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Locating vaccine uptake and public participation in Ukraine: An exploratory qualitative study on attitudes and barriers to early childhood vaccination

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ABSTRACT

A growing body of literature on vaccine hesitancy considers context and the intersecting factors affecting vaccine uptake. This study attempts to add focus to the conversation of vaccines in Ukraine by exploring how vaccines are perceived and how local stakeholders envision solutions to the problems surrounding vaccine uptake. Twenty-five in-depth interviews were carried out among parents of children under 6 years of age as well as health practitioners and other experts in Ukraine. Results were presented to stakeholders during a dialogue session to discuss the implications for policy recommendations. The Roma parents interviewed faced structural barriers to vaccine access, while other groups received vaccine information from others in their communities, such as family members or religious organisations. Mistrust of the health system and lack of access to reliable information preceded many doubts parents expressed surrounding vaccines. Stakeholders agreed that better, more targeted communication strategies are needed, as well as increased engagement with and training of medical practitioners. Qualitative methods allowed for a deeper, more nuanced understanding of the factors contributing to low vaccine uptake, of which vaccine hesitancy is only one part. The vulnerability-informed approach used may have broader applications for community engagement and responding to infectious diseases and crises.

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Introduction

A wave of measles cases in Ukraine in 2018 renewed interest in reaching the necessary levels of vaccination in the population to prevent further outbreaks (WHO, 2020). Today, COVID-19 and other vaccine-preventable diseases persist, such as measles and the other diseases in Ukraine's national schedule of vaccination for children. Vaccine hesitancy as a concept is an increasingly important means of understanding (lack of) vaccine uptake in the context of many infectious diseases worldwide. Various iterations of this concept are used within research on vaccine uptake at the

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population level, including vaccine confidence, where public trust is considered alongside psychological and social factors (Larson et al., 2011) or vaccine readiness models, which draw more from psychological understandings of individuals' acceptance of vaccines (Geiger et al., 2022). The consideration of a spectrum of vaccine hesitancy (Gowda & Dempsey, 2013) adds further complexity to the issue, begetting the question of whether or not a 'knowledge deficit' model of intervention is appropriate (Dubé et al., 2015; Lehner et al., 2021). Debates on these terms became pervasive in the COVID-19 pandemic for exploring certain groups' unwillingness to vaccinate against the disease (Hsu et al., 2022; Karafillakis et al., 2022). In all, the lack of uniformity in the field suggests a continued need to conduct research on vaccine uptake that adds clarity by considering the breadth of framings in context.

A social science approach contributes to a deeper understanding of public health problems, particularly by focusing on processes and realistic solutions. Vulnerability is a concept that has been used in social studies of infectious diseases and includes not only biological factors that increase risk of disease, but also the behavioural, social, and systemic issues that contribute to individual and population health (Osborne et al., 2021). The 'public' is then an active participant in the shaping of infectious diseases response, rather than a passive recipient of policy or behaviour change interventions (Stephenson et al., 2014), and conceptualising these responses on the community level, rather than using strictly biomedical or behavioural approaches, shows promise for addressing vaccine uptake or other infectious disease threats (Enria et al., 2016). By conducting qualitative research to identify vulnerable groups and the contributing factors to vulnerability, it becomes possible to help mitigate vulnerabilities through engaging with communities and enacting community-based interventions. That is, by identifying context-specific vulnerabilities with rich data on real-world experiences of those most affected by a particular disease, local actors can be engaged in responding to vulnerabilities.

From this framing, we may consider behavioural factors as larger than intra- or inter-personal dynamics. It is important to consider context, group influences, and perceptions of the vaccine itself to first understand what contributes to vaccine hesitancy or low vaccine uptake, then to address these factors with the same community-based principles. A focus on vulnerability places the concept of vaccine hesitancy within a larger context of 'factors' or processes that influence particular groups' ideas about vaccines. The approach taken in this study therefore relies on a conception of vaccine hesitancy or vaccine confidence that resembles the framing used by Larson et al. (2011), but ultimately does not attempt to fit within one particular model. Instead, we seek to add focus to the conversation on vaccine hesitancy in Ukraine, while proposing new avenues for research and policy. As part of the European Union-funded Sonar-Global (Giles-Vernick et al., 2019), this study generally contributes to the growing call for more social science research within infectious diseases, specifically focusing on identifying local vulnerabilities and engaging with communities. Within the field of vaccine hesitancy among parents, this study also supports a body of literature where more research is needed in low- and middle-income countries like Ukraine (Ames et al., 2017).

The central questions in this study pertain to the extent to which vaccine hesitancy is influenced by social relations, the role of institutions and systems in vaccine uptake, and the potential for public health interventions for increasing vaccine uptake among the 'vaccine hesitant', in quotes here to represent the uncertainty of the term in a context where many other factors contribute to vaccine uptake. Here we focus particularly on nationally recognised vulnerable groups such as low-income families or Roma communities. A focus on nationally recognised vulnerable groups provides a natural entry point for understanding the wide array of factors affecting vulnerability in the Ukrainian context, in addition to having direct implications for eventual policy recommendations. Where the issue of access may be present, we ask how vaccine hesitancy could be considered alongside broader framings of vaccine uptake to include systemic and structural factors. This study attempts to answer these questions by providing a few insights on the complexities present in vaccine hesitancy for parents of young children in Ukraine and subsequently suggesting a link between these insights and community-based interventions.

Methods

Research design and data collection

This study took a two-step process in data collection: (1) 25 in-depth semi-structured interviews with 15 parents of children under 6 years of age and 10 stakeholders and experts, as well as (2) a stakeholder dialogue meeting with 13 participants to discuss interview results and propose policy recommendations and other solutions. This took place during May–July 2021. The framing of the research design is based on the vulnerability-community engagement model in Osborne et al. (2021), where factors such as history, social context, systems, and structures form an understanding of vulnerability and informed the development of interview questions. Other community-based qualitative studies of immunisation campaigns have taken similar approaches, using interviews, focus group discussions, and thematic analysis (Bedford et al., 2017; Oku et al., 2017).

In order to form a contextual understanding of vulnerability and vulnerable groups, 15 interviews were conducted with parents. Among the vulnerable groups represented in this study, three to four parents were interviewed from each group. We did not seek representativeness across the groups, but instead focused on developing new insights on the context, where in-depth interviews allowed for a more detailed understanding of participants' experiences. Participants representing the following groups were interviewed, noting that some individuals belonged to multiple groups: people from western Ukraine (the region with the lowest level of measles vaccination coverage) ($n = 6$); those with low-income (up to 4000 UAH or roughly 140 USD per person in the household) ($n = 4$); single parents ($n = 4$); nationally recognised minorities (Roma) ($n = 3$); internally displaced persons ($n = 3$); and religious groups ($n = 4$), given their potential influence in shaping narratives around vaccine campaigns (Sorell & Butler, 2022). Participants were located in the cities of Kyiv ($n = 5$), Dnipro ($n = 4$), Lviv ($n = 3$), and Uzhhorod ($n = 3$). A further ten experts were interviewed about their views on vaccination: epidemiologists ($n = 2$), health care practitioners ($n = 3$), representatives of public organisations ($n = 2$), and representatives of charitable foundations and religious organisations involved in the promotion of vaccination among parents ($n = 3$).

Each participant was contacted by email or telephone through contacting relevant organisations and existing networks. Other participants, such as religious representatives and health practitioners were contacted via a snowball method through contacts in the Public Health Center of the Ministry of Health. For all participants, a short description of the study was presented, as well as an informed consent form. If the respondent agreed to participate, they were asked several socio-demographic screening questions and then invited to take part in the online or telephone interview. All interviews lasted approximately 1 hour and parents were compensated for their participation in the amount of 350 UAH (approximately 12 USD) following the interviews. While a relatively high amount compared to some participants' income levels, this compensation was considered appropriate by the local researchers, who were familiar with the context and able to ensure that compensation did not affect power relationships in any significant way. Data from the interviews was transcribed and analysed thematically using concepts relating to vulnerability (see further detail on data analysis below), then compiled into a brief report. Interviews were carried out in Ukrainian or Russian by an experienced qualitative researcher associated with The Public Health Center. The number of refusals to participate or reasons for refusal were not recorded.

A second group of individuals was selected for the stakeholder dialogue based on their connection to the relevant themes seen in interview data, including representatives from the Public Health Center, health care practitioners, NGOs representing Roma and other groups, as well as an organisation primarily interested in advocating for childhood vaccination. The meeting, carried out by MG, MG, and JO, took place online due to physical limitations of COVID-19 measures. Stakeholders were informed of the study details and consented verbally to participate, after which they were presented with the results of the interviews during an online dialogue session, describing challenges faced by specific groups as well as cross-cutting vulnerabilities in the light of current

recommendations from the official schedule of vaccines in the country. Participants were then asked to reflect on and further synthesise and verify the results of the interviews, as well as workshop policy recommendations or other solutions that could potentially help mitigate vulnerabilities. Recommendations were therefore based on both the results from the interviews as well as stakeholders' own knowledge and experience from the field. The meeting was held online and hosted by the Public Health Center of the Ministry of Health. It was not recorded, but researchers took notes during the meeting to record all outcomes and any relevant verbatim quotes. Ethical approval for this study was obtained by the Ethical Commission of the Public Health Center of the Ministry of Health of Ukraine.

Data analysis

Transcripts were analysed in the interview language by two researchers (MG, MG) and in English by one researcher (JO), all with experience in qualitative data collection and analysis. Results were discussed during regular meetings amongst all authors and codes were developed inductively, representing various themes that emerged from the data. These themes were aggregated according to the conceptual framing introduced earlier in this article, especially in connection to vulnerability (e.g. access to healthcare, financial precarity, geographic location, displacement), in an analytical approach based on qualitative thematic analysis (Guest et al., 2012).

Results

Results are organised here first based on data from interviews and then from the stakeholder dialogue session. The interview data could be grouped into two sections that follow the greater thematic lines of this study, including: (1) structural and health system constraints, focusing on the social and systemic aspects that afford vaccine access and uptake, including barriers within the health system, and (2) conceptions and knowledge of vaccines, which details participants' perceptions of vaccines and how information about vaccines circulates within communities.

Structural and health system constraints

Among the groups surveyed in this study, different experiences with accessing health care and vaccine information were observed. Some of those difficulties came with structural barriers. This was especially the case with Roma communities or low-income households where they may face the barrier of geographic distance from healthcare facilities or of having to show identifying documents to access healthcare. Moreover, some participants indicated that they had strained relationships with their general practitioners or other healthcare providers. Two women expressed confusion about navigating the health system and a lack of readily available and comprehensible information from doctors:

She prescribed drugs that could not be prescribed to the child, they caused complications. Eventually, she wanted to put us in the hospital. There were many cases that her treatment didn't help and only worsened the situation. Sometimes I just visit a certain doctor and pay for such an appointment. (Internally displaced person, Ukrainian woman, 33 years old, Dnipro)

If you have no idea what kind of disease it is, and you haven't experienced it or had among acquaintances, then you think maybe you shouldn't be vaccinated, because you don't know what it is. And if it would have been explained properly, then maybe I had the understanding that vaccination is necessary. (Roma woman, 37 years old, Uzhhorod)

On the other hand, doctors indicated that the vaccination calendar is optimally built, predictable, easy to plan, and the unified list of vaccinations shows information about current and future vaccinations. The fact that the calendar contains not only mono – but also combined vaccines reduces

the burden on the child: minimising the number of visits to the hospital and the stress of injections and reducing the risk of barriers in parents associated with frequent vaccinations.

A visit to the primary care physician was particularly burdensome if user fees are involved or if the general practitioner is located in another city than where they were currently located. This was especially the case with internally displaced people from the eastern part of Ukraine where there has been ongoing conflict since 2014. Tenuous relationships with healthcare practitioners were further seen when ‘doctors explain nothing’ (Roma man, 42 years old, Drogobych), or when a trip to the clinic seems to cost more than it is worth:

Doctors are different, some of them want only money from you, and others are normal people with a good attitude. I do not trust them in general. (Roma woman, 42 years old, Uzhhorod)

Also contributing to structural vulnerability here were unemployment, partial employment and lack of a stable source of income, which are among the most evident vulnerability factors of nearly all groups that participated in the study. The Roma community is one such group, whose members were reported as often being on the brink of poverty and are exposed to other social vulnerabilities. The Roma’s difficult situation is associated with many factors, which include: lack of community resources, lack of funds for proper nutrition and medicine, low levels of education, low access to online information, and absence of registration and identifying documents. This is emblematic of the types of barriers that come into play not only with vaccine hesitancy, but also as a primary reason for limited access to services in general. It’s clear that conditions of poverty compound the issue of access to healthcare and therefore access to vaccines.

We have no specific restrictions for children. Children grow up in the street, it is normal here. When you live near Roma camps, there are usually no restrictions. ... Medical services are very expensive now, drugs in particular. If your child is ill and you have a social payment of UAH 800 per child, you cannot buy both fruit and drugs. When a child is sick, you need to spend crazy amounts of money on treatment. Medicine is a very expensive pleasure in general. (Roma woman, 25 years old, Uzhhorod)

Life is very difficult. We don’t have enough money, especially for heating, we try to use firewood because gas is very expensive. There is no central water supply, we have to use a well. Sometimes we have enough money, sometimes we are down and out. My husband doesn’t have a stable income, he works occasionally. I was laid off so I don’t have a job at the moment. I have two children. Sometimes I don’t have food for myself, because I give everything to my children. I would like to provide a better future for my kids. (Roma woman, 37 years old, Uzhhorod)

The Roma participants in this study expressed concern of society’s wary attitude towards them. Roma parents worried that their children would not be vaccinated with the same vaccines as children in the general population. In addition, this group had a low awareness of vaccine-preventable diseases, with the exception of tuberculosis.

Conceptions and knowledge of vaccines

A second, complementary domain is the varying perceptions of and sources of information surrounding childhood vaccination. Some groups might face structural barriers to accessing reliable information or health facilities and resort to other sources. Respondents indicated that this could include family members or other people in their communities, religious organisations, or from the internet. Sources of information were usually sought outside the official health system channels if those official resources were seen as untrustworthy or insufficient. The magnitude and diversity of opinions on vaccines was also seen to be barrier for some:

I do not study this information so deeply, because I do not understand the meaning of some complicated words. I read reviews on Instagram. (Internally displaced person, Ukrainian woman, 33, Dnipro)

I came to a decision not immediately; I heard something from a doctor, then from a relative, I received a link to a book and read it, also read here and there. Probably, it is how my awareness developed and decision was

formed concerning whether to vaccinate my child or not. (Respondent from a religious family, Ukrainian woman, 37 years old, Dnipro)

Most of the parent respondents indicated that they were not opposed to vaccination. However, fear of negative vaccine side effects proved to be one of the main drivers of hesitation. The strength of evidence-based information from official sources is at times in opposition with anecdotal knowledge. The decision to vaccinate for two women lay not with having the most information about vaccines, but being convinced that the vaccine would work without causing untoward effects:

My husband's Godfather was once admitted to the intensive care unit after vaccination. And when I thought about vaccinating my child, my memory always brought that back and got me thinking whether it (vaccination) is worth it? Often, my worries about the consequences of vaccination outweigh the worries of my child getting sick with the disease. (Respondent from a religious family, Ukrainian woman, 42, Lviv)

When my youngest daughter was born, I began to take an interest. Until that moment, honestly, I hadn't even thought about it at all. And I never had a thought to look for information on why vaccinations are bad. I just have heard from my friends about the possibility of negative consequences. My friend, after having a conversation with someone, said that she would not vaccinate her child. (Internally displaced person, Ukrainian woman, 33 years old, Dnipro)

At times community sources of information about vaccines in general were negative, illustrated by one individual associated with a religious organisation, who voiced their distrust in the vaccine for COVID-19:

I do not want to be vaccinated against coronavirus by any vaccine because there is no trust among the population. When you follow the news, each vaccine has side effects, there thrombosis is something else. In general, I do not trust the COVID-19 vaccine, because I am waiting for one that will guarantee protection. Less trust from the east, more trust from the west. (Medical chaplain)

Occurrence of negative side effects was believed to depend on the country of vaccine production and there is prejudice towards vaccines made in India or other Asian countries. Parents believed these vaccines to produce more adverse events in comparison to vaccines produced in Europe. Several quotes below illustrate this issue, the first indicating a connection to choice in vaccine, while others suggest a general shoddiness, or illegitimacy of Indian vaccines:

I will choose a manufacturer in which I will be sure and which my doctor will advise. There are vaccines produced in France, and there are vaccines manufactured in India. I will choose a vaccine with minimum side effects. (Internally displaced person, Ukrainian woman, 33 years old, Dnipro)

She goes on to explain her hesitancy with Indian-produced vaccines, and that a medical doctor had reinforced this belief:

The main thing for me is that they (vaccines) are not Indian. The child always has a 100% strong reaction to them. For example, the injection site always swells, I asked other mothers too. Also the temperature lasts for 3 days. A doctor, who has a long experience of vaccination, said that the Indian vaccines show worse reactions and are not tolerated that well. It is necessary to give more painkillers to a child, the leg can hurt for several days ... For example, I was told by some women about two cases of autism development after Indian vaccine. (Internally displaced person, Ukrainian woman, 33 years old, Dnipro)

There are no guarantees that this [vaccine] has not been illegally produced in some basement in China. Nowadays there are a lot of fakes. (Internally displaced person, Ukrainian man, 42, Drogobych)

I am in favour of the Ministry of Health taking all possible steps to ensure a high level of quality of vaccines supplied to Ukraine. (Priest of a Greek Catholic Church)

In all cases above, participants suggest a mistrust of vaccines produced in certain countries. It remains a question as to exactly where these claims originate or how much legitimacy they carry. The Greek Catholic priest's remark shows the pervasiveness of the perception that some vaccine manufacturers are of worse quality than others.

Stakeholder engagement process

After hearing about the results of the interviews (presented above), the stakeholders discussed and recommended three main areas improvement based on the presentation of interview results: (1) improved information provision around vaccines, (2) incorporation of these and similar research findings into future trainings for healthcare practitioners, and (3) improved services for Roma populations.

Participants mentioned that existing organisations such as the Public Health Center of the Ministry of Health of Ukraine can use more adapted insights on contextual factors contributing to vaccine hesitancy in order to better their public messaging on vaccines. Improved access to trustworthy information should be improved, especially for those in geographically remote locations. Stakeholders agreed that accurate information should be relayed to parents and patients, including: how to prepare for vaccination, how vaccines work and for which diseases, why it is necessary to be vaccinated at an early age and according to the official immunisation schedule, and what to do in case of adverse events. It was mentioned that parents may be motivated by ‘success stories’ of vaccinations, where parents of children publicly share their perspective of the vaccination process. In order to facilitate vaccine uptake at the community level, stakeholders suggest a ‘vaccination trend’, increasing informative public messaging and involving authoritative public figures like politicians or entertainers.

Several stakeholders suggested that the study findings potentially have important implications for the way that medical professionals are trained. Further, certain findings that involve more systematic data collection could be implemented into trainings or information campaigns from public health bodies. The group also indicated that health practitioners should increase their skills and knowledge of vaccine uptake in vulnerable groups, including: knowledge about the problems that certain groups face and adapted working methods for approaching these groups, as well as use of standardised materials, such as the official immunisation schedule. It was also mentioned that increasing practitioners’ awareness of vaccination should begin while they are in training and that protocols should allow junior personnel to be able to administer vaccines, potentially reducing the time spent in medical facilities for parents.

Participants argued that more could be done to strengthen civil society organisations that work with Roma communities. In general, community engagement should be a sustained and institutionalised endeavour that encourages access and use of health services, including vaccines. Local non-governmental organisations (NGOs) can support this process and act as intermediaries. A similar model is already in place, but is currently financed by foreign aid. Some concrete actions that can be taken include translating information into local languages or removing the requirement to show identifying documents at health facilities. The head of a Roma NGO expressed these concerns during the stakeholder meeting:

It is important to avoid the access to vaccines with passport only; or expanding the list of such documents by alternative means of identification. ... Duplication of information on vaccination in local languages is important. Present information using infographics and/or simplified text, easy to read. (Head of Roma NGO)

Discussion and conclusion

To our knowledge this is the first study using qualitative methods to explore vaccine uptake and hesitancy among parents in Ukraine, and among the first to do so among health care providers and experts in the country. The results of this study have shown that structural and health system constraints reduced some groups’ access to information and travel. In many cases, this constraint contributed to information-seeking via channels outside of those offered by health authorities (e.g. family members, religious communities), and at times leading to more negative opinions on vaccination, especially in children. In a dialogue session, stakeholders agreed that better, more targeted communication strategies are needed, as well as increased engagement with and training of medical practitioners.

What is immediately clear from the results of this study is that vaccine uptake is a multi-factor phenomenon, and one that is especially dependent on structural aspects like access to trustworthy healthcare services. What is termed vaccine *hesitancy*, then, may be better framed in this context to consider the more structural ways that contribute to low vaccine uptake, including lack of access. Information about measles and other early childhood vaccines was sought out by sources who were deemed trustworthy or convenient. If, either by lack of easy access or previous negative experience, official sources of information were not accessible or properly suited to the target population, other means were relied upon. This becomes potentially problematic when these alternate sources of information do not provide medically accurate information for those with doubts or questions. These themes are consistent with some of the current literature on public perception of vaccines (Hrynick et al., 2020; Peretti-Watel et al., 2019) as well as with similar studies of the Ukrainian health system's response to infectious diseases (Romaniuk & Semigina, 2018; Tokar et al., 2019). Lack of trust and access to health care as barriers to vaccine uptake have been found in other contexts (Schellenberg & Crizzle, 2020; Syiroj et al., 2019) and are clearly important aspects of improving vaccine confidence.

Returning to the concept of vulnerability, we see that this process of having to search for answers outside the health system is a relational one, where factors such as ethnic identity, income level, or geographic location contribute to a better or worse relationship to reliable and responsive health services. This is where vaccine hesitancy becomes complicated by the contextual factors in which the 'vaccine hesitant' are located. For example, from this study we see that the institutions that purport to work to encourage vaccine uptake are not always available or acceptable. Health practitioners themselves may fall at various points on the spectrum of vaccine hesitancy, as seen in other contexts (Ecker & Kutalek, 2021; Heyerdahl et al., 2022). Bazylevych (2011) similarly describes vaccine hesitancy in Ukraine and makes clear connections to political and historical factors using accounts from healthcare providers. They find that healthcare practitioners situate themselves as a gatekeeping authority for vaccine access to justify discouraging vaccination for patients. Similar to some of our findings, Bazylevych shows that vaccines produced in western European countries were perceived to be of higher quality than Indian-produced vaccines, seemingly reinforcing a positioning of Ukrainian society among the likes of western democracies.

Given the potential utility of the knowledge that thick qualitative data on vaccines and vaccine hesitancy within certain specific social groups can yield, how can we use these and similar methods for engaging with stakeholders and others who are involved in communities? Enria et al. (2021) highlight the importance of recognising social processes in vaccination research in general, while using community-led ethnography to bring to light the highly contextual factors that individuals and groups may present hesitancy towards certain vaccines. The dialogue with stakeholders in the current study resulted in some useful suggestions. The first, regarding increasing accurate and trustworthy information to the public, reflects the tendency for some of our participants to rely on community members or other sources of information when that from official channels was for whatever reason perceived as unsatisfactory. However, this point does not address the issue of access; most of the participants in this study were not categorically against vaccinating their children. Stakeholders recognised this when discussing more structural level interventions for Roma populations, but also began to recognise the important role that healthcare practitioners themselves have in affording access to vaccines and acting as a trustworthy source of information. The existing models to understanding vaccine hesitancy, such as those presented in the introduction of this article, may provide some important contributions to understanding certain elements of vaccine hesitancy, but it is clear that no single model captures the multiple and intersecting contextual factors associated with hesitancy and uptake.

The stakeholders within our study represented professionals with various cadres geographic regions. They could therefore use their existing knowledge and experience to synthesise study results and generate broad, yet highly relevant policy recommendations. For instance, stakeholders recognised the importance of sustained engagement with groups who are most at the margins

(Roma, low-income, geographically isolated) but also the more far-reaching issue of general acceptance of information from official sources and the ease of accessing reliable, evidence-based information. This study suggests that the decision to vaccinate is influenced by the social environment and interventions should consider this side of vaccine hesitancy alongside more basic measures such as information provision. Information dissemination through public campaigns and provision at health facilities was suggested by stakeholders, although with no clear consensus as to what this should be specifically, beyond that all information should be tailored to the needs and expectations of the community. Future research could draw from current literature on vaccine campaigns and their interaction with the public (Goldenberg, 2021, for example) and add focus to the content of such information provision, including what kinds of messages work best and through which channels.

More structural level public health actions may be well suited to address the acute need to increase vaccine uptake, as well as the long-term issues such as access to services and trust in health-care providers. Insights from other contexts suggest that policy decisions should afford country ownership and health systems strengthening (Closser et al., 2016) – a particularly important issue in the context of Ukraine, where large international organisations provide aid and determine policy objectives (Carroll, 2011; Tokar et al., 2019). Recent reforms in the Ukrainian health system are being rolled out (Romaniuk & Semigina, 2018), including at the primary care level, making it an especially important time to monitor how the changes work for those who are ‘vulnerable’ and assess how these structural changes affect parents’ relationships with healthcare providers. The Public Health Center working as a partner in this study already represents a great advantage and signal for future support on a policy level, where insights from the social sciences and a focus on vulnerable groups may be taken seriously. At the same time, the war in Ukraine beginning in February 2022 represents serious challenges for the country’s institutions and most vulnerable populations. Dynamics regarding vaccine uptake are never static, even in times of peace, but the movement of people and disruption of systems calls into question how vaccine programmes will proceed, especially with regard to attitudes and trust in government entities.

Given the relatively limited scope of this study, there are some important limitations to acknowledge. First, while this study does not attempt to produce representativeness within the Ukrainian context, or even within the groups discussed in this paper, the number of interviews and stakeholders involved in producing policy recommendations is small. However, this study is an exploratory one and is meant to acknowledge the diversity of experiences surrounding vaccine hesitancy, including some patterns in facilitators and barriers. The process that we have described in this study highlights the very specific and contextual nature of vaccine hesitancy, where community engagement and a specificity without generalisation may be advantageous. Similarly, it is difficult to systematically include the wide variety and depth of opinions on vaccines given the limited scope of this research. Additional research with interviews, focus groups, or other methods should be conducted to strengthen the results described above. Though not necessarily a limitation, it is important to note that the data from this study were collected in 2021, before the start of the current war in the country. The opinions expressed by study participants may have very well changed, especially those that are directly related to trust in government institutions. Nevertheless, this study provides some new knowledge on an ever-evolving subject, and whose approach may be used in Ukraine and other similar contexts.

Conclusion

This study illustrates that deliberate social sciences-driven data collection to learn about vulnerabilities in the light of a particular hazard, brought into a dialogic exchange with stakeholders can result in solutions that, when implemented, may contribute to reducing the barriers to vaccine uptake that are caused by particularly situated vulnerabilities. The study shows that structural and social vulnerabilities may be very important to consider for their contributions to not only access to vaccines

but also how people seek and obtain information about vaccines. Vulnerability is a concept that can help frame our understanding of what influences vaccine uptake, moving beyond strictly biomedical or behavioural notions of the issue to include all of the relational aspects of information and access to vaccines. We can also say that, compared to other approaches, engaging with communities and encouraging participation may result in more novel or applicable solutions, as was seen here in the stakeholder engagement process. Finally, qualitative methods and the use of social science concepts can be vital in understanding vaccine uptake (and vaccine hesitancy) within certain communities and producing and solutions. Concepts that move beyond individual behaviour change theories and consider some more structural and social aspects may be useful for approaching vaccine hesitancy in Ukraine and in other contexts.

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