

Cognitive aspects of the attitude of young people to vaccination against covid-19: case of Vladivostok

Aspectos cognitivos da atitude dos jovens em relação à vacinação contra a Covid-19: caso de Vladivostok

Aspectos cognitivos de la actitud de los jóvenes hacia la vacunación contra la covid-19: el caso de Vladivostok

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Abstract

The aim of the article was to study the cognitive aspects of the perception of COVID-19 vaccination among young people in Vladivostok, using qualitative research methods, particularly in-depth interviews. To achieve this goal, a survey was conducted among students and working youth. The reconstruction of their views was carried out through the qualitative method of in-depth interviews. The respondents predominantly have a positive attitude towards vaccination (more than half of those surveyed), while neutral or contradictory views are less common. Almost all respondents see vaccination as a way to protect their health. However, on other issues, such as attitudes towards restrictive measures and the assessment of the safety of the Sputnik-V vaccine, the respondents' positions vary. The survey revealed two groups within the youth population, differing in their life stance and approach to solving health and safety issues. In general, young people recognize the necessity and benefits of vaccination and the associated restrictions. At the same time, they showed a high sensitivity to coercion and the limitation of choice. Complaints related to the violation of freedom of choice are the main criticisms of the vaccination campaign.

Keywords: Presentation, Cognitive distortions, Vaccination, COVID-19, Stereotypes, Students, Russia, Interview.

Resumo

O objetivo do artigo foi estudar os aspectos cognitivos da percepção da vacinação contra a COVID-19 entre os jovens de Vladivostok, usando métodos de pesquisa qualitativa, especialmente entrevistas em profundidade. Para atingir esse objetivo, foi realizada uma pesquisa entre estudantes e jovens trabalhadores. A reconstrução de suas opiniões foi realizada por meio do método qualitativo de entrevistas em profundidade. Os entrevistados têm, predominantemente, uma atitude positiva em relação à vacinação (mais da metade dos pesquisados), enquanto as opiniões neutras ou contraditórias são menos comuns. Quase todos os entrevistados veem a vacinação como uma forma de proteger sua saúde. Entretanto, em outras questões, como atitudes em relação a medidas restritivas e a avaliação da segurança da vacina Sputnik-V, as posições dos entrevistados variam. A pesquisa revelou dois grupos dentro da população jovem, que diferem em sua postura de vida e abordagem para resolver questões de saúde e segurança. Em geral, os jovens reconhecem a necessidade e os benefícios da vacinação e as restrições associadas. Ao mesmo tempo, eles demonstraram uma alta sensibilidade à coerção e à limitação de escolha. As reclamações relacionadas à violação da liberdade de escolha são as principais críticas à campanha de vacinação.

Palavras-chave: Apresentação, Distorções cognitivas, Vacinação, COVID-19, Estereótipos, Estudantes, Rússia, Entrevista.

Resumen

El objetivo del artículo era estudiar los aspectos cognitivos de la percepción de la vacunación COVID-19 entre los jóvenes de Vladivostok, utilizando métodos de investigación cualitativa, en particular entrevistas en profundidad. Para lograr este objetivo, se realizó una encuesta entre estudiantes y jóvenes trabajadores. La reconstrucción de sus puntos de vista se llevó a cabo mediante el método cualitativo de entrevistas en profundidad. Los encuestados tienen predominantemente una actitud positiva hacia la vacunación (más de la mitad de los encuestados), mientras que las opiniones neutrales o contradictorias son menos frecuentes. Casi todos los encuestados ven la vacunación como una forma de proteger su salud. Sin embargo, en otras cuestiones, como las actitudes hacia las medidas restrictivas y la evaluación de la seguridad de la vacuna Sputnik-V, las posturas de los encuestados varían. La encuesta reveló la existencia de dos grupos dentro de la población juvenil, que difieren en su postura vital y en su enfoque para resolver los problemas de salud y seguridad. En general, los jóvenes reconocen la necesidad y los beneficios de la vacunación y las restricciones asociadas. Al mismo tiempo, mostraron una gran sensibilidad ante la coacción y la limitación de la capacidad de elección. Las quejas relacionadas con la violación de la libertad de elección son las principales críticas a la campaña de vacunación.

Palabras clave: Presentación, Distorsiones cognitivas, Vacunación, COVID-19, Estereotipos, Estudiantes, Rusia, Entrevista.

1. Introduction

The topic of this research is one of the most important and relevant at the present time. The COVID-19 pandemic became a global threat, forcing countries around the world to seek ways to protect themselves and safeguard their populations. Now is the time to study the experience gained. It is particularly relevant to analyze not only the functioning of the state system but also the socio-psychological aspects of how the population perceives this work. Was the government effective in addressing these problems from a psychological perspective? What is the population's attitude towards the measures taken? Despite the fact that the advantages of vaccination and its benefits in reducing the spread of dangerous diseases are recognized by medical experts of the World Health Organization, the attitude towards the vaccine and the vaccination policy itself has been controversial in our country. There has even been active resistance to vaccination – anti-vaccination movements, with supporters of this trend present across all age groups. Thus, we turned to the study of the psychological patterns of evaluation

and perception by the population of the government's crisis management policies (especially during a global pandemic). At this point, this topic remains underexplored.

2. Literature Review

Over the past two years, both foreign and Russian scientists have been actively studying the psychological aspects of the global epidemic. Nearly all researchers have noted a general decline in quality of life and satisfaction during the pandemic, as highlighted in the works of Zacher and Rudolph (2020), Bono, Reil, and Hescocx (2020), Kanekar and Sharma (2020), Marmarosh, Forsyth, Strauss, and Burlingame (2020).

Vaccination, which has been conducted globally, elicits mixed feelings among the population – alongside hope and positive emotions, there are also fears, distrust, resistance, and protest. This issue has been explored in the works of Giubilini, Savulescu, and Wilkinson (2020), Peretti-Watel et al. (2020), as well as Paul, Steptoe, and Fancourt (2021). As noted in the studies of Hornsey, Harris, and Fielding (2018), and E.V. Kukhtevich et al. (2018), although the benefits of vaccines are acknowledged by medical experts, the attitude toward vaccines and vaccination policies (especially regarding children) has remained ambiguous and contradictory worldwide.

A survey conducted in June 2020 across 19 countries indicated that 71.5% of participants expressed their intention to get vaccinated (provided the vaccine was proven and recommended by their employer), with notable variations in these figures: 83.7% in China and 59.1% in Russia (Lazarus et al., 2021). Most participants showed readiness for vaccination in European countries as well. Refusal to vaccinate was linked to reasons such as lack of trust in the vaccine (Neumann-Böhme et al., 2020). French researchers, based on a survey of their population (Detoc et al., 2020), identified factors contributing to a positive attitude toward vaccination, including perceived individual risk, working in healthcare, older age, male gender, and fear of COVID-19, which can be influenced by misinformation about vaccine safety. This is likely due to independent studies showing a higher risk of complications and death from COVID-19 among the elderly and men (Galbadage et al., 2020).

Research into the social predictors of vaccine refusal showed that resistance to vaccination is most common among people without education, with low social status and

income, minorities, and the unemployed (Malik et al., 2020). In Hong Kong (China), a study was conducted among nurses to assess their willingness to accept COVID-19 vaccination and the reasons for refusal or hesitation regarding this vaccination (Wang et al., 2020). This study revealed that refusal of COVID-19 vaccination may be associated with concerns and misconceptions spread by the media. The works of Yaqub, Castle-Clarke, Sevdalis, and Chataway (2014), Ward, Alleaume, and Peretti-Watel (2020) attempted to identify and classify attitudes toward vaccination decisions. Western researchers developed the "COVID-19 Fear Scale" (Ahorsu et al., 2022), which was tested on Russian and Belarusian samples. Its application showed that the level of COVID-19-related fear increases with age (Gritsenko et al., 2020). E.S. Bogomyagkova (2021) notes that the attitude towards immunoprophylaxis against COVID-19 in Russia can be characterized by distrust of specific vaccines while generally approving vaccination as an effective tool for combating epidemics.

Studies have also begun to investigate the attitudes towards vaccination and perceptions of it among young people. In Russia, one significant study was conducted by E.V. Ryaguzova (2021) among students of the Saratov National Research State University named after N.G. Chernyshevsky. The research methods included psychodiagnostic testing and a survey, which consisted of blocks covering the respondents' socio-demographic status and their experience with COVID-19 infection, assessment of their subjective attitude towards vaccination, their intention to vaccinate or not, and reasons for their decision.

The subjective perception of the vaccine and vaccination from COVID-19 (associations with the stimulus "vaccine" and definitions of the concept of "vaccine") was also examined. Amid a generally low level of COVID-19-related fear, a negative attitude toward vaccination was revealed in the majority of study participants, expressed through refusal to potentially vaccinate. Dominant reasons for refusal include distrust and fear of consequences, unreliability of the vaccine, and the presence of antibodies. The main reasons cited by respondents were the insufficient study of the vaccine, distrust, fear of side effects, negative experiences of others, allergies, unreliability, doubts about the need to vaccinate, and reliance on their immune system. Respondents who planned to get vaccinated against COVID-19 cited reasons such as personal safety, protecting others, prevention, psychological comfort, and

recommendations from close people. The results are interpreted by researchers in the context of cognitive biases that become more pronounced in situations of uncertainty.

It is worth noting that metacognitive effects, such as the Dunning–Kruger effect, have been previously considered as an explanatory principle for vaccine refusal in relation to autism. This explanatory paradigm focuses on the cognitive mechanisms in human consciousness that underlie vaccine refusal (Motta et al., 2018). In L.A. Kostina’s study (Kostina et al., 2020), which analyzed the psychological traits of students with a negative attitude toward vaccination, it was found that the psychological traits of medical students who have a negative attitude toward COVID-19 vaccination include inflated self-esteem, adherence to societal norms and rules, a dreamy attitude toward life, satisfaction, low achievement motivation, openness to new experiences, distrust of authorities, carelessness, and an orientation toward emotional contact with others.

In a study focusing on the reasons for parental refusal to vaccinate schoolchildren, similar reasons for the ambiguous attitude toward vaccination were identified: low public awareness and the use of unreliable sources of information (Jusupova et al., 2021). Thus, an analysis of the studies shows that there has been an active exploration of the population’s, including youth’s, attitudes toward COVID-19 vaccination. This topic requires further in-depth research.

Therefore, the aim of this article is to examine the cognitive aspects of young people’s attitudes toward COVID-19 vaccination in the city of Vladivostok, using qualitative research methods, such as in-depth interviews.

3. Methods and Methodology

For this study, the method of in-depth interviews was chosen. This method is part of qualitative research techniques, characterized by its ability to delve into the individual consciousness of respondents, offering them the opportunity for self-expression and granting researchers freedom from the constraints of formalized methods.

The methodology of using in-depth interviews is described in the works of S. A. Belanovsky (2019) (who also refers to it as “deep interviews”). This technique allowed us to

identify the motives of the respondents, analyze their views on the vaccination campaign and its goals, and examine their attitudes toward different sources of information.

The sample for this qualitative study consisted of 17 people, most of whom were students from higher education institutions in Vladivostok, along with working young people and one unemployed former student. The ages of the respondents ranged from 19 to 25 years. In the initial stage, interviews were conducted with young people who had expressed their willingness to participate in the study. During the interviews, the key statements of the respondents were recorded manually, with their consent. After gathering the responses from the informants, we categorized them according to their attitudes towards vaccination. These responses were then subjected to semantic analysis. Significant assistance in conducting this research was provided by Anastasia Nikolaeva, a third-year student of the "Psychological Counseling" program at the Far Eastern Federal University (FEFU).

In our sample, three groups were identified based on their attitudes towards vaccination: predominantly positive (10 people), neutral (5 people), and those with mixed or contradictory views on vaccination (2 people). Out of the 17 informants, 16 had been vaccinated, and 1 person had not.

4. Results

4.1 Attitude towards Vaccination and Associated Emotions

Among the respondents, three groups can be identified in terms of their attitudes towards vaccination: positive, neutral, and contradictory.

Most respondents have a positive attitude towards vaccination, which corresponds to positive emotional reactions (10 people). "Positive emotions. I want the pandemic to end soon, and for mortality to decrease." Female, 20, student, linguistics. Less frequently, a neutral attitude was observed; in this group, vaccination does not evoke significant emotions (5 respondents).

These respondents do not exhibit a strongly positive attitude; rather, they can be characterized as neutral. Their decision to get vaccinated was primarily triggered by restrictions for the unvaccinated and vaccination requirements at school or work. "Neutral, the same as with

other vaccines. I have a positive attitude towards vaccination itself, but I am against coercion." Female, 21, medical student.

Only two respondents expressed mixed emotions with a strong negative undertone. For one person, vaccination causes mostly negative emotions, primarily fear.

"More negative than positive: fear, uncertainty, anxiety." Female, 20, student, philosophy. The reasons for this attitude may be related to personal characteristics. This respondent's answers reveal fears and distrust of all external information sources. The vaccine was accepted under pressure from restrictions and out of fear for personal health.

Distrust of all sources is also evident in the responses of another respondent, who ultimately did not get vaccinated (male, 19 years old, dropped out of university). Thus, the majority of respondents hold a positive attitude towards vaccination, associating it with protecting their health. The prevailing emotional background is generally positive or neutral, although one respondent expressed strong fear of vaccination.

4.2 Seeking Information about Vaccination and Attitudes towards Various Sources

Almost all respondents used both the internet and information from acquaintances. The highest level of trust was placed in information from close friends and acquaintances, especially those working in medicine. Many consulted them before making a decision about vaccination.

Most respondents named familiar doctors or medical professionals among their trusted sources. This suggests that there is still trust in medical professionals. Respondents also expressed trust in scientific articles and medical websites. Those who had a positive attitude towards vaccination tended to rely on these sources more often. Additionally, many respondents sought information from bloggers, such as Varlamov and Usachev. Most often, turning to bloggers was associated with a declared distrust of official sources and the media. Those with a positive attitude towards vaccination had a broader range of information sources, including scientific articles and medical websites.

The responses of those with mixed or negative attitudes towards vaccination frequently mentioned distrust of certain information sources, such as television, the media, and *Revista Gestão & Tecnologia (Journal of Management & Technology)*, v. 25, n.2, Ed.Especial, p.316-332, 2025 323

government sources. "The media is a tool of government pressure. But it doesn't bother me much... there's a lot of information going around about the vaccine, but reliable info is nowhere to be found. I don't think the government informs us of all the details... Who influenced me? Acquaintances, close friends. Parents. Bloggers – firsthand info (Usachev, Varlamov)." Female, 21, Design.

"In my family, there are people who work in medicine, and I trust them. But you can't fully trust anyone." Male, 19 years old, dropped out of university, unvaccinated.

Distrust also appeared among those with a neutral attitude towards vaccination: "I can't say I trust any sources 100%; I take in information at about 50/50 from everywhere." Female, 19, linguistics. Thus, a link between neutral and negative attitudes towards vaccination and increased caution towards public information sources was revealed, with a tendency to believe in the filtering, manipulation, and distortion of information by the government and media. This may be related to the personal characteristics of these respondents.

It can be noted that among those with neutral or contradictory attitudes towards vaccination, signs of cognitive biases were observed, such as overestimation of their own competence, overgeneralization, negative selection, and a tendency towards conspiratorial thinking (not trusting anyone, believing information is hidden). Among the youth with a positive attitude towards vaccination, there is a broader range of information sources, trust in these sources, and a tendency to refer to scientific information. All groups of respondents shared a common trust in close acquaintances and familiar doctors (or experienced medical professionals).

4.3 Perception of Vaccination Goals

There is a general consensus among respondents regarding the goals of vaccination: they believe it is intended to prevent the spread of the epidemic by building collective immunity.

Even those with a mixed attitude towards vaccination acknowledge: "I don't believe in microchipping; vaccination is done to prevent illness and boost immunity." Female, 20, student, philosophy.

At the same time, the group with a positive attitude towards vaccination expressed their thoughts on the purpose and essence of the vaccination campaign more accurately and scientifically, likely reflecting their use of scientific sources of information. It can be concluded that the surveyed youth are generally not proponents of any conspiracy theories related to vaccination (though traces of such thinking exist). This may explain the absence of active vaccine opposition among our respondents.

4.4 Vaccination Motives and Factors Influencing the Decision

To focus on the reasons that directly prompted young people to get vaccinated, the respondents were asked the corresponding question during the interviews.

Most young people made the decision to get vaccinated for two reasons: a desire to protect their health and restrictions imposed on the unvaccinated at school and work. For those with a positive attitude towards vaccination, the primary motivation is concern for their health. Young people also express concern for the health of others.

"Mortality statistics, fear for my health and the health of my loved ones." Female, 20, linguistics.

"...the university order, and secondly, awareness." Male, 20, Social Work.

For the group with a neutral attitude, external motivations prevail, linked to pressure from restrictions and requirements. There is also concern for their health. Overall, this group demonstrates a passive stance towards vaccination and their health.

"The government influenced me by introducing numerous sanctions. But the situation itself also influenced me—I don't want to get sick." Female, 21, Design.

Thus, the first group differs by having more awareness and internal motivation. The representatives of this group are ready to actively take care of their health. They also show concern for their loved ones and society, something not observed in the second and third groups. Common to both groups is concern for their health.

4.5 Two Groups of Youth with Different Behavioral Strategies

The analysis of the survey results revealed the presence of two groups among the youth, differing in their life stances and strategies for addressing health and safety issues.

The first group tends to have a more passive attitude towards health issues, rarely taking the initiative to delve into complex topics such as vaccination. "I don't think much about it because there's so much conflicting information about the vaccine, and there's no reliable info anywhere". Female, 21, Design.

The decision to get vaccinated by this part of the youth was made under pressure from the government and employers. Their approach to the vaccination situation involved waiting and complying with circumstances. When employers and educational institutions began imposing restrictions on the unvaccinated, they were forced to get the vaccine. It would be inaccurate to say that their position is conscious. This group also exhibits pronounced distrust of official information sources and the media. Their range of information sources is narrow, including online media, bloggers, and their immediate surroundings. It is notable that this group shows cognitive distortions, such as overestimation of their competence and elements of conspiratorial thinking.

This group is characterized by egocentrism, primarily focusing on themselves. Members of this group view individual events one-sidedly, perceive government measures selectively, and are unlikely to provide an adequate, balanced evaluation of government policy. This group can be conditionally referred to as "passive". In fact, they have transferred responsibility for themselves to the state. For the second group of youth, an active stance and more rational strategies for addressing health and safety issues are characteristic. This group is also more informed, possessing a broader range of sources and knowing how to work with them. Its representatives seek information from scientific sources, including medical databases. They consult doctors more actively and turn to the opinions of medical authorities.

This group can be conditionally called the "active" group of youth. In crisis situations, they take responsibility for themselves and their loved ones. It can also be said that this group thinks not only about themselves but also about the health of others. They are also

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capable of a rational evaluation of government policy, recognizing its strengths and weaknesses. Overall, representatives of this group demonstrate greater personal strength and maturity. It can be assumed that the existence of these two groups among the youth will manifest in other critical situations as well.

4.6 Evaluation of the Vaccination Campaign

When assessing the organization of the vaccination campaign, most young people noted that it was necessary. However, shortcomings were also pointed out.

A very important drawback that several respondents mentioned was the discrediting of Western vaccines in the Russian media. According to the young people, this fact led to doubts about the reliability of claims regarding the Russian vaccine. Some respondents directly noted that this was a mistake by the Russian media and the government, undermining trust in the campaign.

Respondents also pointed out that the restriction of Western vaccines reduced freedom of choice and increased the coercive nature of vaccination. Several respondents advocated for a less coercive approach to vaccination, confirming the youth's negative attitude towards compulsion. Regarding the Sputnik V vaccine, most respondents did not have serious complaints, although some noted that Sputnik V was "raw," reducing its reliability.

As we already noted, some respondents expressed dissatisfaction with the criticism of Western vaccines and their unavailability in Russia. Another critical comment about the vaccination campaign was the opinion that the campaign's informational aspect was weak. It was noted that conspiracy theories and anti-vaccination sentiment had spread, indicating that there was not enough information, and it was not effectively conveyed to everyone.

Additionally, based on personal experience, it was noted that older people received information less effectively, and their ability to search for information online and register on the necessary websites was limited. This leads us to conclude that more serious and focused efforts should be made to work with these population groups (both youth and the elderly) in the future.

5. Conclusions

Conclusion In general, it can be said that young people mainly accept the government's explanations regarding the usefulness and necessity of COVID-19 vaccination. However, motivations, risk perceptions, attitudes towards the vaccine, and vaccination methods vary.

Attitudes towards vaccination itself are predominantly positive, less often neutral, and it is associated with protecting one's health. The survey revealed the presence of two groups among the youth, differing in their life stances and strategies for addressing health and safety issues. For the first group, a passive attitude towards health issues is more characteristic. Vaccination was adopted by this part of the youth under pressure from the government and employers. Their strategy in the vaccination situation was to wait and comply with circumstances.

Cognitive distortions are characteristic of this group, such as overestimating their competence, overgeneralizing notions of universal manipulation of people, distrust of all or most information sources, and conspiratorial thinking. This group makes decisions under conditions of information scarcity and cognitive distortions, which affect behavior dysfunctionally. For the second group of youth, an active stance and more rational strategies for addressing health and safety issues are characteristic. This group has access to a broader range of sources. Its representatives seek information from scientific sources, including medical databases. They consult doctors more actively and turn to the opinions of medical authorities. This allows them to rationally evaluate the situation without cognitive distortions and form functional behavior. Importantly, the representatives of the second group think not only about themselves but also about the health of others. Overall, they demonstrate greater personal strength and maturity.

The existence of these two groups with different behavioral strategies in critical situations forces the need to combine strategies tailored to each of them. For the representatives of the first group, during campaigns like vaccination, it will be necessary to combine

explanations, primarily relying on sources of authority for them, with coercive measures. Decision-making under pressure from circumstances and the government is natural for them.

We can talk about a combination of voluntariness and pressure when promoting medical measures for the "passive" group. The representatives of the second group need to be given the opportunity to understand the problem and provided with scientific information to encourage them to consciously support medical measures. In general, young people recognize the necessity and usefulness of vaccination and the related restrictions. However, they also showed high sensitivity to coercion and limitation of choice.

The value of personal freedom is very relevant for our respondents. Complaints related to the violation of freedom of choice are the main criticisms of the vaccination campaign. The experience of this campaign shows that the youth audience more easily accepts coercive measures if there is some degree of freedom of choice, at least in secondary matters. It is also important for them to have access to information.

The analysis of interview data showed that many young people were able to find the necessary and quality information using various sources such as websites, blogs, scientific articles, and databases, which allowed them to understand the issue and make their own decisions about vaccination. If we summarize the conclusions on this point of the interview, young people want the government to inform the public more and coerce less in such matters, i.e., they advocate for conscious choice in such situations.

Recommendations

The following recommendations can be made for government agencies and healthcare when working with youth in similar situations:

1. A combination of voluntariness and pressure, with coercive measures introduced gradually.
2. Providing the opportunity for choice within the campaign. For example, broader access to foreign vaccines would have been a sign of freedom of choice in the vaccination campaign.

3. Relying on those actively supporting medical measures to build the campaign for their promotion. Involving volunteers, including in explaining the measures being implemented. The example of peers can be convincing for youth.
4. Relying on authoritative medical figures in this age category. Using regional medical authorities more actively.
5. Using popular bloggers and other opinion leaders in the youth audience to promote vaccination.

Paying attention to developing the youth's skills in working independently with information and its sources, which is especially important in critical situations.

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