

# СОЦІАЛЬНІ РЕАЛЬНОСТІ В ЕМПІРИЧНИХ ДОСЛІДЖЕННЯХ

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## Instruments and Perspectives of Coping with Pandemic COVID-19 in the Assessments of Medical Workers of the Kharkiv Region

**Artem Lytovchenko** –  
*PhD in Sociology, Associate Professor,  
Department of Political Sociology,  
V. N. Karazin Kharkiv National  
University, Kharkiv, Ukraine*  
E-mail: [a.d.litovchenko@karazin.ua](mailto:a.d.litovchenko@karazin.ua)  
ORCID: <https://orcid.org/0000-0002-1439-5213>

**Dmytro Boyko** –  
*PhD in Sociology, Senior Lecturer,  
Department of Political Sociology,  
V. N. Karazin Kharkiv National  
University, Kharkiv, Ukraine*  
E-mail: [dmitry.n.boyko@gmail.com](mailto:dmitry.n.boyko@gmail.com)  
ORCID: <https://orcid.org/0000-0003-3425-8555>

**Maryna Baieva** –  
*Head of donor recruitment  
and medical examination department  
Limited liability company «Kharkivsky  
regional center of plasma's provision  
and processing «Kharkiv-plasma»,  
Kharkiv, Ukraine*  
E-mail: [baevamaryna@gmail.com](mailto:baevamaryna@gmail.com)  
ORCID: <https://orcid.org/0000-0001-8281-0530>

**Halyna Ostapenko** –  
*6th-year student of Kharkiv National  
Medical University, Kharkiv, Ukraine*  
E-mail:  
[haostapenko.1m16@knmu.edu.ua](mailto:haostapenko.1m16@knmu.edu.ua)  
ORCID: <https://orcid.org/0000-0001-9334-7166>

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Groups with special qualities in the eyes of the public can help to overcome barriers to vaccination and other anti-pandemic measures. Such groups can be opinion leaders to advance the pandemic response. One of these groups is specialized doctors. A research question: how ready are they today to act as a group opinion leader in promoting vaccinations and other responses to the pandemic? We present original data that allow us to draw the local (national) characteristics of attitudes towards measures to coping the pandemic of medical workers in Ukraine, and about their potential as an agent for informational promotion of vaccination. We used a questionnaire survey of medical workers (797 medical workers were interviewed in March-September 2021) in the Kharkiv region to collect empirical material. We focused on their assessment of the readiness to vaccinate their environment – as an indirect indicator of assessing the prospects for mass vaccination and their own ability to act as agents of promoting mass vaccination. According to the results of the survey, the social group potential of medical workers in promoting vaccination is relatively high. About half of doctors with higher education, who are included in the pandemic topics of the information space and are confident in the need for mass vaccination, can be the agent core of the information promotion of anti-pandemic tools, particularly vaccination.

**Key words:** COVID-19 pandemic, health workers, vaccination barriers, opinion leaders, vaccination readiness.

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**Литовченко Артем, Бойко Дмитро, Басва Марина, Остапенко Галина. Інструменти й перспективи боротьби з пандемією Ковід-19 в оцінках медичних працівників Харківської області.** Центральна проблема статті – перспективи, можливі канали та агенти просування протипандемічних заходів у «ковідний» період. У статті представлено дослідження колективної свідомості медичних працівників Харківської області щодо оцінок засобів і перспектив боротьби проти пандемії КОВІД-19. Вирішується дослідницьке питання про потенціал специфічних груп як агентів соціального просування вакцинації та інших протипандемічних інструментів; мета статті – охарактеризувати цей потенціал стосовно медичних працівників як особливої групи. Для досягнення мети проведено масове анкетування (n=797) лікарів та молодшого медичного персоналу. Оцінку перспектив вакцинації здійснювали за допомогою побічного індикатора – оцінки готовності до вакцинації найближчого оточення. Результати дослідження свідчать про те, що близько половини медичних працівників (із вищою освітою, включені до «ковідної» тематики інформаційного простору, упевнені в необхідності масової вакцинації) можуть становити агентне ядро, яке можна задіювати задля інформаційного просування вакцинації й інших протипандемічних заходів.

**Ключові слова:** пандемія КОВІД-19, медичні працівники, бар'єри вакцинації, лідери думок, готовність до вакцинації.

## INTRODUCTION

The Covid-19 pandemic has raised a large number of pressing questions for various scientific disciplines, including actualizing interdisciplinary research. Sociology is capable of providing the most important information, as the events of the last one and a half years show, for combating the pandemic. The non-medical nature of this information does not diminish its importance. It is about describing and explaining the attitude of various social groups to the methods of combating the pandemic that are used today all over the world. First, we are talking about vaccinations. During the period of lockdowns, we saw attempts at mass protests against them in the countries of the European Union, North America, and other regions of the world. When humanity had vaccines to combat coronavirus infection, along with the expected joy and relief, the mass consciousness showed a sharp rise in conspiracy sentiment, followed by active forms of resistance to vaccination. It is possible and necessary to understand the specific reasons for this phenomenon. Here we are faced with both irrational fears based on ignorance and panic, and with a completely rationalized distrust caused by inappropriate competition between vaccine manufacturers, the politicization of vaccination, finally, an accelerated procedure for introducing vaccines into use (e.g.: CAREC, 2021, p. 69). Today, however, it is more important to take the next step – to look for ways to overcome the resilience of mass consciousness in relation to vaccinations and other measures to combat the pandemic.

Many countries today come to the need for compulsory vaccination. At the same time, it seems that this decision has been postponed for an impermissibly long time: resistance to mandatory vaccination today threatens to be much larger than it was six months ago. For all the complexity and contextual nature of vaccination barriers that research captures – e.g., a review of 82 national studies on this topic (Biswas et al., 2021), it can be argued that a huge role in overcoming this resistance as a significant barrier in the fight against pandemic plays an informational impact on the mass consciousness. There is no doubt that official reporting systems at the international and national levels do not fully cope with this impact. Anti-vaccination campaigning spreads mainly in direct interpersonal contacts and the main means of its organized implementation are network communities. Various opinion leaders, among whom there are even specialists in the medical field, are an equally important role.

It is on physicians and medical experts that we propose to focus the research view. The task of overcoming social barriers in the fight against the pandemic requires new effective instruments of information impact on the masses. Based on the high role of opinion leaders in anti-vaccination propaganda, it is necessary to oppose them with similar tools. Today, doctors specializing in virology or epidemiology are relatively rarely on the side of anti-vaccinators. However, among those physicians who are not specialists in these areas, and especially among family doctors or nursing staff, more and more «spontaneous» anti-vaccinators have a noticeable effect on the mood of patients with their informational activity. A paradoxical situation arises: a group that possesses all the characteristics necessary to play a leading role in the advancement of vaccination is effectively supplying personnel to the anti-vaccination

camp. In this regard, a logical research question arises: how ready are doctors today to perform the functions of a group opinion leader in promoting vaccination and other measures to combat the pandemic? To answer this question, it is necessary to understand the doctors' own attitude towards the fight against the pandemic, its factors, as well as the views of doctors about the prospects of the anti-pandemic fight.

A number of publications by foreign authors are devoted to similar issues. Various, but similar factors in the emergence of vaccine barriers are considered: fear of side effects and general mistrust of vaccines among medical students in Poland, Serbia and Slovenia (Kregar Velikonja et al., 2021); similar factors were found in a study of Cypriot nurses and midwives (Fakonti et al., 2021); Exactly the same reasons for the formation of barriers to vaccination were found in a review of 13 studies of health care professionals and nurses (Li et al., 2021). A lack of scientific evidence on the long-term effects of vaccines and misinformation on the Internet is fueling the reluctance to vaccinate nurses in the UK (Manby et al., 2021); New York City public hospital healthcare professionals are questioning vaccinations due to too rapid approval of vaccines (Ciardi et al., 2021). Let us also pay attention to studies that record certain national specifics of attitudes towards vaccination, such as a survey of health workers (mainly nurses) in Saudi Arabia (Alhofaian et al., 2021). At the same time, the conscientiousness of nursing staff, which some studies show, can presumably be explained by the insufficient sample size or its non-random nature, leading to an increase in the percentage of declarative readiness for vaccination (e.g., as here: Baniak et al., 2021); however, some studies that show a low level of confidence in vaccines among physicians also suffer from the same shortcomings (e.g., see: Niznik et al., 2021).

In this article, we present original data that allow us to draw a conclusion about the local (national) characteristics of attitudes towards measures to combat the pandemic of medical workers in Ukraine, and about their potential as an agent for informational promotion of vaccination.

As part of the work on the research project «Sociological and mathematical modeling of the effectiveness of managing social and epidemic processes to ensure the national security of Ukraine», we and our colleagues have also published some materials devoted to the study of the attitude to the means of combating the pandemic of groups capable of acting as opinion leaders – in particular, blood plasma donors (Litovchenko A. et al., 2021). This paper continues this logic; its purpose is to characterize the attitude of representatives of the medical community of Kharkiv region to the methods and prospects of combating the pandemic.

## 1. METHODOLOGY

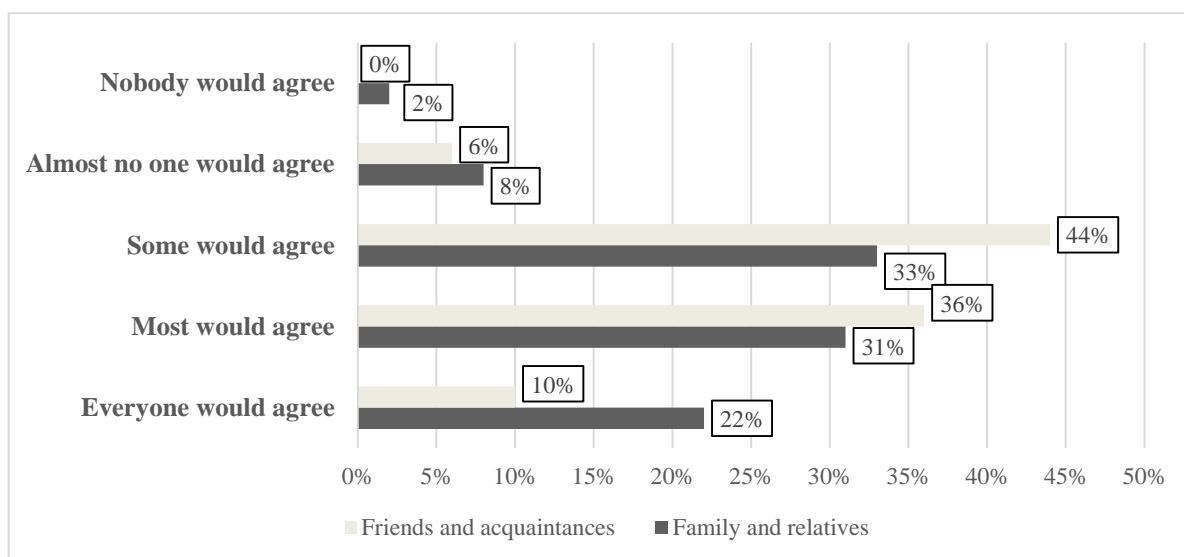
To collect empirical material, a quantitative survey method was used – a questionnaire survey with medical workers (797 medical workers were interviewed) in Kharkiv region. Members of the vaccination teams from the city of Kharkov and various settlements of the Kharkov region filled out the questionnaires during the briefing at the courses of preparation for work at the vaccination points. The survey took place from March to September 2021. We did not use special sample, since given the purpose of the study, it was important for us that the most active members of the group answered. We processed the resulting data array in the IBM SPSS Statistics 23 package. Online conduct is due to quarantine measures. The choice of the quantitative method is explained by the fact that we are interested in group representations without individualization. The relative sensitivity of the topic is compensated by the professional affiliation of the respondents. At the same time, taking into account the overload on medical workers during the pandemic period, the survey was conducted using a short questionnaire (19 questions, including the passport part), so as not to provoke fatigue and mechanical responses. The basis of our analysis was the data of answers to the following questions: «Where do you usually get information, news?», «What measures to combat the pandemic do you consider necessary?» (Both questions with the possibility of multiple choice of answers), «Do you think your relatives would agree to be vaccinated?», «Do you think your friends and acquaintances would agree to be vaccinated?» (both questions on a five-point ordinal scale) and «How often are you in contact with strangers while at work?» (only one answer question). We purposefully focused not on the readiness of medical workers themselves to be vaccinated (realizing that their responses may be due to both declarative loyalty and the mandatory nature of vaccination for this professional group), but on their assessment of the readiness to vaccinate their environment – as an indirect indicator of assessment prospects for mass vaccination; and one's own ability to act as agents for promoting mass vaccination.

## 2. RESULTS AND DISCUSSION

The array of respondents turned out to be uneven by gender: male respondents made only 10 % of the array. This is largely because the focus of the study was on junior medical personnel: they make up 58,4 % of the entire array, while family doctors and therapists – 33,2 %, and various specialized specialists – 8,4 %. The minimum age is 19, the maximum is 78 years old; the average age of the respondents is 42 years. 47,0 % of respondents have a higher education or a scientific degree, 53 % – various variations of secondary education.

The general characteristics of the survey participants according to the indicators we have highlighted does not contain any vivid details. Most of the respondents prefer to receive information about the coronavirus from social networks and Internet portals (71,5 % and 67,1 %, respectively); followed by television broadcasts (49,7 %) and conversations with relatives (42,7 %); finally, a quarter of the respondents prefer messengers, blogs and vlogs; at the bottom of the list are radio programs preferred by 11 % of the respondents. Taking into account the professional specifics of the respondents, it is not surprising to find out both the large number of daily contacts with strangers among the overwhelming majority of the respondents (84.8 %), and the distribution of ideas about the need for anti-pandemic measures: in the first place is mass vaccination with almost 85 %, followed by a mask requirement (81,6 %), disinfection of transport and public places (69%); remote work and seasonal «lockdowns» are considered necessary by only 26,7 % and 23,1 %, respectively.

Distribution of answers to the central questions for our goal «Would your relatives / friends and acquaintances agree to be vaccinated?» demonstrates understandably greater optimism in assessing the intentions of the family and loved ones (see. Fig. 1): there is a high probability that respondents are more confident in the position of their relatives and friends, since they are better aware of this position, while the position of friends and acquaintances is more likely to be guessed.



**Fig. 1.** Evaluation of readiness of the social environment for vaccination (only one answer; % to all respondents)  
Source: author`s research.

There is expected to be a strong correlation between these two attribute (Spearman's coefficient >0,6), therefore it was logical to create an integrated variable. It, on the one hand, combines indicators for assessing the readiness of the family and the environment of health workers for vaccination, on the other hand, allows ranking the environment of the surveyed health workers according to the degree of readiness for vaccination; this integrated attribute was used in further analysis (see table 1):

*Table 1*

**Evaluation of Readiness of the Social Environment for Vaccination  
(Integrated Attribute; % to All Respondents)**

<b>Group</b>	<b>Comments</b>	<b>%</b>
Pessimists	Those medical workers whose relatives and friends mainly do not agree to be vaccinated	11,9
Neutrals	Those medical workers who have both relatives and friends who agree to be vaccinated and those who do not agree to be vaccinated	45,8
Optimists	Those medical workers whose relatives and friends mainly agree to be vaccinated	42,4

\* Source: author`s data analysis.

The starting point, which immediately demonstrates the specifics of these groups, is their attitude to various anti-epidemic measures. Thus, medical workers of Kharkiv region most often choose vaccination (85 %) and following the mask requirement (82 %) as mandatory measures to combat the pandemic. At the same time, the optimists group shows even higher ratings – 96 % and 87 %, respectively; at the same time, pessimists much less often agree that these measures are necessary – 70 % for the mask regime and only 51 % for vaccination (see table 2). The Pearson correlation coefficient between the integrated variable and the attitude to vaccination and to the mask regimen (as to separate traits) is 0,366 and 0,134, respectively, with a two-sided significance of 99 %. In general, this fits into a simple trend that pessimists simply consider fewer measures necessary in the fight against the pandemic (on average, they chose 2,3 options; neutrals 2,8, and optimists 3).

*Table 2*

**The Necessary Means to Combat the COVID-19 Pandemic  
(Multiple Answer; % to All Respondents in Column)**

<b>What is the Necessary to Combat the Pandemic?</b>	<b>Pessimists</b>	<b>Neutrals</b>	<b>Optimists</b>	<b>All</b>
Mass vaccination	51,1	82,9	96,1	84,7
Following mask requirement	70,2	79,9	86,6	81,6
Disinfection of transport and public places	57,4	73,3	67,6	69,0
Switching to remote work	25,5	24,2	29,8	26,7
Seasonal «lockdowns»	25,5	20,7	25,0	23,1

\* Source: author`s data analysis.

In many ways, the situation described above is related to those sources from which representatives of different groups prefer to receive information about the pandemic. Pessimists are less involved in the information environment associated with Covid-19, largely moving away from it. Optimists, on the contrary, are more active than others in monitoring the situation through all means of communication, except conversations with relatives, friends, colleagues – that is, they consume more precisely the products of various media (see table 3).

*Table 3*

**The Main Source of Information about COVID-19  
(Multiple Answer; % to All Respondents in Column)**

<b>Source of COVID-19 Information</b>	<b>Pessimists</b>	<b>Neutrals</b>	<b>Optimists</b>	<b>All</b>
Social networks (Facebook, Twitter, Instagram etc.)	66,0	69,1	75,6	71,5
Internet	57,4	64,2	72,9	67,1
TV	43,6	50,7	50,3	49,7
Conversations with family, relatives, friends & colleagues	41,5	46,8	38,7	42,7
Messengers (for ex., Telegram-channels)	18,1	24,8	30,4	26,4
Blogs & vlogs (LiveJournal, YandexZen, YouTube etc.)	23,4	22,9	29,2	25,6
Radio	8,5	9,9	13,7	11,3

\* Source: author`s data analysis.

But the hierarchy of sources itself (with some minor exceptions) is reproduced in all the selected groups: the main ones are social networks and Internet portals (57–76 %), the secondary ones are TV shows and conversations with the environment (39–51 %), the third ones are messengers and blogs (18–30 %). That is, the channel of receiving information practically does not affect the readiness for vaccination, and a much more significant factor is the involvement in the relevant topics of the information space, information practices and cultural capital as such. Confirmation of this we can also found in the analysis of differences between different groups in the level of education (see table 4). The Pearson correlation coefficient between the integrated variable and the level of education is 0,167 with a two-sided significance of 99 %. It is obvious that there are significantly more people with higher education among optimists (56 %) than among pessimists (36 %) or neutrals (42 %). This is naturally embodied in professional positions that are common in different groups: in the vast majority of cases, pessimists and neutrals are junior medical personnel (76 % and 63 %, respectively), while slightly more than half of optimists are doctors (10 % are specialists and 41 % are physicians and family doctors) (see table 5).

Table 4

**The Education Level of Different Evaluators Groups (% to All Respondents in Column)**

	<b>Pessimists</b>	<b>Neutrals</b>	<b>Optimists</b>	<b>All</b>
Secondary (not full, full, professional, specialized)	64,5	58,5	43,6	53,0
Higher (full, not full) or scientific degree	35,5	41,5	56,4	47,0
	100,0	100,0	100,0	100,0

\* Source: author`s data analysis.

Table 5

**The Professional Position of Different Evaluators Groups (% to All Respondents in Column)**

	<b>Pessimists</b>	<b>Neutrals</b>	<b>Optimists</b>	<b>All</b>
Specialized doctors	4,3	7,6	10,3	8,4
Physicians, family doctors	19,4	29,5	41,1	33,2
Junior medical personnel	76,3	62,9	48,6	58,4
	100,0	100,0	100,0	100,0

\* Source: author`s data analysis.

But with the described attributes of the professional position, there are no fundamental differences in how often the official duties of representatives of different groups of medical workers are forced to contact strangers. Really optimists are somewhat more often forced to do this on a daily basis than pessimists (87 % vs. 81 %), but this difference only slightly exceeds the statistical error (see table 6). That is, it is not a matter of individual awareness of the danger of infection and, accordingly, the importance of vaccination, but of a general ideological position based on education and information practice.

Table 6

**Contacts Frequency of Different Evaluators Groups (% to All Respondents in Column)**

<b>How Frequent are Your Contacts at Work?</b>	<b>Pessimists</b>	<b>Neutrals</b>	<b>Optimists</b>	<b>All</b>
I have many contacts with strangers daily	80,9	84,0	86,8	84,8
Half of working days is filled with contacts with strangers	11,7	8,0	7,5	8,2
Sometimes there are days with many contacts with strangers / As a rule, there are not many contacts with strangers / I have almost no contacts with strangers	7,4	8,0	5,7	7,0
	100,0	100,0	100,0	100,0

\* Source: author`s data analysis.

## CONCLUSION

The data obtained allow us to draw the following conclusions. Medical workers are divided into three groups depending on their assessment of the readiness of the immediate environment for vaccination: optimists (confident that the environment is ready to be vaccinated), neutrals (believing that there are both ready and unprepared for vaccination in their environment) and pessimists (believe that most relatives and friends are not ready to be vaccinated). Optimists include more people with higher education – specialists, physicians and family doctors – while pessimists and neutrals are junior medical staff. Optimists are more actively involved in the objective information field around the COVID-19 pandemic, preferring information from various media to conversations with friends. At the same time, pessimists are much less likely than optimists and neutrals to agree on the need for both vaccination and other anti-pandemic measures. Thus, we argue that the assessment of the readiness of the immediate environment for vaccination largely reflects the attitude of health workers themselves to vaccination. At the same time, the determining factors are the general ideological position based on education and information practices. Given the fact that both optimists and neutrals, totaling almost 90 % of respondents, speak – albeit with a noticeable difference – in favor of the need for mass vaccination, it is possible to assess the social and group potential of doctors in promoting vaccination as high. At the same time, the real agent of this promotion should be assumed to be optimists, who make up slightly less than half of the group of medical workers, since the stability of their position regarding vaccination is confirmed by a positive assessment of the readiness of their close environment for it. In developing appropriate social and informational measures, it makes sense to focus specifically on doctors as an active core; however, at the same time, junior medical personnel should become the object of careful informational and educational influence – as potential translators of skepticism about mass vaccination.

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