Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Journal Pre-proof

Anticipating hopes, fears and expectations towards COVID-19 vaccines: A qualitative interview study in seven European countries

Katharina Paul, Bettina Zimmermann, Paolo Corsico, Amelia Fiske, Susi Geiger, Stephanie Johnson, Janneke Kuiper, Elisa Lievevrouw, Luca Marelli, Barbara Prainsack, Wanda Spahl, Ine Van Hoyweghen

PII: S2667-3215(21)00035-4

DOI: https://doi.org/10.1016/j.ssmqr.2021.100035

Reference: SSMQR 100035

To appear in: *SSM – Qualitative Research in Health*

Received Date: 25 June 2021

Revised Date: 23 November 2021

Accepted Date: 31 December 2021

Please cite this article as: Paul K., Zimmermann B., Corsico P., Fiske A., Geiger S., Johnson S., Kuiper J., Lievevrouw E., Marelli L., Prainsack B., Spahl W. & Van Hoyweghen I., Anticipating hopes, fears and expectations towards COVID-19 vaccines: A qualitative interview study in seven European countries, *SSM – Qualitative Research in Health* (2022), doi: https://doi.org/10.1016/j.ssmqr.2021.100035.

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2021 Published by Elsevier Ltd.

Journal Pre-proof

Title page

Title of manuscript

Anticipating hopes, fears and expectations towards COVID-19 vaccines: A qualitative interview study in seven European countries.

Authors

Katharina Paul*[1], Bettina Zimmermann*[2,3], Paolo Corsico[4,5], Amelia Fiske[2], Susi Geiger[7], Stephanie Johnson[6], Janneke Kuiper[8], Elisa Lievevrouw[8], Luca Marelli[9,10], Barbara Prainsack[1], Wanda Spahl[1], Ine Van Hoyweghen[8]

* These authors contributed equally to this paper and share first authorship

Affiliations

1 Centre for the Study of Contemporary Solidarity (CeSCoS), Department of Political Science, University of Vienna, Austria

2 Institute for History and Ethics in Medicine, Technical University Munich, Germany

3 Institute for Biomedical Ethics, University of Basel, Switzerland

4 Centre for Social Ethics and Policy, Department of Law, School of Social Sciences, The University of Manchester, United Kingdom

5 Ethox Centre, Nuffield Department of Population Health, University of Oxford, United Kingdom

Journal Pre-proof

Journal Pre-proof

6 Ethox Centre and Wellcome Centre for Ethics and Humanities, University of Oxford, United Kingdom

7 MISFIRES project, College of Business, University College Dublin, Ireland

8 Life Sciences & Society Lab, Centre for Sociological Research (CeSO), KU Leuven, Belgium

9 Department of Medical Biotechnology and Translational Medicine, University of Milan, Italy

10 Department of Experimental Oncology, European Institute of Oncology IRCCS, Italy

Corresponding author

Bettina Zimmermann

Institute of History and Ethics in Medicine, School of Medicine, Technical University Munich

Ismaninger Str. 22, 81675 Munich, Germany

bettina.zimmermann@tum.de

Phone: +49 89 4140 4041

Declaration of interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

This work is part of the SolPan Research Commons. Study design, interview guides and data preparation was a joint work of the SolPan Research Commons and many more researchers that are part of the SolPan Research Commons have contributed to make this study possible.

Journal Pre-proof

Journal Pre-proof

Anticipating hopes, fears and expectations towards COVID-19 vaccines: A qualitative interview study in seven European countries.

Abstract

Vaccine uptake is essential to managing the ongoing COVID-19 pandemic, and vaccine hesitancy is a persistent concern. At the same time, both decision-makers and the general population have high hopes for COVID-19 vaccination. Drawing from qualitative interview data collected in October 2020 as part of the pan-European SolPan study, this study explores early and anticipatory expectations, hopes and fears regarding COVID-19 vaccination across seven European countries. We find that stances towards COVID-19 vaccines were shaped by personal lived experiences, but participants also aligned personal and communal interests in their considerations. Trust, particularly in expert institutions, was an important prerequisite for vaccine acceptance, but participants also expressed doubts about the rapid vaccine development process. Our findings emphasise the need to move beyond the study of factors driving vaccine hesitancy, and instead to focus on how people personally perceive vaccination in their particular social and political context.

Keywords

SARS-CoV-2; vaccine hesitancy; Europe; pandemic; qualitative research; vaccination policy

Journal Pre-proof

1 Introduction

Effective vaccination programs are crucial to controlling the COVID-19 pandemic. To ensure maximum coverage, access, affordability, awareness, activation and acceptance are key factors (Thomson et al., 2016). Historically, vaccine hesitancy, defined as a "delay in acceptance or refusal of vaccination despite availability of vaccination services" (MacDonald & SAGE Working Group on Vaccine Hesitancy, 2015), has hindered sufficient uptake (Larson et al., 2014). Emerging evidence points to the persistence of hesitancy in the COVID-19 pandemic (Lazarus et al., 2021; Neumann-Böhme et al., 2020). Yet as social science research has made clear, vaccine hesitancy is not a new phenomenon and emerged in parallel to vaccines (Dubé et al., 2013). It takes multiple forms in social movements (Blume, 2006), including digital spaces (Kata, 2012) and has been the subject of a host of research across the humanities and social sciences (Betsch et al., 2012; Blume, 2006; Colgrove, 2006; Engel et al., 2014; Giubilini, 2019; Kitta & Goldberg, 2017; Navin, 2015; Paul, 2016; Reich, 2016). Whereas the World Health Organisation labelled vaccine hesitancy as one of the top ten threats to global health in early 2019 (WHO, 2019) most individuals do not categorically reject vaccines but are hesitant and uncertain (Geelen et al., 2016; Yaqub et al., 2014). Moreover, structural barriers can prevent effective access to vaccination due to a lack of sufficiently convenient vaccination services (Betsch et al., 2018). While both hesitancy and systemic aspects are relevant - if not often intertwined - the present study focuses on the key motives that influence people's anticipatory stances towards COVID-19 vaccination. By qualitatively analyzing interviews with residents from seven European countries held in October 2020, it aims to provide a more nuanced analysis of these stances and points to their situated and contingent character.

Journal Pre-proof

Most studies on COVID-19 vaccination stances have used population surveys and were initiated when vaccine research and development were still ongoing. They have explored well-established correlations between willingness to get the COVID-19 vaccine and (1) sociodemographic variables, (2) risk perception, and (3) political orientation. (1) Regarding sociodemographic variables, age and gender remain strong predictors of vaccine acceptance as the elderly and women are more willing to receive vaccinations (Ansell et al., 2021; Dror et al., 2020; Green et al., 2021). This effect is exacerbated in communities that experience discrimination and marginalisation (Bell et al., 2020; Callaghan et al., 2021; Dror et al., 2020; Khubchandani et al., 2021; Malik et al., 2020). Research indicates that in some countries, those with a higher degree of education are more likely to accept COVID-19 vaccines (Dodd et al., 2021; Huynh & Senger, 2021), though results remain mixed on education as a predictor of vaccine acceptance (Ansell et al., 2021).

(2) In a second strand of scholarship on COVID-19 vaccination, research confirms the role of risk perception in informing vaccination stances (Betsch et al., 2020; WHO Regional Office For Europe, 2020). Both individualistic and prosocial values, social amplification through friends and family, and trust in government, science, and medical professionals were found to be predictors of risk perception and consequently, willingness to get vaccinated (Dryhurst et al., 2020) and so was a higher degree of concern regarding the course of the pandemic and COVID-19 infection (Prati, 2020; Schneider et al., 2021). At the same time, doubts regarding the benefits of COVID-19 vaccines appear to inform vaccine-hesitant attitudes, while confidence in the quality of clinical trials of the vaccine as well as in-state institutions (Latkin et al., 2021) increase the willingness to get vaccinated (Taylor et al., 2020). Finally, pointing to a (3) political dimension of vaccination attitudes, survey research suggests that political preferences and voting

behaviour correlate with vaccination attitudes (Ansell et al., 2021). Yet, as Ward et al. (2020) indicate, critical attitudes towards COVID-19 vaccination can be found across the political spectrum and can thus not be reduced to a traditional Left/Right dichotomy.

Overall, current scholarship on COVID-19 vaccine acceptance is mainly survey-based and focused on willingness to be vaccinated against SARS-CoV-2, rather than the socio-political context and lived experiences that may shape these stances and their underlying values. Emerging qualitative studies on COVID-19 vaccination uptake provide instructive insights: drawing on mixed methods, for instance, (Bell et al., 2020) find that parents' willingness to have their children vaccinated against COVID-19 is shaped by anxieties regarding safety, effectiveness, and concerns over the rapid development of the vaccine. Likewise, Lockyer et al. (2020) find that residents from the United Kingdom experienced distress and confusion having been confronted with a wealth of (mis)information, and that prior health beliefs and lay knowledge influenced their willingness to get vaccinated. Similarly, earlier experiences of vaccination side effects inform stances towards COVID-19 vaccination (Benham et al., 2021).

The present study seeks to contribute to this body of qualitative research. Rather than taking either vaccine hesitancy or acceptance as given categories, we examine the lived experiences of our respondents particularly in the context of the ongoing pandemic, their stances towards COVID-19 vaccination, and the motives influencing these. Specifically, we explore the early and anticipatory expectations, hopes and fears that informed stances towards COVID-19 vaccination across seven European countries. In doing so, we provide a more nuanced analysis of motives behind COVID-19 vaccination stances and identify how these are grounded in lived experiences.

Our study represents views from residents of seven Western European countries (Austria, Belgium, Germany, Ireland, Italy, the German-speaking part of Switzerland, and the United

Kingdom) in October 2020 - at a time when vaccines were emerging but not yet approved.[1] As such, our findings reflect an anticipatory perspective representing stances *before* the approval and distribution of COVID-19 vaccines. The focus on this anticipatory perspective is particularly pertinent as policymakers in the included countries have long attempted to rely mainly (with few exceptions) on individual decisions rather than vaccine mandates in the context of COVID-19.[2] This policy finds expression in the notion that personal decisions for vaccination would allow a 'return to normal life', as European Commission president Ursula von der Leyen put it (Deutsch, 2020). This notion of individual decisions, however, sidelines the situated ways in which people position themselves towards vaccination. As sociological research on vaccine hesitancy has made clear, these include social-cultural, environmental, and institutional factors, individual and group influences —including lived experiences relating to vaccination as well as the influence of peers, and specific issues that are directly related to the characteristics of the vaccine or the vaccination process (Sage Working Group, 2014).

Journal Pre-proof

---

[1] In October 2020, no vaccines had yet been approved by the European Medicines Agency (EMA), even if some European countries (e.g. Hungary, not included in this study), had begun to negotiate contracts with manufacturers of COVID-19 vaccines that had not been approved yet, such as Sputnik V and Sinovac.

[2] Vaccine mandates play a role in childhood immunisation programs in selected countries, including Italy and Germany. In addition, Italy has introduced a compulsory vaccination mandate for all healthcare workers in May 2021. At the time of revising this paper in late November 2021, several countries considered in this analysis are discussing vaccine mandates due to steeply increasing COVID-19 related hospitalisation rates.

How can we best do justice to these established findings and reconceptualise the notion of decision-making in the context of COVID-19 vaccination? The most commonly applied framework for autonomous decision-making suggests that decisions should be made voluntarily, with an understanding of relevant factual information and without undue external influences (Beauchamp & Childress, 2013). However, some have criticised this concept of autonomy as overly individualistic, proposing the alternative framework of 'relational autonomy' (Mackenzie & Stoljar, 2000; Mol et al., 2010). Relational autonomy recognises the importance of social relationships in fostering autonomy and the socio-political influences on people's decisions.[3] This aligns with our view that vaccination stances are informed by personal values, relationships, lived experiences, broader societal values and institutional structures. It allows us to do justice to the situated and dynamic nature of individuals' positioning vis-à-vis vaccination. A relational understanding of autonomy has been specifically promoted for public health and particularly in the context of pandemics (Baylis et al., 2008; Kenny et al., 2010; Wardrope, 2015). Following this line of argument, we understand stances towards vaccination as part of a socially embedded decision-making process for or against vaccination and as likely to change over time as individuals' relational networks and influences may change.

[3] In feminist theory, autonomy is conceived as 'socially embedded', and requires the ability to act effectively on one's own values – referred to as the 'agency requirement' (Mackenzie & Stoljar, 2000). In this paper, we use relational autonomy as a construct to help analyse individual stances towards COVID-19 in a public health context.

2 Materials and methods

This publication is the result of the joint work of the members of the "Solidarity in times of pandemics" (SolPan) research commons. As part of SolPan, a qualitative comparative project comprising nine European countries, in-depth interviews with residents of Austria, Belgium, Germany, Ireland, Italy, German-speaking Switzerland, and the United Kingdom were conducted in October 2020.[4] While the recruitment of research participants and the organization of the studies were country-specific and conducted in the participating countries' official languages, all country teams used the same interview guide (SolPan Consortium, 2021b). We asked participants about their practices and experiences in the COVID-19 pandemic and aimed to capture the reasons behind their actions and attitudes. We explicitly asked how they protected themselves against COVID-19, how they informed themselves, their perceptions of COVID-related policies and regulations, and future expectations. We also asked them about their views on COVID-19 vaccines, including under what conditions and why they would get vaccinated, how they would go about getting it, and who should be prioritised for getting it first. As the role of state and scientific institutions as trustworthy providers of information on vaccination is key in the current pandemic (Harrison & Wu, 2020; Verger & Dubé, 2020), we additionally asked respondents in whom they had invested trust in obtaining information about COVID-19

[4] SolPan already conducted interviews in April 2020 (T1), but as vaccines were not yet broadly discussed at that time, only interviews held in October 2020 (T2) were included for this publication. While the pan-European SolPan study comprises nine countries in total, due to limited capacities, data from France and the Netherlands were not included in the present analysis.

vaccination. Finally, to understand how COVID-19 vaccination may relate to existing views regarding vaccination, we prompted participants to reflect on their previous experiences and intentions regarding other vaccines, too, particularly on seasonal influenza.

National vaccination programs vary across the involved countries concerning institutional mechanisms such as financing and distribution, but also historical track records of vaccine uptake. Interviewers were familiar with these national characteristics and considered them both in data collection and analysis.[5] Institutional ethics committees approved this study [DETAILS REMOVED FOR BLINDED PEER REVIEW].

2.1 Recruitment and data collection

We primarily recruited participants through online advertising on websites and social media networks of the institutions collaborating in the SolPan research commons, asking interested people to contact the respective country teams. Participants were recruited in March and April 2020 for a first interview and contacted again in September 2020 to schedule a second interview held in October 2020, from which we draw for this paper. To cover a broad variety of perspectives, we controlled for demographic variables during the recruitment process and switched to convenience sampling and snowballing at the later stages of recruitment. The demographic characteristics of interview participants are provided in supplementary table 1. Interviews were conducted by phone or video chat in one of the national languages and lasted between 25 and 90 minutes. The interviewer and participant did not know each other personally.

[5] For instance, vaccines are administered in different locations and by different professional groups, e.g. doctors and nurses, across these countries.

All participants received a study information leaflet and were given the opportunity to ask any remaining questions before the interview. Formal consent to participate was obtained orally directly before the interview. Both the consent and the subsequent interview were recorded on a digital recorder or using a video chat recorder compliant with the countries' data protection regulations. Audio but no video material was stored for transcription and transcripts were pseudonymised. Swiss interviews were held in Swiss German dialect and translated to standard German upon transcription. Transcripts were not returned to participants.

2.2 Data analysis

The SolPan research commons inductively developed a coding scheme that was applied to all interviews using Atlas.ti 9.0 (SolPan Consortium, 2021a). A second researcher checked the coding of each interview for consistency. For the specific analysis of data on vaccination, all co-authors exchanged preliminary impressions from their country-specific data and identified preliminary research questions to guide data analysis: (1) How did pre-existing views of vaccines inform stances towards COVID-19 vaccination? (2) What motives, hopes and concerns shaped stances towards COVID-19 vaccination? (3) How did societal and personal considerations interact in forming or influencing people's hopes and fears in COVID-19 vaccines? The lead authors then developed a report template, and each country team wrote a report in English about their findings, including illustrative quotes from their data. They analysed and combined the content of these country reports. Co-authors repeatedly met for meetings to discuss data analysis, their implications and country-specific considerations. Four iterative written feedback loops further refined the analysis. Findings were not sent to participants for feedback due to language constraints and as not to strain our participants' time.

Journal Pre-proof

3 Findings

Analyzing 246 interviews from seven European countries, we found striking commonalities in the stances taken towards COVID-19 vaccines as well as references to the motives explaining these stances. In particular, we found that participants considered personal as well as communal and public health aspects when reflecting on their personal stances toward the vaccination decision. The extent and relative weight of both aspects were highly variable, leaving a nuanced picture of motives that shaped participants' stances towards COVID-19 vaccines. As illustrated in Figure 1, stances on COVID-19 vaccination were shaped by a) pre-existing stances on vaccination in general, b) personal and communal risks and benefits, c) trust in authorities, healthcare professionals, and acquaintances, and d) perceptions of the vaccine development process. In turn, these stances and motives shaped participants' views on vaccine allocation and prioritization as well as vaccine mandates.

[Figure 1 about here]

3.1 Stances towards COVID-19 vaccines relative to pre-existing views on vaccination

Across the countries considered, we find that participants drew on pre-existing ideas around vaccines in expressing their stances. While some felt compelled to express a categorical stance, such as being *generally* in favour of or against vaccination, taking this categorical stance was frequently articulated in relation to others. For instance, those against vaccination often distanced themselves from anti-vaxxer movements. At the same time, our data also revealed more nuanced stances, where participants situated their feelings and considerations not only in their preexisting conceptions of vaccines but in the specific context of the pandemic. First, some participants indicated that they wanted to receive a COVID-19 vaccine when this was available because they

generally trusted vaccines (**stance 1**, Figure 1): "I am looking forward to a vaccine as quickly as possible and I don't mind getting one" (IE_IG03). At the other end of the spectrum, respondents stated that they did not take vaccines in general, hence they were not willing to get a COVID-19 vaccine (**stance 4**): "I mean, I don't get the flu vaccine and if this [COVID-19 vaccine] arrives I won't get it either" (AT_KK08). Others mentioned negative past experiences with other vaccines that made them hesitant or even reluctant to get vaccinated against COVID-19:

> And I just got the email yesterday saying the flu vaccines are coming and then we can register to go get an injection. I've never, I did that once years ago. I got sick from that then and since then I've never gone to get that flu vaccine. So I don't know. And now the COVID vaccine, I'm going to wait and see. I'm not going to stand in the front row to get that vaccine. (BE_JMLK03)

In other stances, participants were less willing to take a COVID-19 vaccine as compared to other vaccines (**stance 3**). Specifically, participants expressing this stance perceived COVID-19 vaccines as "new" and "unknown" compared to other vaccines:

> Rather the fear of the unknown so, like, yeah... Not knowing what [the COVID vaccine] does. For example, a flu vaccine has been around for years. There's more known about it. Now I would really feel like one of those test subjects. (BE_EL05)

By contrast, other participants expressed a higher willingness to take a COVID-19 vaccine as compared to other vaccines (**stance 2**). In particular, participants compared a COVID-19 vaccine to the flu vaccine. These participants expressed a general hesitancy towards or, in some cases, explicit distrust in certain vaccines, but recognised the exceptionality of the current situation as a reason to be vaccinated even if this conflicted with their prior stances towards vaccination more generally. Several rationales were expressed for this decision: (1) to protect themselves faced

with the danger of COVID-19, and (2) to protect others and to help end the pandemic (see also 'Aligning communal and personal interests'). Again, this points to the relational character of positioning vis-à-vis COVID-19 vaccination.

> In this case, yes, because it scares me quite a bit, as it's quite a powerful virus. And then, as I get older, I mean, dying like that would bother me, to be honest [laughs]. (IT_IG05)

> No, is a... unless there would be a death in the first few weeks of giving it, I would have a slightly slower response to having it placed then. But I think it would then also be.... Allez, would be stopped from giving it. But well yes, it's also for the general... I'm not an anti-vaxxer, I'm also not that much in favour of vaccines or anything. It's also again... like your face mask requirement, right. It's ultimately to protect the rest as well. (BE_SV05)

The COVID-19 pandemic notably also affected some participants' stances towards other vaccines. For example, some participants considered taking the seasonal influenza vaccine for the first time in their lives:

> Let's put it this way, I think COVID gave me a different attitude towards preventive vaccinations. Because, for example, it would never have occurred to me to get a flu vaccination, not even to think about it. Because I'm sort of young, sort of healthy, why should I get a flu vaccine? That has changed, because I am thinking, okay, I'm healthy, I can easily get a flu vaccination. A lot of people are simply in a state where they wouldn't be able to take a flu vaccination. That's more the thought, really somehow, yes, protect others who just - for whom it's not possible, and from that point of view my perspective has changed a bit. (AT_MP07)

Journal Pre-proof

Finally, some participants remained undecided towards COVID-19 vaccination (**stance 5**). They preferred to wait and see what would happen once vaccines were actually available, or they just did not feel informed enough to give a qualified opinion: "There is no vaccine available yet, so I will think about it when the time comes." (DE_NH04). This stance illustrates the contingent nature of stances towards COVID-19 vaccination in October 2020.

3.2 Aligning personal and communal interests

Participants expressed a range of hopes and fears related to the expected COVID-19 vaccines. More specifically, these can be grouped into a set of typically intertwined communal and personal considerations that were considered to different extents. First, those in favour of vaccination in general, and COVID-19 vaccination in particular (**stance 1**), often mentioned the hope that vaccines would help end the pandemic and relieve them and society at large from the disease and related restrictions. In part, this can be interpreted as a reflection of the discourse expressed by decision-makers early in the pandemic that vaccines would allow for a return to normal life, as mentioned above. In addition, participants hoped that they and their direct personal environment would be protected from infection. This hope was driven by a high risk awareness and the desire to avoid contracting COVID-19: "I would certainly have a vaccine, if it were available, to protect myself and those close to me" (UK_PG09). Others again expressed a more pragmatic stance and would agree to get vaccinated in the hope of being able to avoid restrictions if they were vaccinated. Speaking to a more relational form of decision-making, participants additionally considered that society as a whole would profit from their vaccination. In this view, taking or not taking the vaccine "is not just a decision that you make for yourself, it's for the people around you and society as a whole" (IE_SV02).

Journal Pre-proof

Second, participants taking **stance 2** (not trusting vaccines in general but willing to take the COVID-19 vaccine, see Figure 1) experienced a tension between personal and communal interests. They expressed doubts about the personal added value of getting vaccinated or stated that they were generally reserved towards getting vaccinated. Still, they would consider a COVID-19 vaccination out of communal interests. “I wouldn’t say that I don’t care about self-protection, but I think I would rather see it as a contribution to a basic herd immunity”, (DE_NH08).

Third, those taking **stances 3, 4 or 5** (uncertain or unwilling to take the COVID-19 vaccine, see Figure 1) either did not see any personal benefit (either individually or for their families) as they were not afraid of contracting COVID-19 or they feared negative side effects of COVID-19 vaccines more so than getting COVID-19. Those considerations were often expressed in relation to, but also in conflict with, communal interests.

> So currently I would rather not [get vaccinated]. Yes, I know that this is also a matter of solidarity, but as I said, I mean, it's still, it's pharmaceutical companies that produce the vaccine [...]. I don't know [...] we are not in a risk group in any way. (AT_WS10)

Personal and communal interests thus appeared inextricably linked - at times, participants tended to align and integrate these interests, but also found themselves in a dilemma. Stances towards COVID-19 vaccination became informed by contingent notions of risk and value, be it personal protection or contributing to community immunity. Beyond this, COVID-19 vaccines were perceived as holding a promise of a ‘return to normal life’ - but notably, this notion can function both as a personal and communal value. Overall, stances towards vaccination were contingent and evolving in a communal fabric.

Journal Pre-proof

3.3 Trust as a prerequisite to get vaccinated

Participants invested trust in a variety of different entities that participants attributed expertise to when it came to COVID-19 vaccines. First, when considering whether to take a COVID-19 vaccine or not, most people stated they would trust their national health authorities. Conversely, several participants emphasised that they would not take the vaccines that had been developed and approved in Russia and China, indicating a general distrust towards these early vaccines that had been fueled by public discourses and political rhetoric.

> Yes, I will be one of the first to get the [COVID-19] vaccine. But only if it is approved in Germany. I wouldn't get a vaccine that comes from Russia […] Somehow I think, if a vaccine is approved in Germany, no matter if it's gone through a much faster approval or not, I somehow trust in our, I don't know, in our legal or in our, yes, German mentality or attitude towards it. (DE_BZ02)

Trust in national authorities, however, was not unequivocally shared. Some respondents were concerned that economic and political pressure might cause premature approval at the cost of safety and effectiveness (see also section 3.4):

> Yes, with COVID-19 I do have this extra concern that there is so much money behind it in order to be the first. [...] Although I have faith in the professionals, I'd rather not be one of the first to get the shot, let's put it that way. I find it a bit frightening. (BE_SV04)

Second, few participants said that they trusted or relied on pharmaceutical companies to develop safe and effective vaccines, as their reputation and profit would severely suffer if this was not the case. Others pointed to the profit-driven nature of vaccine development - an aspect we will return to below.

Journal Pre-proof

> But I think whatever company can do it fastest and manufacture it there will be a huge, probably the greatest, pharmaceutical win of all time in terms of the income that they are going to be able to generate from it, so I don't doubt that the pharmaceutical companies are trying extremely hard for their own benefit to make a vaccine. (IE_SV02)

Third, in developing stances towards COVID19 vaccination, many participants relied on the opinions of their local networks, such as friends and family members, but also their GPs or health care workers more generally. Others relied more heavily on scientific or health experts or specific scientific institutions such as the Paul Ehrlich Institute in Germany or the World Health Organization. Many participants referred to news media as important and trusted information sources (except Italian participants, see section 3.7). Social media were less trusted and were more used to " following the personal things people are putting up" (IE_SV03). Overall, participants most commonly relied on a variety of sources:

> There will be specific people who I've observed who I wasn't particularly aware of before. But there are particular people who've been making comments on TV or radio who are in research in the medical sphere. Some of them I thought, okay, the way you approach the discussion, I like that. There are certain journalists who I will respect. There are my own children who are all pretty rational, I mean, in terms of looking at the wave effect, so I just trust them. Then there are colleagues who I know have a very high regard for quality information and comparing it using a variety of sources, things like that. So, that's the mix. (UK_Ap04)

Some individuals described how difficult it was to form an independent opinion without specialised knowledge, particularly if participants perceived it as difficult to judge who to trust due to the polarised nature of the debate and the variety of information available.

> And what's also a bit difficult in that context is that official bodies from the [National Health Authorities], these are of course rather vaccine-friendly people, I'd say. And in the context of vaccinations, that's really difficult. Who should you trust? If you are a little bit/ well, not an anti-vaxxer, but if you simply have a certain distrust of vaccinations in general, then it is difficult to get neutral information at all. It's really difficult. You would have to be a scientist to be able to read studies like that. And I don't have the time or the inclination, and I'm not versed enough. (CH_P40)

Overall, our findings accentuate the key role of trust when it comes to forming stances towards vaccination and the different sources participants invest trust in - be it scientific or governmental authorities, pharmaceutical companies, intergovernmental institutions, family members or medical professionals. Without trust in sources to which participants attributed expertise, willingness to get vaccinated was rather low. Trust, therefore, seems to be an important prerequisite to getting vaccinated.

3.4 Doubts in vaccine development, adequacy, and efficiency

In the context of the pandemic, vaccine research and development were accelerated in unprecedented ways. Not only was public funding made available almost immediately, but bureaucratic hurdles were handled much more quickly than in other clinical trials, and conditional licensing applications were processed in a prioritised fashion by regulatory authorities. Moreover, clinical trial recruitment was exceptionally successful (Broockman et al., 2021). While this acceleration eventually led to the early availability of several COVID-19 vaccines, many of our participants - including those with positive stances on vaccination more generally - expressed concerns related to the speed of COVID-19 vaccine development as compared to previous vaccines. Even before the first approval of COVID-19 vaccines in Europe,

participants questioned how these processes could have been sped up so much. Consequently, they felt sceptical and distrustful of those profiting economically from fast approval. Reflecting a particular scepticism towards pharmaceutical markets at large, one participant felt that: “It’s like the Cold War, everybody tries to be the fastest in developing something”, (AT_MP01).

Others merely doubted that COVID-19 vaccines would be available as quickly as anticipated, claiming that this was just political rhetoric: “I think it’s a fairy tale when they [politicians] say that a vaccine is coming [any time soon]”, (CH_P44). A couple of participants reflected on the tension between having sufficient data on safety and efficacy and the desire for rapid vaccine development:

> It is a bit of a double-edged sword at the moment, we all want it as soon as possible, but this may play into negative communication about it if it is unsafe. Please, let’s have it tomorrow, but only if it’s safe you know. (IE_IG04)

> Well, it is a risk-benefit trade-off. And if we want the world to return to normal as quickly as possible, we have to take certain risks. And if we think, no, we'd rather let the whole thing run its course and take a little more time, then we also have to accept that it will run its course for a little longer in favour of a safer drug or one that is perhaps more efficient. (CH_P38)

Some participants questioned the notion that vaccination alone would help end the pandemic, stating that instead, societies would need to find ways to live with the virus. However, this did not necessarily affect participants’ willingness to get vaccinated. As potential solutions, participants suggested more testing, research on herd immunity, or more discipline concerning social distancing and other restrictions.

Journal Pre-proof

> I think somehow it's a little dangerous to make a holy grail out of this. And to think that then it's all going to be solved. On the one hand, because I don't really believe it is that simple. And because it would also be like: 'everything will have to stay the way it is until we have that'. But yes, maybe that will take an incredibly long time. Maybe we should also think about, 'What if that doesn't come? What if that doesn't turn out to be good enough?' What are we going to do then?' Then there must be something else as well. (BE_GM10)

Our findings suggest that the accelerated nature of clinical trials and vaccine licensing provoked diverse feelings with participants, ranging from anxieties regarding safety and efficacy to concerns over market competition compromising regulatory safety standards.

3.5 Relating vaccine availability and priority groups

When asked about who should get vaccinated first if vaccines were scarce, the vast majority of participants from all countries mentioned those most at risk.

> There won’t be enough vaccines for everybody [...]. And I will accept that and won’t push for getting the vaccine immediately. Because I already had it [COVID-19] and I don’t belong to any risk group. A friend of mine has a chronic disease; for them, it’s important to get vaccinated. (DE_NH02)

Others emphasised the needs of groups including the elderly, healthcare workers, and professionals whose work necessitates social contacts (i.e., teachers, educators, police officers, or those who work in retail). Participants named two main kinds of arguments (sometimes provided together) with which they offered their priority views: first, compassion arguments, stating that the vulnerable because if they get the virus, they “would be less likely to be able to fight it”

(IE_FOK6) and frontline healthcare workers should be prioritised because they were “in risky positions” (IE_FOK03). Second, pragmatic arguments were that the vulnerable should get the vaccine first “because if you don’t vaccinate the vulnerable, they are going to overload the health system” (IE_SA01), and healthcare personnel and others working at the front line should be prioritised because “keeping healthcare service staff functional in terms of keeping them in work during a pandemic is also key” (IE_FOK02) and to “allow society to function” (UK_GS09).

Importantly, many participants assigned vaccination priority to others but not themselves - but for different reasons. They explicitly or implicitly stated that they did not want to be the first ones to get it but would consider it eventually, hinting towards an underlying worry about their personal safety and potential side effects.

> I totally wish for a vaccine so that we can all get out again and that we're sort of immune to it [the virus], but I confess, I'm really scared. I don't want to be the first [to get it]. I'd rather be in the second or third batch because I want to see how it works and if it's really that harmless and I'm certainly anxious and cautious about that. (AT_KK06)

This stance was articulated in nuanced terms that distinguish between a *generally* favourable view towards vaccines, and more cautious considerations towards *personal* propensity to vaccination (with some respondents claiming to be in favour of vaccinating, but "not right away," to "see how things go a little bit" and see "if it actually works", (IT_2PC03)). Notably even participants who would be prioritised due to age or pre-existing illnesses said that others should come first. Relatedly, some participants refrained from providing prioritization criteria as they felt it was morally wrong: “I don’t know, I can’t say. Since I don’t want to be vaccinated I can’t put another group forward as a guinea pig.” (IE_TB02). Overall, participants once again

positioned themselves in relation to others and considered a range of communal and personal considerations in their views of who should gain priority access to vaccinations.

3.6 Reflections on vaccine mandates

There was an interesting division among participants between those wanting to decide for themselves whether to get vaccinated and others wanting governments to evoke incentives related to travelling or social activities or even some form of vaccine mandate. Most participants opposed mandatory vaccination, stating that vaccination was a decision that everybody had to make for themselves.

> I'm worried that access to certain services or mobility may be linked to this vaccination and that you may be forced to have it. So I definitely don't want it, I don't want to be vaccinated. And then, of course, there is the question of what I should do if I am no longer able to travel? These are things that worry me, I don’t really know yet how they should be solved. (AT_KK04)

Still, others felt overwhelmed by this decision and would welcome obligations as a sign of orientation, or they were concerned that not enough people would get vaccinated if there was no incentive or obligation to do so.

> Mandatory vaccination is still an open question. Particularly if we work with such [vulnerable] people. Or in hospitals. I don’t know what that would imply. […] [It could mean that] it could give some certainty, and then I could imagine that there is a run and that really everybody would get vaccinated. […] I just don’t know enough about it. And that is probably the case for many people. Feeling uncertain. (CH_P33)

Journal Pre-proof

Moreover, some participants reflected on a more implicit social pressure to get vaccinated. One participant, for instance, mentioned that they would get the COVID-19 vaccine to "spare myself stupid questions or statements" (AT_WS08). Another participant stated that they felt they would be made to feel guilty by their doctor if they stated they would not want to get the vaccine or were not sure about it. Overall, however, this notion of social pressure was not very predominant in our data.

3.7 Country-specific findings

The range of stances towards COVID-19 vaccination and underlying motives was remarkably similar across the seven European countries included. Beyond these striking commonalities, however, contextual specifics should not go unnoted: First, in some countries, including the UK and Belgium, critical stances towards COVID-19 vaccination were hardly represented. While this can be explained by the low sample size in some of the participating countries, both countries also feature comparatively high vaccine acceptance rates more generally and possess highly structured national immunization programs. These institutional features may impact COVID-19 vaccine stances and colour them in particular ways, quite in contrast to decentralised systems such as Austria, Switzerland, and Germany, where, generally, vaccine uptake depends on individual initiative. Second, Austrian participants tended to express low trust in their national government, but high trust in health authorities. By contrast, participants from Belgium, Germany, Ireland, and Italy stressed that they trusted their government and health institutions on these accounts. Third, stances towards COVID-19 vaccination among Italian participants were strongly affected by what respondents perceived as a lack of consensus among experts, which were said to engage in "circus ballets" in traditional as well as social media (Marelli et al., 2021).

Journal Pre-proof

Consequently, Italian participants expressed a general distrust of traditional and social media as vaccine information sources.

4 Discussion

The present study sought to explore early and anticipatory expectations, hopes and fears regarding personal stances toward COVID-19 vaccination decisions by qualitatively analyzing interviews with residents from Austria, Belgium, Germany, Ireland, Italy, German-speaking Switzerland, and the United Kingdom. It reveals the varying motives that shape different stances towards COVID-19 vaccines: we found that pre-existing views on vaccination in general, personal and communal considerations, as well as trust in a range of actors, inform and shape stances towards COVID-19 vaccination. Overall, these stances should be understood as part of an ongoing vaccine decision-making process, rather than fixed attitudes. Much like surveys indicate, attitudes towards COVID-19 vaccination can change - for example, once vaccines have become available (European Commission, 2021). But unlike surveys, our qualitative research also indicates the underlying relational fabric that may affect these changes and speaks to the need for a broader sociological analysis of vaccination behaviour in the current context (Calnan & Douglass, 2020).

Our findings indicate a strong relational component in the individual decision-making process concerning COVID-19 vaccine acceptance. Participants sought to align personal, communal and broader societal considerations when reflecting on whether or not they would accept a COVID-19 vaccine in the future. For instance, when considering COVID-19 vaccination, personal risk-benefit assessments were driven by fears over possible side effects or concerns over efficacy, but importantly also involved considerations of the benefit of individual immunization for society at

large or the views others may have. This contradicts traditional bioethical paradigms (Beauchamp & Childress, 2013) which assume that individual patients make autonomous decisions based on their own interests free from the interferences of others, and implies that a more collective mindset influences decision-making. The relational embeddedness that we describe also points to the ways that decision-making needs to be considered in relation to individual and collective positions in society, and understood as both an individual and a collective process. These deliberations were additionally tightly intertwined with considerations of how vaccinations may be distributed across society. Moreover, the important role of trust in scientific and political institutions, as well as social and professional anchor points (such as health care workers or acquaintances), as a prerequisite for vaccine acceptance add another layer to this relationality. Our findings are in line with previous studies that highlighted the importance of trust in health professionals (Peretti-Watel et al., 2019) and state institutions (Craciun & Baban, 2012; Goldenberg, 2019) for vaccine acceptance.

Rather than perceiving COVID-19 vaccination as a trade-off between individual costs and benefits on the one hand and societal benefits on the other, participants embedded their reflections into a broader relational context (Baylis et al., 2008). For instance, when participants acknowledged the positive impact of COVID-19 vaccines to end the pandemic but did not want to be among the first ones to get it for fear of side effects, they were aware of their position in a larger societal fabric, which may place a moral duty on them and which weighed on their decision making. Thus, we argue that the five stances we have traced in our pan-European data can, in fact, not be understood outside of their relation to broader social, political, and personal contexts. Importantly, this also implies a dynamism in these stances, as we highlight below: as

discourses within the general public and specific social contexts change, so are individual stances likely to shift.

Our qualitative analysis is consistent with work in other contexts, which also found that people consider their social environment and social relationships when making healthcare decisions (Zimmermann et al., 2021). Figure 2 illustrates the relational aspects that affected participants' COVID-19 vaccination stances including the social, ever-widening spaces of social reference points around the individual; their own personal views being informed by family, friends and acquaintances, the broader social-political context (e.g. geographical and socio-economic context, such as work, health care setting, or government), and finally, discourses shaped by the media, decision-makers and experts. These findings thus confirm earlier sociological research on vaccination practices more generally (Sage Working Group, 2014). Moreover, participants' stances were shaped by past experiences of vaccination, their present circumstances, and their future hopes and fears, adding a temporal component (Figure 2). Thus, we expect that current stances as illustrated in Figure 1 represent a dynamic process and will be continuously informed and reshaped by these relational and temporal aspects. Longitudinal surveys showing that the willingness to get a COVID-19 vaccine changed within just a few months further demonstrate the dynamic nature of people's positioning towards COVID-19 vaccines (European Commission, 2021) confirms the well-documented connection of personal and communal aspects in decision-making (see Larson et al., 2014 for a more general discussion of determinants of vaccination behaviour; Becchetti et al., 2021; Sprengholz & Betsch, 2020).

[Figure 2 about here]

The study adds value to the scholarly debate on vaccine hesitancy more generally. Because of the immediate danger that COVID-19 poses, and because vaccination is a key element in efforts to

control the pandemic, recent studies regarding COVID-19 vaccine hesitancy across countries have generated renewed concern (Neumann-Böhme et al., 2020). Our findings show that pre-existing stances on vaccination may inform categorical (un)willingness to become vaccinated, but that the motives behind these stances reveal far more than the binary phenomenon that is sometimes assumed in population surveys (Taylor et al., 2020) or in public or policy debates that tend to divide society into pro- and anti-vaxxers (Bradshaw et al., 2021). This binarization of vaccine stances has been criticised in previous studies as well as a constructed social divide (Blume, 2006). Instead, the intricate relationship between individual, communal and societal considerations further challenges predominant notions of vaccine hesitancy: at least in the context of COVID-19, our participants are in part driven by their preconceptions of vaccination, which reflects the polarised nature of vaccination practices more generally (Numerato et al., 2019).

Moreover, the relational influence in people's positioning, as reflected by the alignment of communal and personal interests when considering COVID-19 vaccine uptake, indicates that the increasing availability of COVID-19 vaccines alongside policy instruments such as digital green certificates are likely to impact vaccination stances. This warrants close observation as individuals are likely to realign personal and societal considerations. Policy instruments should thus be devised in a way that does justice to the nuances of the dynamic and contingent nature of stances towards COVID-19 vaccinations.

4.1 Limitations

While our study can help inform vaccination strategies, our methodological design has limitations that merit consideration. By collating data from seven European countries, there is a clear risk of erasing contextual contingency in data, not only with respect to the cultural

embeddedness of vaccination attitudes but also the institutional configurations that shape vaccination uptake in these different countries, with countries such as Austria and Germany featuring more fragmented vaccination programs than other countries where residents are enrolled in vaccination programs based on call/recall systems. We remedied this analytical weakness by engaging in the analysis collectively and with a set of feedback iterations during the writing up of the study. Furthermore, even though we aimed for representativeness by controlling for demographic variables when recruiting study participants, those trusting alternative information sources, religious groups or those who have been particularly hit by the COVID-19 pandemic, e.g. homeless people, refugees, or single parents, were difficult to recruit and are underrepresented in our study population. The results should be interpreted with this in mind. Future research focusing on these populations might be worthwhile. Moreover, as this is a qualitative study, our data cannot reveal any relative or absolute frequencies in terms of how widespread the findings identified are in each country represented. However, the striking similarities between countries indicate that our findings are relevant at least for large parts of Europe. Moreover, findings offer important insights into perceptions of vaccines before their availability across these countries - thus forming a baseline for future research. For instance, the influence of risk perception based on country-specific pandemic development, policies and media coverage on vaccine acceptance might be a relevant topic to follow up.

4.2 Conclusion

This study qualitatively analysed anticipatory stances towards COVID-19 vaccines of residents from seven European countries in October 2020 before any COVID-19 vaccines were approved in Europe. It underlines the importance of the relational embeddedness of individuals in the decision-making process for or against COVID-19 vaccine uptake. Our analysis shows that the

alignment of personal and societal considerations is a fundamentally relational practice in a particular social context. Throughout all seven European countries included in this study, we found that participants' stances and considerations intertwined personal and communal interests. This accentuates the need to move beyond the study of factors driving vaccine hesitancy, and instead to focus on how people personally value and evaluate vaccines in their particular social and political context - for instance, as contributing to herd immunity or as enabling lifting of pandemic restrictions for society at large while respecting people's autonomous decisions in a relational sense.

5 References

Ansell, B., Bauer, M. W., Gingrich, J., & Stilgoe, J. (2021). Coping With Covid: Two-Wave Survey. *Pre-Print on RPubs*. https://rpubs.com/benwansell/729135

Baylis, F., Kenny, N. P., & Sherwin, S. (2008). A Relational Account of Public Health Ethics. *Public Health Ethics*, *1*(3), 196–209. https://doi.org/10.1093/phe/phn025

Beauchamp, T. L., & Childress, J. F. (2013). *Principles of biomedical ethics* (Eighth edition). Oxford University Press.

Becchetti, L., Candio, P., & Salustri, F. (2021). Vaccine uptake and constrained decision making: The case of Covid-19. *Social Science & Medicine*, *289*, 114410. https://doi.org/10.1016/j.socscimed.2021.114410

Bell, S., Clarke, R., Mounier-Jack, S., Walker, J. L., & Paterson, P. (2020). Parents' and guardians' views on the acceptability of a future COVID-19 vaccine: A multi-methods study in England. *Vaccine*, *38*(49), 7789–7798. https://doi.org/10.1016/j.vaccine.2020.10.027

Benham, J. L., Lang, R., Kovacs Burns, K., MacKean, G., Léveillé, T., McCormack, B., Sheikh, H., Fullerton, M. M., Tang, T., Boucher, J.-C., Constantinescu, C., Mourali, M., Oxoby, R. J., Manns, B. J., Hu, J., & Marshall, D. A. (2021). Attitudes, current behaviours and barriers to public health measures that reduce COVID-19 transmission: A qualitative study to inform public health messaging. *PLOS ONE*, *16*(2), e0246941. https://doi.org/10.1371/journal.pone.0246941

Betsch, C., Bach Habersaat, K., Deshevoi, S., Heinemeier, D., Briko, N., Kostenko, N., Kocik, J., Böhm, R., Zettler, I., Wiysonge, C. S., Dubé, È., Gagneur, A., Botelho-Nevers, E., Gagneux-Brunon, A., & Sivelä, J. (2020). Sample study protocol for adapting and translating the 5C scale to assess the psychological antecedents of vaccination. *BMJ Open*, *10*(3), e034869. https://doi.org/10.1136/bmjopen-2019-034869

Betsch, C., Brewer, N. T., Brocard, P., Davies, P., Gaissmaier, W., Haase, N., Leask, J., Renkewitz, F., Renner, B., Reyna, V. F., Rossmann, C., Sachse, K., Schachinger, A., Siegrist, M., & Stryk, M. (2012). Opportunities and challenges of Web 2.0 for vaccination decisions. *Vaccine*, *30*(25), 3727–3733. https://doi.org/10.1016/j.vaccine.2012.02.025

Betsch, C., Schmid, P., Heinemeier, D., Korn, L., Holtmann, C., & Böhm, R. (2018). Beyond confidence: Development of a measure assessing the 5C psychological antecedents of vaccination. *PLOS ONE*, *13*(12), e0208601. https://doi.org/10.1371/journal.pone.0208601

Blume, S. (2006). Anti-vaccination movements and their interpretations. *Social Science & Medicine*, *62*(3), 628–642. https://doi.org/10.1016/j.socscimed.2005.06.020

Journal Pre-proof

Bradshaw, A. S., Shelton, S. S., Wollney, E., Treise, D., & Auguste, K. (2021). Pro-Vaxxers Get Out: Anti-Vaccination Advocates Influence Undecided First-Time, Pregnant, and New Mothers on Facebook. *Health Communication*, *36*(6), 693–702. https://doi.org/10.1080/10410236.2020.1712037

Broockman, D., Kalla, J., Guerrero, A., Budolfson, M., Eyal, N., Jewell, N. P., Magalhaes, M., & Sekhon, J. S. (2021). Broad cross-national public support for accelerated COVID-19 vaccine trial designs. *Vaccine*, *39*(2), 309–316. https://doi.org/10.1016/j.vaccine.2020.11.072

Callaghan, T., Moghtaderi, A., Lueck, J. A., Hotez, P., Strych, U., Dor, A., Fowler, E. F., & Motta, M. (2021). Correlates and disparities of intention to vaccinate against COVID-19. *Social Science & Medicine*, *272*, 113638. https://doi.org/10.1016/j.socscimed.2020.113638

Calnan, M., & Douglass, T. (2020). Hopes, hesitancy and the risky business of vaccine development. *Health, Risk & Society*, *22*(5–6), 291–304. https://doi.org/10.1080/13698575.2020.1846687

Colgrove, J. K. (2006). *State of immunity: The politics of vaccination in twentieth-century America*. University of California Press ; Milbank Memorial Fund.

Craciun, C., & Baban, A. (2012). “Who will take the blame?”: Understanding the reasons why Romanian mothers decline HPV vaccination for their daughters. *Vaccine*, *30*(48), 6789–6793. https://doi.org/10.1016/j.vaccine.2012.09.016

Deutsch, J. (2020, April 12). Von der Leyen: Life won’t return to normal until vaccine. *POLITICO*. https://www.politico.eu/article/ursula-von-der-leyen-vaccine/

Journal Pre-proof

Dodd, R. H., Cvejic, E., Bonner, C., Pickles, K., McCaffery, K. J., Ayre, J., Batcup, C., Copp, T., Cornell, S., Dakin, T., Isautier, J. M. J., & Nickel, B. (2021). Willingness to vaccinate against COVID-19 in Australia. *The Lancet Infectious Diseases*, *21*(3), 318–319. https://doi.org/10.1016/S1473-3099(20)30559-4

Dror, A. A., Eisenbach, N., Taiber, S., Morozov, N. G., Mizrachi, M., Zigron, A., Srouji, S., & Sela, E. (2020). Vaccine hesitancy: The next challenge in the fight against COVID-19. *European Journal of Epidemiology*, *35*(8), 775–779. https://doi.org/10.1007/s10654-020-00671-y

Dryhurst, S., Schneider, C. R., Kerr, J., Freeman, A. L. J., Recchia, G., van der Bles, A. M., Spiegelhalter, D., & van der Linden, S. (2020). Risk perceptions of COVID-19 around the world. *Journal of Risk Research*, *23*(7–8), 994–1006. https://doi.org/10.1080/13669877.2020.1758193

Dubé, E., Laberge, C., Guay, M., Bramadat, P., Roy, R., & Bettinger, J. A. (2013). Vaccine hesitancy: An overview. *Human Vaccines & Immunotherapeutics*, *9*(8), 1763–1773. https://doi.org/10.4161/hv.24657

Engel, N., Hoyweghen, I. van, & Krumeich, A. (Eds.). (2014). *Making global health care innovation work: Standardization and localization* (First edition). Palgrave Macmillan.

European Commission. (2021, May). *Eurobarometer Winter 2020-2021*. Standard Eurobarometer. https://europa.eu/eurobarometer/surveys/detail/2355

Geelen, E., van Vliet, H., de Hoogh, P., & Horstman, K. (2016). Taming the fear of voice: Dilemmas in maintaining a high vaccination rate in the Netherlands. *Social Science & Medicine (1982)*, *153*, 12–19. https://doi.org/10.1016/j.socscimed.2016.01.051

Journal Pre-proof

Giubilini, A. (2019). *The Ethics of Vaccination*. Springer International Publishing. https://doi.org/10.1007/978-3-030-02068-2

Goldenberg, M. J. (2019). Vaccines, values and science. *Canadian Medical Association Journal*, *191*(14), E397–E398. https://doi.org/10.1503/cmaj.181635

Green, M. S., Abdullah, R., Vered, S., & Nitzan, D. (2021). A study of ethnic, gender and educational differences in attitudes toward COVID-19 vaccines in Israel—Implications for vaccination implementation policies. *Israel Journal of Health Policy Research*, *10*(1), 26. https://doi.org/10.1186/s13584-021-00458-w

Harrison, E. A., & Wu, J. W. (2020). Vaccine confidence in the time of COVID-19. *European Journal of Epidemiology*, *35*(4), 325–330. https://doi.org/10.1007/s10654-020-00634-3

Huynh, H. P., & Senger, A. R. (2021). A little shot of humility: Intellectual humility predicts vaccination attitudes and intention to vaccinate against COVID-19. *Journal of Applied Social Psychology*. https://doi.org/10.1111/jasp.12747

Kata, A. (2012). Anti-vaccine activists, Web 2.0, and the postmodern paradigm–an overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine*, *30*(25), 3778–3789. https://doi.org/10.1016/j.vaccine.2011.11.112

Kenny, .Nuala P., Sherwin, S. B., & Baylis, F. E. (2010). Re-visioning Public Health Ethics: A Relational Perspective. *Canadian Journal of Public Health*, *101*(1), 9–11. https://doi.org/10.1007/BF03405552

Khubchandani, J., Sharma, S., Price, J. H., Wiblishauser, M. J., Sharma, M., & Webb, F. J. (2021). COVID-19 Vaccination Hesitancy in the United States: A Rapid National

Journal Pre-proof

Assessment. *Journal of Community Health*, *46*(2), 270–277. https://doi.org/10.1007/s10900-020-00958-x

Kitta, A., & Goldberg, D. S. (2017). The significance of folklore for vaccine policy: Discarding the deficit model. *Critical Public Health*, *27*(4), 506–514. https://doi.org/10.1080/09581596.2016.1235259

Larson, H. J., Jarrett, C., Eckersberger, E., Smith, D. M. D., & Paterson, P. (2014). Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007–2012. *Vaccine*, *32*(19), 2150–2159. https://doi.org/10.1016/j.vaccine.2014.01.081

Latkin, C. A., Dayton, L., Yi, G., Konstantopoulos, A., & Boodram, B. (2021). Trust in a COVID-19 vaccine in the U.S.: A social-ecological perspective. *Social Science and Medicine*, *270*. https://doi.org/10.1016/j.socscimed.2021.113684

Lazarus, J. V., Ratzan, S. C., Palayew, A., Gostin, L. O., Larson, H. J., Rabin, K., Kimball, S., & El-Mohandes, A. (2021). A global survey of potential acceptance of a COVID-19 vaccine. *Nature Medicine*, *27*(2), 225–228. https://doi.org/10.1038/s41591-020-1124-9

Lockyer, B., Islam, S., Rahman, A., Dickerson, J., Pickett, K., Sheldon, T., Wright, J., McEachan, R., & Sheard, L. (2020). Understanding Covid-19 misinformation and vaccine hesitancy in context: Findings from a qualitative study involving citizens in Bradford, UK. *MedRxiv*, 2020.12.22.20248259. https://doi.org/10.1101/2020.12.22.20248259

Journal Pre-proof

MacDonald, N. E., & SAGE Working Group on Vaccine Hesitancy. (2015). Vaccine hesitancy: Definition, scope and determinants. *Vaccine*, *33*(34), 4161–4164. https://doi.org/10.1016/j.vaccine.2015.04.036

Mackenzie, C., & Stoljar, N. (Eds.). (2000). *Relational autonomy: Feminist perspectives on automony, agency, and the social self*. Oxford University Press.

Malik, A. A., McFadden, S. M., Elharake, J., & Omer, S. B. (2020). Determinants of COVID-19 vaccine acceptance in the US. *EClinicalMedicine*, *26*, 100495. https://doi.org/10.1016/j.eclinm.2020.100495

Marelli, L., Lucivero, F., Galasso, I., Corsico, P., Marchetti, A., & Sacchetti, M. E. (2021, March 26). Il vaccino anti-Covid e gli italiani. *Corriere Innovazione*, 26.

Mol, A., Moser, I., & Pols, J. (Eds.). (2010). *Care in practice: On tinkering in clinics, homes and farms* (1. Aufl). Transcript-Verl.

Navin, M. (2015). *Values and Vaccine Refusal*. Routledge. https://doi.org/10.4324/9781315764078

Neumann-Böhme, S., Varghese, N. E., Sabat, I., Barros, P. P., Brouwer, W., van Exel, J., Schreyögg, J., & Stargardt, T. (2020). Once we have it, will we use it? A European survey on willingness to be vaccinated against COVID-19. *The European Journal of Health Economics*, *21*(7), 977–982. https://doi.org/10.1007/s10198-020-01208-6

Numerato, D., Vochocová, L., Štětka, V., & Macková, A. (2019). The vaccination debate in the "post-truth" era: Social media as sites of multi-layered reflexivity. *Sociology of Health & Illness*, *41*(S1), 82–97. https://doi.org/10.1111/1467-9566.12873

Journal Pre-proof

Paul, K. T. (2016). “Saving lives”: Adapting and adopting Human Papilloma Virus (HPV) vaccination in Austria. *Social Science & Medicine*, *153*, 193–200. https://doi.org/10.1016/j.socscimed.2016.02.006

Peretti-Watel, P., Ward, J. K., Vergelys, C., Bocquier, A., Raude, J., & Verger, P. (2019). ‘I Think I Made The Right Decision … I Hope I’m Not Wrong’. Vaccine hesitancy, commitment and trust among parents of young children. *Sociology of Health & Illness*, 1467-9566.12902. https://doi.org/10.1111/1467-9566.12902

Prati, G. (2020). Intention to receive a vaccine against SARS-CoV-2 in Italy and its association with trust, worry and beliefs about the origin of the virus. *Health Education Research*, *35*(6), 505–511. https://doi.org/10.1093/her/cyaa043

Reich, J. A. (2016). *Calling the Shots*. NYU Press; JSTOR. http://www.jstor.org/stable/j.ctt1803zjf

Sage Working Group. (2014). *Report of the SAGE Working Group on vaccine hesitancy* (WHO, Ed.).

Schneider, C. R., Dryhurst, S., Kerr, J., Freeman, A. L. J., Recchia, G., Spiegelhalter, D., & van der Linden, S. (2021). COVID-19 risk perception: A longitudinal analysis of its predictors and associations with health protective behaviours in the United Kingdom. *Journal of Risk Research*, *24*(3–4), 294–313. https://doi.org/10.1080/13669877.2021.1890637

SolPan Consortium. (2021a). *Codebook “Solidarity in Times of a Pandemic”* (SSRN Scholarly Paper ID 3776127). Social Science Research Network. https://papers.ssrn.com/abstract=3776127

Journal Pre-proof

SolPan Consortium. (2021b). *Interview Guide "Solidarity in Times of a Pandemic"* (SSRN Scholarly Paper ID 3824361). Social Science Research Network. https://papers.ssrn.com/abstract=3824361

Sprengholz, P., & Betsch, C. (2020). Herd immunity communication counters detrimental effects of selective vaccination mandates: Experimental evidence. *EClinicalMedicine*, *22*, 100352. https://doi.org/10.1016/j.eclinm.2020.100352

Taylor, S., Landry, C. A., Paluszek, M. M., Groenewoud, R., Rachor, G. S., & Asmundson, G. J. G. (2020). A Proactive Approach for Managing COVID-19: The Importance of Understanding the Motivational Roots of Vaccination Hesitancy for SARS-CoV2. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.575950

Thomson, A., Robinson, K., & Vallée-Tourangeau, G. (2016). The 5As: A practical taxonomy for the determinants of vaccine uptake. *Vaccine*, *34*(8), 1018–1024. https://doi.org/10.1016/j.vaccine.2015.11.065

Verger, P., & Dubé, E. (2020). Restoring confidence in vaccines in the COVID-19 era. *Expert Review of Vaccines*, *19*(11), 991–993. https://doi.org/10.1080/14760584.2020.1825945

Ward, J. K., Alleaume, C., & Peretti-Watel, P. (2020). The French public's attitudes to a future COVID-19 vaccine: The politicization of a public health issue. *Social Science & Medicine (1982)*, *265*, 113414. https://doi.org/10.1016/j.socscimed.2020.113414

Wardrope, A. (2015). Relational Autonomy and the Ethics of Health Promotion. *Public Health Ethics*, *8*(1), 50–62. https://doi.org/10.1093/phe/phu025

WHO. (2019). *Ten threats to global health in 2019*. https://www.who.int/emergencies/ten-threats-to-global-health-in-2019

Journal Pre-proof

WHO Regional Office For Europe. (2020). *COVID-19 Snapshot Monitoring (COSMO Standard): Monitoring knowledge, risk perceptions, preventive behaviours, and public trust in the current coronavirus outbreak - WHO standard protocol*. https://doi.org/10.23668/PSYCHARCHIVES.2782

Yaqub, O., Castle-Clarke, S., Sevdalis, N., & Chataway, J. (2014). Attitudes to vaccination: A critical review. *Social Science & Medicine*, *112*, 1–11. https://doi.org/10.1016/j.socscimed.2014.04.018

Zimmermann, B. M., Koné, I., Shaw, D., & Elger, B. (2021). Autonomy and social influence in predictive genetic testing decision-making: A qualitative interview study. *Bioethics*, *35*(2), 199–206. https://doi.org/10.1111/bioe.12816

Journal Pre-proof

Figures

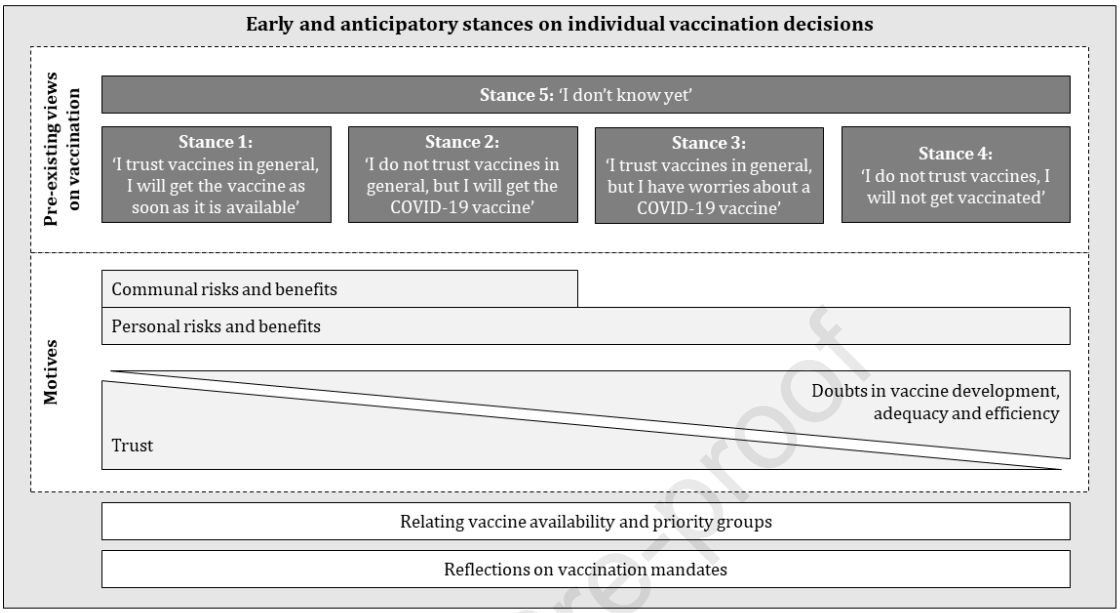

Figure 1: Illustration of early and anticipatory stances towards COVID-19 vaccines and their underlying motives.

Journal Pre-proof

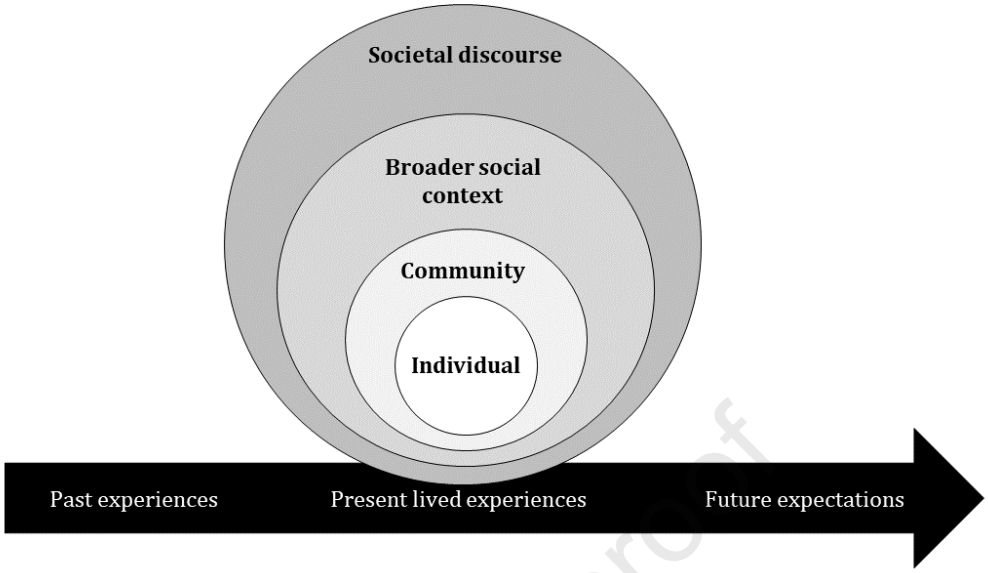

Figure 2: Relational and temporal aspects of stances on individual vaccination decisions.

Journal Pre-proof

Highlights

- Stances towards COVID-19 vaccines are shaped by lived experiences
- Personal and communal interests are aligned in vaccination decision-making
- Trust is an important prerequisite for vaccine acceptance

Journal Pre-proof

Journal Pre-proof

Ethics statement

Funding statement

This work was supported by the KU Leuven BOF SolPan Grant [3H200158], the Global Health Research in the Wake of the Sars-CoV-2 Outbreak Grant from the Federal Ministry of Education and Research in Germany [01KI20510], the European Research Council under the European Union's Horizon 2020 research and innovation programme [771217], the Covid-19 Research Respond Fund, University of Oxford [0009534], the Austrian Science Fund (FWF), Elise Richter grant [V561], the University of Basel research grant [3BE1003], a Wellcome Centre Grant Wellcome [203132/Z/16/Z], a Wellcome Trust Grant [221038/Z/20/Z]. For open access, the author has applied a CC BY public copyright licence to any Author Accepted Manuscript version arising from this submission.

Declaration of interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethics approval statement

Institutional ethics committees approved this study, including the University of Vienna (no 00544), the Technical University of Munich (no 208/20 S), KU Leuven (no G-2020/04/2007), and UCD (low-risk exemption based on full ethics approval at another institution, exemption no. S-E-20-70-Galasso).

Data availability statement

Research data are not shared to protect the privacy of participating individuals. Qualitative interview transcripts cannot guarantee full anonymity even though they were pseudonymised.

Journal Pre-proof

Journal Pre-proof

Declaration of interests

☒ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

☐The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Journal Pre-proof