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Vaccine Hesitancy Amidst COVID-19 Pandemic: Insights from a Focus Group Study in Croatia

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Abstract

Even though vaccination has been regarded as historically one of the most successful public health interventions, vaccine hesitancy still remains an important health issue. In order to explore this issue, the authors conducted four asynchronous online focus groups with the total of 40 Croatian citizens. Drawing on iterative thematic analysis, three emerging overarching reasons of vaccine hesitancy were determined: risk perception (cost-benefit ratio), belief in natural immunity and institutional distrust. In addition, three possible cross-cutting topics emerged: communication with healthcare workers, influence of media, social media and the Internet, and COVID-19 pandemic. A widespread dissatisfaction with healthcare workers is tentatively explained by proposing the concept of 'false autonomy' of patients when making vaccination decisions. As for the COVID-19 context, the participants often cited their awareness of the profit-driven healthcare system in conjunction with the development of COVID-19 vaccines. The authors conclude by framing the study results into the wider social context of individualistic consumerism, postmodern health beliefs and the characteristics of Croatian healthcare system, as well by calling for more in-depth studies of vaccine hesitancy.

Keywords: vaccine hesitancy, COVID-19, focus groups, healthcare, vaccination.

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1. Introduction

Although vaccination has been regarded as historically one of the most successful public health interventions, there can be noticed a growing lack of confidence in vaccines in developed countries, which threatens vaccination programs (Dubé et al., 2013). Safety or effectiveness of vaccines is often publicly questioned (f, Black and Rappuoli, 2010; MacDonald et al., 2012; Poland et al. 2009), but it leads to vaccination refusal only in a small number of cases – usually only 5 to 10% (Leask, 2011). However, there are far larger numbers of those who are to a greater or lesser extent hesitant regarding vaccination (European Centre for Disease Prevention and Control, 2015; Ferrante et al., 2019; Fournet et al., 2018; Lane et al., 2017; Leask et al., 2012; Soares et al., 2021). Vaccine hesitancy 'refers to delay in acceptance or refusal of vaccination despite availability of vaccination services' (MacDonald, The SAGE Working group, 2015: 4163), and it is used as an umbrella term that covers various behavioral dispositions and behaviors related to vaccination (for a review of different operationalizations, see Sallam, 2021).

Since there are numerous factors influencing vaccine hesitancy, it is not easy to categorize them in a simple way. Relevant literature suggests seeing vaccine hesitancy as a continuum ranging from a vehement advocacy of compulsory vaccination to a complete refusal of all vaccines, with the term 'vaccine hesitant' reserved for a heterogeneous group, wherein persons can refuse only some vaccines, delay vaccine schedule, or refuse non-compulsory vaccines (Opel et al., 2011). In a comprehensive critical literature review, Yaqub et al. (2014) pointed out that most cited reasons for vaccine hesitancy are safety concerns (Andre et al., 2008; Craciun, Baban, 2012; European Centre for Disease Prevention and Control, 2015; Harmsen et al., 2013) and distrust of pharmaceutical companies and government sources (Craciun, Baban, 2012; Jamison, Quinn, Freimuth, 2019).

Vaccine hesitancy is also considered to be a context-dependent phenomenon (Macdonald, The SAGE Working Group on Vaccine Hesitancy, 2015), i.e. it is under the influence of historical, political and socio-cultural context in which vaccination occurs. For example, the context can include trust in health professionals, politicians and the media (Larson et al., 2011; Lewis, Speers, 2003; Orr, Baram-Tsabari, Landsman, 2016), specific religious beliefs (Ruijs et al., 2012), social media influence (Germani, Biller-Andorno, 2021), as well as activities of organized groups (Hobson-West, 2017) and influential individuals (Mesch, Schwirian, 2014). Consequently, it is important to briefly acknowledge that our study is conducted in a specific place (Croatia) and in a specific time (COVID-19 pandemic). Even though there has been little research on the topic of vaccine hesitancy in Croatia, it can be noted that the level of

vaccine hesitancy before COVID-19 pandemic was relatively low, possibly due to the tradition stemming from public health interventions from the socialist period, when vaccination was strongly legally enforced and arguably widely accepted. In Croatia, childhood vaccination is currently mandatory against 11 diseases (tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis, Haemophilus influenzae serotype b (Hib), pneumococcal diseases, hepatitis B, measles, mumps, and rubella), with coverage rates ranging from 89% (Hib revaccination) to 98% (BCG) (Croatian Institute for Public Health, 2019).
Repalust and colleagues (2017) determined that only a minority of Croatian population was characterized by childhood vaccine refusal (10.6%) and hesitancy (19.5%). Lovrić Makarić et al. (2018) conducted a survey on parents using self-administered questionnaire, demonstrating that the majority of parents (62%) had completely positive attitudes towards vaccination. Tomljenovic, Bubic and Erceg (2020) determined that only 4% of parents stated that their children have not received any of the mandatory vaccinations. As for the COVID-19 vaccination, the current data (as of November 2021) show that about 60% of the adult Croatian population received COVID-19 vaccination (Government of the Republic of Croatia, 2021). It is possible that the eradication and non-visibility of infectious diseases in the developed countries made it more challenging to realize the benefits of immunization. The context of COVID-19 pandemic provides us with an opportunity to probe into the attitudes and opinions of citizens about vaccination, especially bearing in mind that the pandemic probably has made this issue more salient for everyone. The topic of vaccination is very much present in contemporary public opinion since vaccines are currently the most often proposed solution for the control of the pandemic. Consequently, the previous opinions and attitudes towards vaccination are "contaminated" by the current health crisis, and the effort has to be made to differentiate between the attitudes towards vaccination in general and the COVID-19 vaccination.

In sum, there is a wide list of factors that could potentially affect vaccine hesitancy, especially taking into consideration its context-dependence. Also, qualitative research can offer new insights into the phenomenon of vaccine hesitancy, especially regarding potential changes that are happening in the midst of the COVID-19 pandemic. With that in mind, the research presented in this paper was conducted.

2. Methods and sampling

Given both the contextual factors in the time of data collection (COVID-19 pandemic, December 2020 and January 2021) and the sensitivity of the

research topic, the decision was made to use asynchronous online focus groups as a data collection method. Adaptation to the virtual world had also been recognized in the area of social research (Boydell et al., 2014) and online research methods such as focus groups have been met with a wide range of critical overview and advocacy for their use in social science research (Archibald et al., 2019; Boydell et al., 2014; Gordon et al., 2021; Kamberelis et al., 2020; Williams et al., 2012). As Williams et al. (2012: 379) concluded in their systematic review of the method use in health research, 'the written, anonymous, and asynchronous nature of the online focus group can facilitate greater self-disclosure, increased reflexivity, and an opportunity to collect details of participant experiences over time'. There are some indications that the participants evaluate asynchronous online focus groups as enjoyable and convenient (Gordon et al., 2021; Zwaanswijk, van Dulmen, 2014).

In general, focus groups are also considered to be a valuable qualitative method mostly because of the ability to overcome latent power imbalances which can emerge in other forms of research designs such as questionnaires or interviews (Nicholas et al. 2010). In this sense, it is important to note that vaccine hesitant persons might experience social exclusion or even media shaming (Rozbroj, Lyons, Lucke, 2019; Silverman, Wiley, 2017).

The sampling strategy consisted of a combination of snowball and purposive sampling with an aim of including persons from different age groups and socioeconomic backgrounds in order to be able to obtain diverse opinions and attitudes from both ends of the vaccine hesitancy spectrum. In other words, the authors of the study started from the several participants from various backgrounds and attitudes towards vaccination, who in turn recommended additional participants. The final list of the participants was constructed with the aforementioned diversity in mind. Even though the issue of heterogeneity vs. homogeneity in the focus group design is still a debated issue (Roller, Lavrakas, 2015), given the immense sensitivity of the topic, we chose the homogeneity principle based on the already existing disposition with regard to vaccine hesitancy. Consequently, four focus groups were held, one for vaccine hesitant persons, one for vaccine non-hesitant persons, and two groups with partially-hesitant persons. In order to direct participants in the suitable focus group, a filter question which probed into general opinions about vaccines with four mutually exclusive response options was used. The participants who chose the answer 'I think that vaccines are generally useful and I would vaccinate myself and my children' are labelled as non-hesitant, while those who indicated 'I have serious doubts about vaccination in general' are labelled as hesitant. The participants who indicated the two remaining answers – 'I have some doubts about some of the vaccines' and 'I am generally in favor of vaccination, but I oppose compulsory vaccination of any kind' – are defined as partially hesitant.

The total of 40 participants took part in the study. Demographic breakdown of the study participants is outlined in Table 1.

TABLE 1. Study participants

Size and number of focus groups	F1 – vaccine hesitant – 10 participants F2 – vaccine non-hesitant – 10 participants F3 and F4 – partially hesitant – 10 participants each
Age range	From 27 to 69 years (average age was 43.74)
Gender	21 female, 19 male
Parental status	27 parents, 13 non-parents
Educational level	13 with a secondary school degree, 27 with a graduate degree

Source: The authors.

The data were collected in December 2020 and January 2021 by using a platform for asynchronous online focus groups. The participants could log into the platform using anonymous username, post their contributions and comment on other participants' opinions or moderators' comments. The informed consent was given during the process of entering the platform. The participants were provided with the opportunity to change their mind and delete their contributions within the period of 30 days after the last contribution had been posted.

The unstructured data were analyzed by using the latest version of NVivo, a software for handling qualitative data. This helped us to discern emerging themes, as well as to organize them, and to visualize them when necessary. An initial analysis was carried out independently by two authors, while the identified codes and themes were subsequently developed through iterative and reflexive discussion within the research group. Given their academic background, as well as the high personal relevance of the research topic, the authors were well aware of the possible bias and misinterpretation. Therefore, the overarching themes are extensively supported by the original respondents' statements. Next to the original statements we indicated whether the opinion comes from the groups of hesitant (H), partially hesitant (PH) or non-hesitant (NH) participants. In addition, the study conclusions will be subjected to the triangulation process, given that the focus groups are planned as an explorative phase of the research project that will be followed by a quantitative survey using a representative sample of the general population.

As can be inferred from this section, throughout all study phases, the authors have tried to acknowledge the eight key markers of quality in qualitative

research developed by Tracy (2010): worthy topic, rich rigor, sincerity, credibility, resonance, significant contribution, ethics, and meaningful coherence. The ethical approval of the study was obtained from the Ethics Committee of the Faculty wherein the corresponding author is affiliated (No. 2158-83-07-20-3).

3. Results

3.1 Reasons for vaccine hesitancy

3.1.1 Benefits vs. risks

The analysis of the results revealed that the assessment of the benefits and risks of vaccination frequently appeared as the reason of (non)hesitancy and that it depends on the participant's perception of the effectiveness of vaccines in terms of providing protection, as well as on the perception of risk factors (frequency and severity of infectious diseases). For non-hesitant participants the success of vaccines in reducing the occurrence of infectious diseases by far outweigh possible risks.

> S1. Given that no one I know has contracted the diseases against which he was vaccinated, nor has anyone had side effects and side effects, I am of the opinion that the vaccination calendar and the type of vaccine in the Republic of Croatia are correct. (NH)

> S2. I don't believe my attitude about vaccination would change if some diseases were more or less common or if people vaccinated their children more or less. On the contrary, I believe that it is vaccination that protects and directly reduces the impact and frequency of the diseases. (NH)

Some partially hesitant participants noted they would perceive vaccines as beneficial in cases in which infectious diseases would be frequent enough to be considered as a potential danger.

> S3. I think the frequency of the infectious diseases is quite important. I would be more for vaccinations if cases in my environment were more frequent. (PH)

> S4. The frequency of the infectious diseases would change my attitude and I would reconsider my attitudes towards vaccination. (PH)

Even among non-hesitant participants there were those stating that vaccination would not be necessary if the risk of being infected would be quite low.

> S5. The choice depends on the vaccine type. When it comes to influenza virus, if I saw at the beginning of the season that the virus was not spreading, or that the strain was not well guessed, these factors would surely diminish my interest in the vaccine. (NH)

> S6. Much more important than frequency is the severity of the diseases and the likelihood of severe complications or death. The fact that a disease is common does not mean that vaccination is necessary. (NH)

Perception of vaccine characteristics is another general theme of clustered topics which were mentioned by the participants. The participants mostly discussed and expressed concerns in relation to long-term effects of vaccination and its efficiency, effects of production on vaccine quality, estimation of vaccine amount and the quality of the vaccine schedule. Some participants highlighted concerns about long-term effects and health issues. Some attitudes toward vaccines efficiency are strongly influenced by vaccine experiences and stories from people close to participants, such as friends or family members.

> S7. The factual situation is such that in recent years there has been an increase in the number of chronically and seriously ill vaccinated children. So we don't live in a state of health because all these children are sick despite the vaccination. (H).

> S8. The child of my acquaintance received a cocktail vaccine at the age of two and half and has had autism ever since. I have changed my opinion about the vaccines, I think not all of them have been tested enough and there are consequences. (H)

Additionally, some participants indicated that there are too many mandatory vaccines and that production process is somewhat flawed.

> S9. There are currently too many vaccines which are mandatory. Also, I believe that vaccines can be produced and administered in a healthier and more natural way, with fewer harmful ingredients affecting the general condition of the body. (PH).

3.1.2 Natural immunity

The second often cited reason for hesitancy was a belief in the superiority of natural immunity, i.e. immunity acquired through coping with the disease. The participants who mentioned natural immunity as a better defense against infectious diseases highlighted the importance of contracting infectious diseases in order to achieve better development of natural immunity.

> S10. I think that we have forgotten to listen, as a civilization, to our own body and use its ability to heal itself. The idea that we can in any way have complete control over when and from what we get sick, or influence the course of the disease, is ridiculous to me. (H).

> S11. If we ate like vegetarians, maybe vegans, with food that we produce ourselves or from BIO cultivation, the probability of getting sick would be much lower. A strong immune system is the key to health and resistance to disease and even infection. (H)

The understanding of natural immunity as suppressed by vaccines comes from the view that some diseases are becoming more frequent precisely as a result of vaccination.

> S12. There is an epidemic of autoimmune diseases, allergies, leukemia and autism with an increase in the number of vaccines per child. I believe that immunity has been created for hundreds of thousands of years by injecting bacteria and viruses through the nose and mouth rather than by needle through the skin. (H).

3.1.3 Institutional mistrust

The third often quoted reason was a mistrust in the institutions who are responsible for development and administration of vaccines. Many participants expressed some type of institutional mistrust by espousing beliefs in some ulterior motives hidden behind vaccination. Such beliefs mostly consist of suspicions toward pharmaceutical industry, particularly highlighting profits earned from vaccination and the capitalist economic system as the significant background of the immunisation programmes.

> S13. I stopped vaccinating when in 2009 I experienced an end to the overnight epidemic and an attempt to sell old vaccines. Then it dawned on me that something was wrong and I wondered how could I have ever believed that someone was thinking about my health and was driven by profit at the same time. (H)

S14. People are convinced that those who produce vaccines know everything and are well-meaning. That they are not driven by profit,...,. But they live from diseases. I guess that people trust them blindly. (H)

S15. However, I have a big problem with the pharmaceutical industry and private capital in general within the healthcare sector. I don't believe in conspiracy theories and I know there are a number of public control institutions that evaluate the results of pharmaceutical industry research, …, but I think that market economy works in direct opposition to collective health. (PH).

3.2 Cross-cutting topics

In addition to the three main reasons for vaccine hesitancy expressed by the participants, during the discussion three cross-cutting topics emerged: (1) communication with healthcare workers, (2) media, social media and the Internet, and (3) COVID-19 pandemic. These factors are not the reasons for vaccine hesitancy as such, but may contribute to it by interacting with other reasons. As an example, if the concerns related to the vaccine safety are not effectively addressed by healthcare workers, they might elicit hesitancy.

3.2.1 Communication with healthcare workers

Several participants mentioned their negative experience of communication with healthcare workers, mostly in relation to perception of being ignored when asking questions or just not being satisfied with answers provided by healthcare workers.

S16. I vaccinated my children until the moment when in the school, after one vaccination, several children had visible, severe and undoubtedly vaccine-induced symptoms. The doctor, of course, did not consider these symptoms important and assured us of the absolute safety of the vaccine, which is extremely irresponsible. (H)

S17. The doctor who vaccinated my child did not deny the suspicion that the vaccine was the cause of side-effect, but did not report the suspicion of side effects until the moment I insisted on it. (H)

S18. Primary care paediatricians and school physicians usually vaccinate without taking precautions or despite contraindications and as on the assembly line. (H)

> S19. I don't consider reliable anyone who is exclusive and who doesn't appreciate the existence of the possibility that he's wrong, and that's mostly the case with doctors who recommend mandatory vaccinations. (PH)

> S20. My paediatrician considers me a moron because I care about the child and she thinks that I am a danger to her job and the companies that take her to Bali. (H)

The communication flaws weren't necessary framed within the negative experiences of communication with healthcare workers. Some of the participants suggested possibilities for communication improvement, such as more communication time dedicated to the patients and not communicating on request only.

> S21. Quite adequate communication in my case. However, I believe that paediatricians should have more time to devote to indecisive parents, but given the crowds in waiting rooms and too few paediatricians, I think that more detailed information by doctors is still lacking. (NH)

> S22. My doctor always gives detailed information that I ask for, but only on request, without recommending anything or checking on her own initiative. (NH)

Those who experienced good communication and were satisfied with treatment by healthcare workers highlighted detailed and compassionate answers given by healthcare workers when asking questions and expressing concerns.

> S23. The communication regarding vaccination was always very pleasant and open, I was able to express my doubts and the doctors always informed me objectively and with the best of intentions. (NH)

> S24. The last time when I got vaccinated against the flu the doctor explained to me in detail for 15 minutes! I am very satisfied with that... (NH).

3.2.2 Media, social media and the Internet

According to participants' statements, it seems that the media are perceived as one of the causes of both information and misinformation overload which creates confusion in relation to recognizing true and false information about vaccination, leaving people with the feeling of insecurity regarding the vaccination decision.

> S25. I think that the amount of information and misinformation today is so great that it is difficult for parents to decide for themselves. (NH)

> S26. The media has become very unreliable about this issue and I am less and less trusting in them, which is actually bad. I'm afraid they create revolt in people even around some unquestionable things. (NH)

Notwithstanding that most participants read about vaccines on the Internet, the majority don't perceive the Internet as the relevant source of vaccine information. Even those who seek for information on social media still approach such information with skepticism. For most participants, healthcare workers still remain major and the only relevant source of information. However, it seems possible that vaccine hesitant persons relied more often on the Internet as the source of reliable information, sometimes even declaring that the Internet provides a space where lay persons and experts who disregard the mainstream sources of information can voice their opinions. On the other hand, non-hesitant persons either avoid the Internet and social networking sites as an unreliable source of information, or trust only verified sources of information, i.e. sources connected to the scientific or state institutions.

> S27. I ask for information about vaccinations first from a doctor, possibly on medical internet portals such as Pliva zdravlje, etc. I do not visit any Facebook groups or forums because I do not consider them reliable. (NH)

> S28. I don't visit Facebook groups and forums, but if I'm interested in something, I like to find out information from people who have experienced it. I don't trust too many sources from Facebook groups and forums because there are often paranoid conspiracy theorists out there. (PH)

> S29. Sometimes on the Internet and FB groups you can find persons with the key first-hand experiences, descriptions of the victims and documentaries with authentic speakers. This warn us to inquire, study the side effects and not listen to doctors who are bribed by big companies. (H).

3.2.3 COVID-19

And finally, the possible influence of COVID-19 pandemic also emerged as one of the cross-cutting topics. The results show that in all focus groups the participants expressed suspicion about COVID-19 vaccine, highlighting skepticism about vaccine being produced too hastily, having vaccine announced as the only solution of ending the disease and not knowing possible side effects of the vaccines. Below we list only some of the illustrating statements.

S30. I am not sure if it is really necessary to force people to get vaccinated. E.g. regarding the current COVID-19 disease, my attitude about it has been shaken because it does not seem plausible to me that it was already said in March that a vaccine was the only possible solution. (NH)

S31. I truly believe that this time period will lead to a big drop in confidence in the world of medicine and pharmacy. For the latter, it has been under suspicion for some time anyway. (NH)

S32. I consider COVID-19 vaccination to be a forced and imposed solution, since some other methods of treatment are neglected. I think that the vaccine will be less safe, due to the short time in which it is made, and the ignorance of any long-term impact on the body. (PH).

4. Discussion

The results of thisstudy suggest that there are various reasons of vaccine hesitancy. Generally, even those participants who declared themselves as non-hesitant held some reservations about vaccines, especially in the context of the current pandemic. It can be concluded that three more general cluster of reasons for vaccine hesitancy emerged from the data: risk perception (cost-benefit ratio), lifestyle factors (belief in natural immunity) and institutional distrust, i.e. distrust in medical doctors and healthcare system as a whole. In addition, three cross-cutting factors emerged, not as the reasons for vaccine hesitancy as such, but as the possible moderating influences that can both enhance and diminish hesitancy.

The risk perception figures prominently in the results of this study as a determinant of vaccine hesitancy. This has also been reported by Brewer et al. (2007) in a meta-analysis of studies linking risk perception and vaccination and in Lane's et al. (2017) analysis of the WHO/UNICEF Joint Reporting Form data. Thisstudy shows that risk perception is connected with the perception of effectiveness of the vaccines in terms of providing protection and especially with the perception of the severity of the disease and its effects (S1–S7). Dubé and MacDonald (2017) also draw their conclusions about vaccine hesitancy along the lines of seeing side effects of vaccines as potentially severe, making people hesitant in cases of less severe diseases. It might be that the eradication of some diseases has led to a relatively hesitant attitude regarding vaccines. Sociological analyses have already suggested that different actors evaluate the 'evidence' of hazards differently (Suter, 1993). This might explain why different groups do not agree on risks easily: because of the different knowledge-creation processes that translate hazards into risks. Contemporary societies can be

labelled as "risk societies", wherein the majority of risks are human-produced and not related to natural hazards (Beck, 1992). Modernity is a double-edged phenomenon, as visible material benefits which make human lives more pleasant are accompanied by the shadows of ecological crisis, health hazards, concentrated political power and the development of destructive weapons (Giddens, 1990). As science itself continually produces new risks, its monopoly to truth is heavily contested by the emergence of rival expert and lay opinions. Modernization becomes reflexive, since the very notion of science-based progress is challenged, while the diverging estimates of the newly manufactured risks might give an impression of a "runaway world" (Giddens, 2000). In such societal context where there are no expert systems with completely reliable risk calculations, every individual becomes a reflexive risk taker and a risk "mathematician".

As the second cause of hesitancy, some participants expressed the importance of natural immunity when fighting against infectious diseases, meaning that vaccine immunisation would only harm the process of acquiring natural immunity (S10–S12). Similar beliefs were highlighted by other studies (Evans et al., 2001; Harmsen et al., 2013; Sun et al., 2018). The beliefs that infectious diseases can be controlled with healthy lifestyle choices and by strengthening natural immunity probably have the root in an increasing consumeristic and personalistic culture which emphasises individual responsibility for all choices, health decisions being one of them (Reich, 2016). It can be tentatively said that postmodern health attitudes are expressed as beliefs in natural immunity (frequently connected with lifestyles and personal choices and one's own responsibility for health) and via the importance given to the personalised health. Patients question science in a critical and reflexive way. The attitudes expressed about COVID vaccines can be seen as testifying to this dual critical position, where even the concept of biocultural (Morris, 2000) can be useful as this new disease is constantly produced and reproduced in a different fashion from different perspectives. Kurtz (1994) also states there is a shadow od anti-science scepticism in the postmodern attitudes about health. Anti-science scepticism (Steffens. et al., 2019) is described by the resistance to the mainstream expertise, and by scepticism about scientific evidence, which includes doubts about vaccines. Facts remain indispensable in the communication about vaccination, although it seems advisable not to address audiences with excessive complexity, especially if fake information offers a more simple and convincing account (Brown et al., 2012). The tendency towards individualisation and personalisation together with the demand for one's inclusion into the decisions made about one's health can be interpreted from the comments about mandatory vaccination and the role of the state in it among the vaccine hesitant. This has been confirmed by other authors. For

instance, Furnham and Forey (1994) provide evidence for the relationship between belief in individual responsibility for health and the use of alternative medicine as an indicator of the refusal of the monopoly of the medical mainstream, and Easthope (1993) stresses the rise of individual responsibility for health and healing.

As the third reason, mistrust in healthcare workers and 'big pharma' was frequently quoted (S13–S15). In all four focus groups, medical doctors and other health workers were cited as the main source of information, with the participants in the vaccine hesitant group claiming that in case of doubt about medical statements, they seek information from other sources. Despite the research results which reports health workers as trusted source of information in regard of vaccine decisions (Yaqub et al., 2014), there are those suspicious of the advice given by health workers and therefore searching for information about vaccines within families, friends or media (Evans et al., 2001).

Importance of the communication with healthcare workers is often mentioned by the participants in our study as a cross-cutting topic, by expressing both negative (S16–S20) and positive (S21–S24) communication experiences. As a study conducted by the Strategic Advisory Group of Experts suggests, one of the determinants of vaccine hesitancy is personal experience with the healthcare system (WHO, 2014). Getting more information about vaccination is identified as an essential requirement by Fournet et al. (2018) in their research about undervaccinated groups in Europe. These authors concluded that one of the good strategies for increasing vaccination rates in these groups is a better communication regarding their concerns, but through a trusted source. The importance of the role of healthcare workers in making decisions about vaccination was also recognized by other studies (MacArthur, 2017; Tafuri et al., 2014).

One of the challenges that healthcare professionals meet regarding this problem is a lack of time with a patient (Yaqub et al., 2014) to explain in detail everything patients are interested in regarding vaccination, and resolve any doubts, thus helping them make an informed decision. Only one of the participants in our study recognised the problem, showing some understanding for the physicians' position (S21). This aspect is of particular interest for thisresearch considering specific context of space and time: firstly, the context of the COVID-19 pandemic, and secondly, the context of the Croatian healthcare system. One can expect that during the pandemic, doctors will have even less time than usual to inform patients about vaccination due to work overload. Also, the Croatian healthcare system has been burdened with a number of problems for many years, one of which is the work overload regarding the number of patients per doctor (Ostojić et al., 2012). Additionally, Deml et al. (2020) make an excellent point when highlighting several paradoxes

that ensue from the conflicting definitions of 'good patients' and 'good doctors'. Following the ideas of Deml et al., we can even conclude that the field of vaccination presents us with a case of what we might call 'false autonomy' of the patients. Namely, even though 'good patients' are expected to be active and autonomous, in the case of decisions about vaccination against infectious diseases they are expected to accept scientific reasoning and public good. In such cases, an autonomous decision-maker very soon becomes 'a bad patient'. In other words, there are hard-wired conflicting demands from the patient, who is expected to make autonomous decisions which are actually already made in advance. The problem is becoming even pronounced given the existence of 'multi-layered reflexivity' in the so-called post-truth era, wherein social actors reflexively discuss not only their only health situation, but become 'proto-sociologists' who are able to employ the knowledge from social sciences and effectively frame the vaccination debate itself (Numerato et al., 2019).

The use of the Internet and social media emerged as the second cross-cutting topic. The paths of finding health information has changed as the Internet and social media are becoming very important sources of information (European Centre for Disease Prevention and Control., 2012). As social media importance is growing (Pavić, Šundalić, 2016), exposure to online information about vaccination is becoming more common (European Centre for Disease Prevention and Control, 2020). Our results show that both hesitant and non-hesitant persons read information on the Internet, but they possibly use them differently and draw different personal gratifications (e.g., compare S27 and S29). At least some hesitant persons maybe use social media as the enhancer of their 'maverick' personal identity, while non-hesitant persons reflect critically on the information and the social media information about vaccines might not be as important for their personal identity. As Brewer et al. (2017) have emphasised, social media are likely to magnify the social homophily effects, given the ease with which a person can socialize with the like-minded people. It follows from the results of the current study that homophily effects could be more pronounced among vaccine hesitant persons, with social media providing them with social support and giving them a feeling of not being alone in their non-conforming attitudes. This conclusion is somewhat supported with results obtained by Chadwick et al. (2021) which demonstrate that a combination of social media dependence and high levels of conspiracy mentality is most likely to be associated with vaccine hesitancy. Consequently, future studies of this topic should include measurements of both (1) frequency of media use and (2) various uses and gratifications and their connection to vaccine hesitancy.

As for the COVID-19 vaccines, as our third cross-cutting topic, many participants who generally expressed pro-vaccination attitudes within the focus group discussion, raised serious doubts about its future effectiveness and safety

(e.g., S30 and S31). It is interesting to note that regardless of general vaccine hesitancy level, almost all participants expressed worries about COVID-19 vaccines with regard to vaccine safety. It is not uncommon that new vaccines specifically raise suspicions (Harmsen et al., 2013). Besides the idea of hastiness of COVID-19 vaccines, even non-hesitant participants expressed a level of institutional distrust. A distrust in government and pharmaceutical companies derives from the belief that vaccines are produced to serve special interests, mostly financial ones. Such attitudes are present in other research (Craciun, Baban, 2012; UNICEF, 2013), and the results of the current study also show that some participants espouse suspicion in the dangerous interdependencies between regulatory agencies and pharmaceutical companies (Calnan, Douglass, 2020). The results might be partially explained by the institutional characteristics of the Croatian healthcare system and the normative standards related to them. Immergut and Schneider (2020) showed that public health expenditure as a share of the total health expenditure is positively related to the reluctance to accept the purchase of superior healthcare services as fair. Given that in Croatia the share of public health expenditure is significantly above the EU average (OECD/European Observatory on Health Systems and Policies, 2019), it can be expected that among Croatian population there is a widespread idea that curing diseases should not produce profit for someone, and consequently that vaccine developers and pharmaceutical industry should not make profits from vaccines.

5. Conclusion

Every qualitative study is as successful as the number of new insights that it yields. As for our study, the most important insights are related to the complexity of the vaccine hesitancy phenomenon and the possible moderating influences of the social context on vaccine hesitancy. Overall, there is a very complex picture regarding vaccine hesitancy, since there were not many 'clear-cut' cases in our study. Even the participants who stated that they believe that vaccination is a great public health success which has saved millions of lives expressed some concern over vaccines, in one way or another. Such situation implies that vaccine hesitancy should not be conceptualized as a unidimensional phenomenon that can be measured with a single question.

The results of this study also suggest that it might be beneficial to differentiate between the main reasons of hesitancy and the moderating factors based on social norms or socio-structural factors. For instance, the widespread dissatisfaction of hesitant and partially-hesitant patients with their medical doctors might be the result of the conflicting expectations of what represent

'good' and 'bad' patients and doctors. In this specific case, healthcare consumerism and patient autonomy may be in direct confrontation with the public health demands, thus creating the misunderstandings which will be not easily solved in the future, but certainly call for further research. We also suggested that healthcare system characteristics might shape beliefs about the (non)acceptable connections between health and profit/capitalist economic system. This is also a hypothesis to be tested in the future cross-national research.

This study has both strengths and limitations. The primary strength is the fact that vaccine hesitancy has been studied in the specific context of the COVID pandemic when the issue of vaccination became very salient and thus allowed us to recruit motivated participants who provided us with highly elaborated answers. The use of asynchronous online focus group discussions enabled participants to remain anonymous and to freely express themselves the way they chose to by logging to the platform on multiple occasions when it had suited them. We join the list of researchers who would recommend this method for studying sensitive health topics, especially in the situation of the limitations posed by the pandemic. A significant study limitation might arise from the fact that the replies to other respondents' comments were much less frequent when compared to face-to-face focus groups, which might have resulted in a lower synergy effect comparatively. In addition, as in most qualitative studies, the use non-representative samples should always make us cautious about our conclusions.

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