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Multifaceted Nature of Social Media Content Propagating COVID-19 Vaccine Hesitancy: Ukrainian Case

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Abstract

COVID-19 became an issue affecting different parts of our life. Different communication campaigns use vaccination as an information peg, argument in discussions, and so on. As a result, they have an impact on people's attitudes to immunization. We applied the message analysis to the dataset of social media posts from Ukraine to detect the messages used in the communication regarding the vaccine and reveal communication campaigns propagating these messages. We found five campaigns launched by different actors and shaping the attitude to COVID-19 immunization expressed in the people's posts. The incoherence of the information about immunization and authorities` inconsistency in the communications about vaccines may lead to vaccine hesitancy and undermine confidence in the sources of the official information about COVID-19. Vaccine hesitancy has multifaceted nature and cannot be reduced just to politicians' conspiracy theories or far-right propaganda.

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1. Introduction

Fake news and conspiracy anti-vaccine campaigns are now at the center of the COVID-19 infodemic study. Therefore, there is not the only source of undesirable communication effects regarding the pandemic. COVID-19 crisis increased tensions in the society, so politicians, businesses, and the public sector launch different campaigns using vaccination as an information peg, argument in discussions, etc. A part of these campaigns propagates negative messages about immunization in general or some types of it. So, the infodemic problem is much more complicated than just the dissemination of conspiracy theories.

The problem`s reduction to just the conspiracy theories impact may lead to inadequate methods chosen to overcome the consequences of Vaccine Hesitancy. Choosing incorrect messages for persuasion campaigns aimed at vaccine promotion may lead to an opposite effect [1].

1.1. COVID-19 and social media

Social media are in the spotlight of COVID-19 scientific discourse. On the one hand, social media platforms were «effectively and efficiently used by healthcare organizations and various government institutions to create awareness on how to control the pandemic» [2]. On the other hand, social media analysis was proposed to improve forecasts of COVID-19 spread [3].

On the other hand, they became a venue for fake news and conspiracy theories called 'infodemic' by World Health Organization [4] or 'misinfodemic'. This phenomenon is closely intertwined with political communication in different countries. For example, in the United States was found that «the more extreme individuals' political ideology is, the more they will share claims (about COVID-19 – authors) published by an ideologically congruent source» [5]. In Brazil, pro-government and opposition partisans report very different expectations of health and job risks, and social media framing has a moderate impact on these expectations [6].

Due to the globality of information space, social media have a global impact on panic [7]. Misinformation may directly lead to the deaths, as it was in Iran where people drink methanol to avoid COVID-19 [8]. So, scholars advise authorities to use different communication strategies for official information [9]. Social media marketing aimed to build trust in public heals information about COVID-19 is considered the response for misinfodemic [10].

Immunization against COVID-19 is one of the topics influenced by misinfodemic. after the COVID-9 proliferation, vaccine opposition on Twitter increased by 80%. 'Opponents are intentionally leveraging the pandemic as an opportunity to promote their resistance to a COVID-19 vaccine' [11]. Some media diets, for example, news avoiding or social media dependence, are often accompanied by online discouragement of vaccination [12]. Also, vaccine hesitancy was predicted by sex, education, employment, income, having children at home, political affiliation, and so on [13]. Namely, Republicans are more likely to be anti-vaccine than Democrats [14]. 79% of authors of this content also write about a deep state, express right-wing opinions, etc. Only 18% of users mainly tweeted non-political content [15].

The main arguments used by people who publicly refuse to take the vaccine were conspiracies, vaccine development speed, and vaccine safety [15]. Vaccine opposition in the English-speaking Twitter communicates in themes including 'Negative health impacts', 'Pharmaceutical Industry', 'Policies & Politics', 'Vaccine Ingredients', 'Federal Health Authorities', 'Research & Clinical Trials', 'Religion', 'Vaccine Safety', 'Disease Prevalence', 'School' and 'Family'. [11].

However, most of the works studying immunization topics in social media used statistical instruments and do not apply communication analysis to determine information campaigns.

1.2. Information campaigns analysis

Methodology of communication campaigns research is a complex scientific issue. Despite the solid chapters on this topic in PR-handbooks [16,17], there is no universal approach. For example, the media impact project [18] concentrates on engagement detection. The most comprehensive models like the Knight foundation model [19] or the CoMTI model [20] require elaborating the custom sets of indicators to evaluate campaign efficacy.

All these indicators could be roughly divided into two categories: one examines the content and communication channels, requiring content analysis or discourse analysis. And the second studies audience and effects on it. However, PR practitioners elaborated so-called 'Barcelona principles' [21] that postulate primacy of the second group. Therefore, audience study cannot reveal the causes of the campaign's outcome, only its consequences.

The mixed quantitative and qualitative method of message analysis proposed by Zakharchenko [22] uses the coding of PR messages in media publications or social media posts. The message he defines as a judgment containing research object as a subject or predicate and recognized by analysts as significant for the particular campaign. This method allows determining the message spreading in different wordings, evaluating its cumulative engagement in social media, and determining its ways of disseminating.

1.3. Ukrainian communication space specificity

Ukrainian social media space is closely intertwined with Ukrainian political life. For example, former comedian Volodymyr Zelenskyi won in the 2019 presidential elections, received 73% support by adopting a non-agenda ownership strategy [23]. Since that his competition with the old political elite started. This elite is heterogeneous and consists of an incumbent Petro Poroshenko with a patriotic agenda, former prime minister Yulia Tymoshenko using social agenda, and 'Opposition Platform for Life' Party adopting pro-Russian agenda. Their competition is ongoing in the parliament as well as in the media and social media space.

Facebook is still the leading social media in Ukraine for users to consume news and provide political discussions [24]. This is the legacy of the Revolution of Dignity when Facebook was the main instrument of civic engagement [25–27]. Now, after Zelenskyi's victory, social media space became divided into segments with different political outlooks. Petro Poroshenko is still has a significant influence on Facebook, while Zelenskyi and pro-Russian forces are better on Telegram and YouTube [23]. Unfortunately, the Ukrainian social media community has almost loosed its unique skills of peer-to-peer counter-propaganda, developed during the first phase of the Russian-Ukrainian war [28,29]. Ukrainian social media users' activity is driven by a complicated narrative structure [30]. This activity is similar for different genders in political topics but very different in social ones.

The authorities` response to COVID-19 was frequently criticized by experts [31]. As a result, 54.7% of citizens of Ukraine do not trust official COVID-19 information [32].

2. Research design

As we learned from previous works [11,15], in the USA, vaccine hesitance and refusal are triggered not only by fake news or conspiracy theories: some posts were dedicated to other topics. Therefore, it is interesting to figure out what may be the origin of such topics.

RQ1. What were the most popular messages about vaccination in Ukrainian social media?

Clarification of this question will help to clear up whether our hypothesis is true.

H1. The most popular messages critical to vaccines are parts of communication campaigns not limited to conspiracy anti-vaccination campaigns.

To answer this question and check the hypotheses, we studied the dataset gathered by the Center for the Content Analysis on-demand on the Public Interest Journalism Lab [33]. It is a set of almost 64,000 posts from social media, namely, Facebook, Vkontakte, Odnoklassniki, Twitter, YouTube, and Telegram, in September-November 2020, beginning of active communications about COVID-19 vaccines in Ukraine, gathered by commercial monitoring system YouScan. The search request was formulated to find all posts containing Ukrainian and Russian terms for 'vaccine' or 'vaccinations' (and synonyms) and COVID-19 (and synonyms), because in the Ukrainian social media space both languages are used, sometimes by the same people and media.

We made a random sample of 2000 posts. Two coders trained to work with PR messages processed this dataset aiming to found these messages. Their results were generalized collaboratively by the authors of this article: the wordings of messages found by both coders were unified, conflicts in the results were resolved. Then the frequency of messages was calculated, and their dissemination was analyzed qualitatively.

3. Results and discussion

41 messages were found in the sample. 16 most popular are shown in Figure 1. Basing on the comparison of their appearance, we have determined 5 information campaigns to which these messages relate. They are often encountered together, sounded by the same speakers, serve a single communicational purpose.

The first one and the most popular is the typical anti-vaccine narrative, adopted for the COVID-19 situation. The messages of this campaign apply specific frightening fake reasoning about 'world government's plans, dangerous manufacturing, and so on. This is the only campaign in our study whose promoters are not detected clearly.
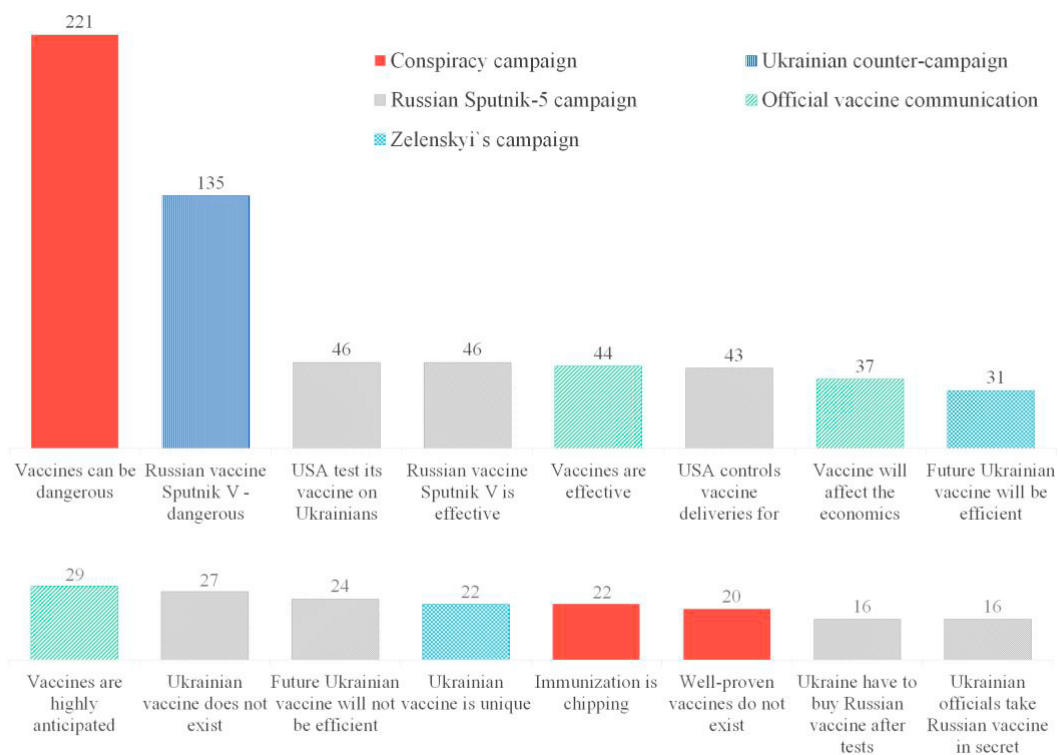

Fig. 1. The most popular messages in the sample and belongs to campaigns (the number of posts that contain the message)

The second was an official campaign deployed by the World Health Organization on the international level and by the Ministry of Heals of Ukraine on the national. These messages formed anticipation of vaccines and were covered not just efficiency issues but also economic and lifestyle implications of mass immunization.

The third was a campaign launched by President Zelenskyi and his associates given the local elections in Ukraine in late November 2020. They told about the Ministry's support to the Ukrainian team of vaccine developers and the unicity of Ukrainian vaccines. Some esteemed doctors related skepticism to these statements and called them just an electoral instrument to help the president's party win these elections.

The fourth Russian campaign to promote its vaccine Sputnik V. This vaccine is considered a Russian geopolitical instrument in a hybrid war [34]. The campaign aims to defy all western vaccines and stress the importance of Russia's contribution to COVID-19 overcoming. Specifically for Ukraine, they also defamed the hypothetical Ukrainian vaccine promised by Zelenskyi (see above). But critics of this vaccine were not only pro-Russian. The

same messages were voiced by some doctors asked by high-quality Ukrainian media. Supporters of Poroshenko also used this message for the critics of Zelenskyi.

The last campaign had a feature of self-organized campaigns typical for the Ukrainian social media space since 2013 and aimed at combating Russian narratives. This campaign was conducted by bloggers and journalists and made fun of the Russian vaccine and emphasized that it was not tested enough, so it is potentially dangerous.

Significantly, negative attitude to vaccines as is, not only to the particular type of vaccine, was detected in the posts with the messages of all campaigns, except for the second. This is especially true for the fourth campaign.

4. Conclusion

Our RQ1 was "What were the most popular messages about vaccination in Ukrainian social media?", and the answer shows that there were messages from at least 5 communication campaigns with domestic and international origin. Only one of them was a conspiracy theory.

So, dissemination of negative attitude to the COVID-19 immunization is not only the result of conspiracy theories with the undetermined founder. This attitude often has specific promoters and executors. It may be the side effect of campaigns aimed at other issues. The incoherence of the information about immunization and authorities` inconsistency in the communications about vaccines may lead to vaccine hesitancy and undermine confidence in the sources of the official information about COVID-19. For example, when the same source issues the information about vaccination necessity and then advertises questionable projects of national vaccine development, this also reduces confidence in the first statement.

So, H1 has been supported: The most popular messages critical to vaccines are parts of communication campaigns not limited to conspiracy anti-vaccination campaigns. As a result, vaccine hesitancy has multifaceted nature and also cannot be reduced just to politicians' conspiracy theories or far-right propaganda.

This paper has some limitations, namely, the specificity of the Ukrainian communication situation: all these campaigns were unfolded under the circumstances of the hybrid aggression directed at this country. Also, we were constrained to the YouScan system limitations, for example, we could gather only public posts. It would be interesting to compare our results with the results from other countries.

Acknowledgments

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