Psychological Antecedents and Opportunities for Correcting Negative Attitudes towards COVID-19 Prevention Measures

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Abstract: The article examines the psychological antecedents and opportunities for correcting attitudes associated with the person's rejection of COVID-19 prevention measures. The psychological factors that favor the appearance of such attitudes in a person are discussed. Three groups of these antecedents are distinguished, differing in terms of their place in the structure of the psyche and the degree of their stability during a person's life: stable, relatively stable, dynamic. The group of stable psychological antecedents includes personality traits, cognitive/thinking style, personal values; into the group of relatively stable – worldview beliefs, science-related knowledge, peculiarities of the social self and group identity; into the group of dynamic ones – the psychological state, attitudes, and beliefs regarding the situation of the pandemic.

Two main strategies for counteracting negative attitudes and beliefs are highlighted: preventive (implemented even before the emergence of undesirable attitudes and the appearance of misinformation provoking their occurrence), reactive (carried out after the formation of negative attitudes and beliefs). Various options for implementing a preventive strategy are considered: limiting the spread of misinformation about COVID-19, preventing its refutation, and developing people's skills to detect misinformation.

The factors of the effectiveness of the reactive counteraction strategy are analyzed: the type of tactics used to correct negative attitudes, the characteristics of the source of misinformation about COVID-19, the structure of the refuting message, the frequency of repetition of misinformation, the time elapsed between its appearance and rebutting it, the degree and direction of the recipient's cognitive activity, his/her views and beliefs.

Keywords: COVID-19, attitudes, beliefs, preventive measures, personality traits, psychological influence, misinformation, debunking.

1. INTRODUCTION

The number of people infected with COVID-19 is growing daily. According to the World Health Organization (WHO, online), as of April 30, 2021, more than 150 million infected were recorded. The pandemic has affected many aspects of people's lives, social groups, and society as a whole. One of the problems that arose in a pandemic situation is the non-optimal behavior of numerous people, namely, their violation of the rules of social distancing, personal hygiene, and other recommended measures. Along with vaccinations, such measures are one of the main ways to contain the infection.

This state of affairs poses the task of correcting negative attitudes towards preventive measures, convincing the population to implement recommendations that prevent the further spread of the disease. Simply informing about these measures is not always effective. What is required is persuasion, that is, the use of various psychological mechanisms of influence techniques to justify the need to implement preventive measures.

Successfully solving this problem requires answering the following two questions: 1) What are the psychological antecedents for negative attitudes; 2) What are the possibilities and limitations of psychological influence on negative attitudes in a pandemic situation. In this article, we will systematically examine these two aspects.

2. PSYCHOLOGICAL ANTECEDENTS OF NEGATIVE ATTITUDES TO PREVENTIVE MEASURES

There are several groups of psychological antecedents that differ in their place in the structure of the psyche and the degree of their stability during a person's life: stable, relatively stable, dynamic.

The malleability of stable antecedents (e.g., personality traits) during a person's life is possible, but in a minimal range. So, it is almost impossible to change them by methods of psychological influence in a comparatively short period (days, weeks). Relatively stable antecedents (e.g., worldview beliefs) undergo certain (sometimes very significant) changes over time, but they occur quite slowly (over months, years). As a result, their change by methods of psychological influence is possible but still limited. Dynamic antecedents (e.g., attitudes and beliefs concerning specific objects; psychological state) change over time quite enormously depending on the person's life situation, which means that methods of influence can be actively used to change them.

Stable and relatively stable antecedents affect the formation of negative attitudes towards the implementation of preventive measures, both directly and indirectly (through dynamic ones) (Fig. 1).
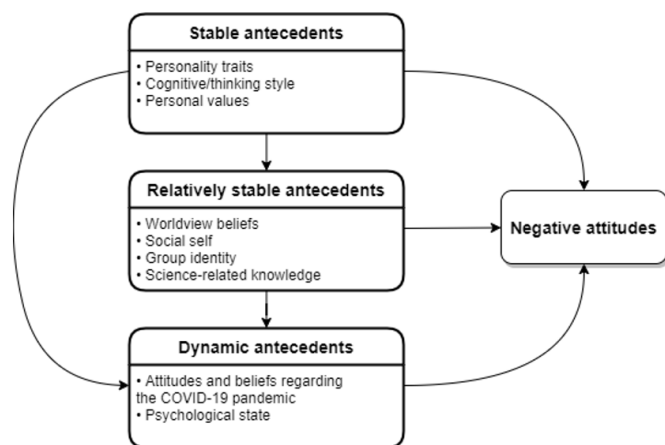

Figure 1. The relationship of antecedents influencing the negative attitude towards implementing COVID-19 preventive measures

The group of stable psychological antecedents includes personality traits, cognitive/thinking style, and personal values.

Studies indicate the influence of personality traits on the activity of the implementation of recommended preventive measures. Among the traits of the "Big Five" – the most common typology of personality traits, the most substantial influence was exerted by "friendliness" and "conscientiousness"; "openness to experience" had a moderate impact (Qian, Yahara, 2020; Han, 2021). Two other traits ("neuroticism," "extraversion") gave contradictory results: in some studies, they contributed to the implementation of recommendations; in others, on the contrary, they hindered. Studying the relationship between personality traits and psychological reactions in a pandemic situation allows identifying the underlying psychological mechanisms that determine the perception of a pandemic and actual behavior during it.

The social activity of extroverts can be accompanied by significant difficulties with restrictive measures regarding distancing. Friendly, open, and conscientious people comply with measures, perhaps because they tend to value the fulfillment of tasks important for society ("conscientiousness") and strive for harmony ("agreeableness"). They are also more open to new experiences involving adopting novel social norms and rules ("openness to experience"), accompanied by careful compliance with them ("conscientiousness"). For people with high levels of neuroticism, the pandemic situation causes more stress and concerns about their health, which affects their attitude towards COVID-19 restrictive measures. On the one hand, they can strictly observe them, and, on the other, they can also detect opposite tendencies due to their inherent depressive reactions.

In addition to personality traits, people with a negative attitude to COVID-19 prevention measures also have a specific cognitive/thinking style. In particular, they have a tendency to rely on intuition when making decisions; they also have poorly developed analytical abilities, which were evaluated using the "Cognitive Reflection Test" (Alper et al., 2020; Lazarevic et al., 2021).

Regarding personal values, it is noted that their moral dimension may be linked to the effectiveness of refuting misconceptions related to the current pandemic (Trevors and Duffy, 2020). In particular, people with a solid moral dimension of individual well-being are more likely to renew their old beliefs when they receive contradictory information and adhere to restrictive measures. Conversely, people with a substantial value of group cohesion or individual freedom who adhere to a libertarian morality are the most likely to either emotionally or cognitively reject incoming corrective information and not adhere to restrictive measures.

Relatively stable antecedents that influence negative attitudes include the worldview beliefs of people and the peculiarities of social self and group identity.

For example, negative attitudes towards COVID-19 preventive measures are combined with the presence in a person of so-called epistemically suspect beliefs – such ideas about the world that are "at odds" with the data of modern science. There are three types of such beliefs: paranormal, conspiracy, pseudoscientific (Lobato et al., 2014).

In addition, people with negative attitudes towards preventive measures have a below-average level of basic scientific knowledge and a skeptical attitude towards science in general (Čavojová et al., 2020).

There are also steady relationships between negative attitudes and people's political identity. In particular, in the United States, Republicans were much more likely to have similar beliefs (Uscinski et al., 2020). Likewise, in a study by Croatian authors (Erceg et al., 2020), people with conservative views (as opposed to liberal ones) were more likely to demonstrate unfounded beliefs.

The dynamic antecedents that contribute to negative attitudes towards COVID-19 prevention measures include the specificity of a person's perception of the pandemic situation (assessing the risks of infection, experiencing a threat, feeling of control over the situation). With a particular pattern of such features, negative attitudes can be noted, often accompanied by anxiety, uncertainty, and helplessness (Biddlestone et al., 2020; Šrol et al., 2021).

It was also pointed out that individuals who fear more about COVID-19 report exhibiting more public health compliance behaviors such as hand washing and social distancing (Harper et al., 2020). Those who perceive more risk for the COVID-19 are more apt to take preventive measures (Alper et al., 2020).

At the same time, a person's belief in the conspiracy theories of the current pandemic (i.e., conspiracy beliefs) leads both to refuse to implement the set of measures recommended by the WHO as protection against infection and to several other negative consequences, such as rejection information about the pandemic from reputable and competent sources and negative

attitudes towards vaccination (Freeman et al., 2020; Uscinski et al., 2020).

3. PSYCHOLOGICAL INFLUENCE ON NEGATIVE ATTITUDES TO PREVENTIVE MEASURES

As shown above, the basis for a negative attitude towards implementing recommendations (i.e., risky behavior in terms of contracting the virus) is a variety of psychological antecedents (personality traits, cognitive style, wrong ideas about various aspects of the pandemic). Considering this, successful counteraction to such attitudes should include a wide range of activities carried out jointly by scientists, the public, and government agencies.

There are several ways to correct negative attitudes and beliefs (and, more generally, misinformation about the COVID-19 pandemic). Two main strategies can be distinguished: preventive (implemented even before the appearance of undesirable attitudes and misinformation provoking their occurrence), reactive (implemented after negative attitudes and beliefs have been established).

There are various options for implementing a preventive strategy. First of all, as it seems, it is possible to limit misinformation about COVID-19 in traditional media and social networks. In this way, such information cannot reach people's consciousness, which means that they do not form negative attitudes and beliefs. Such counteraction measures (deleting patently false messages, tagging messages with "unverified data" labels) were already quite actively used in social networks. However, these measures were not particularly effective: the vast majority of people are pretty well informed about the main conspiracy theories of the pandemic.

Another option is to warn people that disinformation (in particular, about conspiracy theories of the pandemic) may appear, and they should carefully evaluate the receiving information from the point of view of its relevance to reality. The effectiveness of this technique has been proven in psychological research, including the COVID-19 pandemic study (Pennycook et al., 2020; Lewandowsky and Linden, 2021).

In addition to warning about the possible appearance of disinformation, there is also an opportunity to prevent and refute it, for example, providing arguments supporting an alternative, scientifically based point of view.

In contrast to the preventive, the reactive counteraction strategy aims to change the negative attitudes and beliefs that have already been formed, which is a complicated task. According to some research, they are tightly "embedded" in the system of attitudes and beliefs of the individual and are also essentially "fueled" by individual psychological characteristics.

The correction of negative attitudes can be directed both at the attitudes themselves and at some psychological antecedents/factors that affect their formation. For instance, by changing beliefs about the pandemic, it is also possible to correct negative attitudes towards preventive measures.

To date, numerous patterns have been identified regarding the effective psychological impact on people's attitudes and beliefs. In particular, there are studies concerning refuting misinformation, which showed that it is possible to successfully correct a person's already existing false beliefs (Chan et al., 2017; Walter and Murphy, 2018).

Important in this regard is the type of tactics used to rectify undesirable attitudes and beliefs. The analyses of various influence tactics used to correct negative attitudes and beliefs in a pandemic made it possible to identify the most helpful ones (Jordan et al., 2020; Lunn et al., 2020). In particular, the most effective techniques were based on the activation of feelings of empathy and concern for others. In addition, the appeal to fear, the emphasis on the sense of duty, the reference to self-interest and personal benefit were also successful.

Effective tactics for rebutting beliefs based on misinformation also include appeals to coherence (explaining why a particular fake appeared and who benefits from it), fact-checking (referring to special Internet resources containing assessments of the reliability of various facts that appear in the media and social networks), and appeals to credibility (highlighting the fact that official agencies disagree with misleading assertions) (Walter and Murphy, 2018).

Changing inadequate beliefs based on misinformation will be more prosperous if the rebuttal comes from the same source from which the person received this information (Walter and Tukachinsky, 2019). Furthermore, the level of trust in the source of misinformation also matters: if this level is high, then such information is rather difficult to refute. The structure of the "rebuttal" message plays a major role in the success of the rebuttal (Cappella et al., 2015). It should include an indication of the falsity of some information and also arguments in support of the true point of view.

The frequency of repetition of misinformation and the time elapsed between its appearance and refutation should also be taken into account when correcting beliefs that do not correspond to reality. The longer this time and the more often unreliable information was repeated, the weaker the effect of refutation is (Ecker et al., 2015).

A significant role in debunking misinformation is played by the direction of the cognitive activity of a person – the recipient of the "refuting" message (Chan et al., 2017). The highest efficiency in the refutation is found when using special techniques (e.g., leading questions), with which it is possible to encourage a person to "think carefully" over the evidence provided to him/her that some representation is false.

Additional opportunities for correcting negative attitudes are provided by personalized influence, which involves considering the individual characteristics of the object of influence (gender, age, ethnicity, personal values, personality traits). Previously, the use of personalized influence in practice was limited due to the difficulties in obtaining data on individual features of people. However, with the development of digital psychometrics algorithms, the possibilities of its practical application are greatly expanding. Such algorithms make it possible to predict the person's psychological

characteristics based on his/her digital footprint (texts on social networks, posted images, features of net surfing). The results of personalized influence studies carried out in various fields of knowledge (politics, economics, healthcare) are encouraging (Matz et al., 2017; Krotzek, 2019; Fisher et al., 2020).

4. CONCLUSION

Despite the presence of psychological mechanisms that prevent a person from changing the system of negative attitudes and beliefs related to COVID-19, the task of correcting them does not appear to be insoluble. Moreover, modern science has accumulated a significant amount of data relating to the patterns of effective psychological influence, which inspires some optimism regarding the success of the counteraction towards them.

In the future, it will be essential to monitor and analyze traditional media and social networks to establish the beliefs and attitudes of the population in dynamics and identify socio-political events that most strongly influence their changes. The solution of this interdisciplinary task will open the possibility for subsequent automation of the correction of negative attitudes and beliefs of society based on psychological influence in response to new challenges.

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