landmark from which the stagnation / decrease of the number of infected / hospitalized persons was found, the last indicator being at values comparable to those recorded at the beginning of the fourth wave of the pandemic. Similar relative developments were registered in the urban environment of Gorj County.

Although it has been scientifically proven that the vaccination against COVID-19 is the most effective way to combat the pandemic (Patel, Bergeri et al, 2021; Fathizadeh, Afshar et al, 2021; Murillo-Zamora, Trujillo et al, 2021), the vaccination rate in Gorj County is low, which raises serious issues in the context in which the first cases of the new Omicron mutation were recorded nationally.

The study reveals an almost double percentage of people with higher education in Gorj County who were vaccinated against COVID-19, compared to the county average, according to available statistics.

Also noted is the availability of people of the working age category to be vaccinated against COVID-19, which is also the category of those most exposed to coronavirus due to more pronounced social interaction.

The statistical processing, on the one hand of the official data highlighting the evolution of the COVID-19 pandemic at the overall level of Gorj county and in rural areas, and on the other hand of



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the data resulting from the respondents' answers to the applied questionnaire, confirms the initial hypothesis to the higher degree of social responsibility of people living in urban areas and those who have graduated from higher education.

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