COVID VACCINES AND ONLINE PERSONAL MESSAGING

THE CHALLENGE OF CHALLENGING EVERYDAY MISINFORMATION

PUBLIC REPORT

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About the Everyday Misinformation Project

Based in the Online Civic Culture Centre and the Centre for Research in Communication and Culture at Loughborough University, the Everyday Misinformation Project is a three-year study funded by the Leverhulme Trust. The project's aim is to develop better-contextualised understanding of why people share and correct misinformation online.

The project has a unique focus on personal messaging, or what are sometimes called private social media or encrypted messaging apps. These services, particularly WhatsApp and Facebook Messenger, are hugely popular in the UK, but their role in the spread of misinformation is not well understood. In part, this is because, due to their nature, these services are difficult to research. Unlike public social media, they do not have public online archives and they feature end-to-end encryption.

Crucially, however, communication on personal messaging is never entirely defined by its privacy. Rather, these services are best understood as *hybrid public-interpersonal communication environments*. They weave constant, often emotionally intimate, connection into the fabric of everyday life and are used mainly to maintain relationships with strong ties, such as family, friends, parents, co-workers, and local communities. Yet often the information shared on these services comes from media and information sources in the public worlds of news, politics, science, and entertainment, before it then cascades across private groups, often losing markers of provenance along the way. Personal messaging involves private, interpersonal, and public communication in a variety of subtle, complex, and constantly shifting ways. Understanding how this shapes the spread and the correction of misinformation requires sensitivity to unique affordances and patterns of use. This is our project.

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Funding for the Everyday Misinformation Project was applied for in May 2019 and received in March 2020. Following a delay due to the Covid pandemic, work began in March 2021. The Principal Investigator is Professor Andrew Chadwick, the Co-Investigator is Professor Cristian Vaccari; Dr Natalie-Anne Hall is the Postdoctoral Research Associate.

The fieldwork has three strands:

- Longitudinal in-depth qualitative interviews with 102 members of the public based in three regions of the UK, recruited to roughly reflect the diversity of British society in terms of age, gender, ethnicity, educational attainment, and a basic indicator of digital literacy.
- Analysis of personal messaging content the participants voluntarily upload to personal online diaries via a mobile smartphone app.
- Multi-wave nationally representative panel surveys, to be designed based on findings from the first two strands of fieldwork.

This is the first of two public-facing reports from the project. It presents interim findings from the first strand of fieldwork.

Visit https://everyday-mis.info for more information.

This Report

Online personal messaging platforms such as WhatsApp and Facebook Messenger have grown rapidly in recent years and are now hugely popular. In the UK, WhatsApp has 31.4 million users aged 18 and over—about 60% of the entire adult population—and is more widely and frequently used than any of the public social media platforms.

Our aim in this report was to uncover the social norms that shape whether and how people do or do not challenge misinformation about Covid vaccines on online personal messaging. It is driven by two key questions:

- Can society develop better understanding of the social norms shaping how people encounter and appraise vaccine misinformation when they use personal messaging?

- Can such understanding be used to inform design principles for new forms of public health communication that take the unique context of personal messaging into account?

We used a detailed qualitative and interpretive method based on in-depth semi-structured interviews (*n*=102) with the public in three regions: London, the East Midlands, and the North East of England. We recruited participants using Opinium Research's national panel of over 40,000 people. Those taking part roughly reflect the diversity of the UK population on age, gender, ethnicity, educational attainment, and a basic indicator of digital literacy.

Summary of Key Findings

- Online personal messaging platforms encourage what we call *hybrid public-interpersonal communication*. We explain how this has distinctive implications for how Covid vaccine misinformation spreads.

- Discussion of vaccines mostly happens in small messaging groups among family, friends, and work colleagues, where people know each other well and tend to trust each other.

- Paradoxically, this can increase the likelihood that misinformation goes unchallenged. This is because, on personal messaging, people have a norm of *conflict avoidance*. Importantly, for some people conflict avoidance is seen as easier to perform on personal messaging than it is during in-person communication.

- When people encounter vaccine misinformation in larger personal messaging groups, for example among school parents or work colleagues, they fear that if they try to correct it they will be seen as undermining group cohesion by provoking conflict and they worry about their command of facts about the safety of Covid vaccines. People perceive these risks to be greater when there is a more "public" or "semi-public" context of a larger messaging group to consider.

- Some people draw boundaries between what they see as the world of public and political communication, where they think there is a norm is that it is legitimate to challenge misinformation, and the interpersonal world of personal messaging, where the norm is that misinformation should go unchallenged because it is not appropriate to call it out.

- Seeing misinformation leads some people to disengage from vaccine talk on personal messaging. This presents a further paradox: they know the content of the misinformation posts but do not speak up, even if they disagree with it. These signals of tacit acceptance in a family, friend or school group can enhance the legitimacy of misinformation and contribute to its further spread.

- Some people try to find routes around the norm of conflict avoidance, for example by sharing criticisms of vaccine misinformation in encounters they perceive to be less risky. Some people *scale* up and down between different groups, both large and small, or use one-to-one messaging to *gauge* others' experiences and opinions.

- But conflict avoidance casts a long shadow. Scaling and gauging may help build solidarity among those positive about vaccination, but these practices also evade opportunities to address misinformation in the contexts where it appears.

- Also, challenging vaccine misinformation overtly can backfire and lead people to exit dialogue. Vaccination talk is then deemed off limits, leaving personal messaging to continue but only on the basis of "safer," less conflictual topics.

- Based on these findings, we outline some broad principles for public health communication to slow the spread of Covid vaccine misinformation on personal messaging:

  - Person-focused, not content-focused, anti-misinformation interventions are more likely to work.

  - Interventions should balance people's desire to maintain healthy relationships with friends, family members, and the other communities to which they belong with the need to foster healthy relationships with public health information.

  - Interventions should encourage people to scale up from the high-trust, one-to-one, and small group interactions to the larger groups, where people could work together to support each other in dialogue-based challenges to misinformation, avoiding the risk of standing out as lone individuals.

  - Interventions should also encourage people to scale down by discussing how to correct misinformation in groups and then taking the lessons learned down to one-to-one exchanges.

  - Interventions should not encourage antagonism, but an empathetic, dialogical orientation toward others.

1. Introduction

The Covid-19 pandemic has generated myriad false rumours and conspiracy theories. This has undermined the pandemic response and deepened longstanding concerns about how online misinformation is degrading public discourse. Covid has been an extraordinary stress test for public institutions. Already buckling under the strains of misinformation, polarization, and declining trust before the pandemic, those leading the Covid response have had to contend with misinformation that erroneously convinces people that the virus is not harmful, misleads people about the merits of various ineffective treatments, and promotes unfounded suspicion of the most important measure against Covid, namely vaccination.

Up to now, the UK's Covid vaccination programme has been a success and has avoided becoming badly derailed by misinformation and vaccine hesitancy. Still, along with that success come significant caveats and some new risks. Doubts remain over the uptake of second doses, boosters, and the future vaccinations required to restore fading immunity and tackle virus mutations. Early studies predicting peak UK vaccine uptake of about 80% have so far proved broadly accurate.[1] By late March 2022, after all public health protections against the Omicron variant were removed, and the latest round of booster vaccinations had begun, 33% of those eligible to be vaccinated were still not fully protected.[2]

As the pandemic enters its third year, the context has also shifted. In the UK, the removal of mass testing, social distancing, and the requirement to self-isolate now means vaccination is the most important tool for combating Covid. Yet more complex public health communication challenges lie ahead. Covid vaccine hesitancy has become a moving target. Gaps in levels of protection—unvaccinated, first dose, second dose, third primary dose, booster, top-up booster—are now multiplying and widening. Reducing these gaps by boosting vaccine uptake to make sure no-one is left behind is likely to be an endemic challenge for public health, health inequalities, and the management of health resources for many years.

2. Media, (Mis)information, and Covid Vaccine Hesitancy

Covid vaccine hesitancy is complex and multifaceted,[3] but in the UK, people's media and information diets are important shapers of it.[4] Building pandemic resilience for the long term will depend on where and how information about vaccine safety and efficacy is communicated. Clearly, engagement by public health professionals with people in the diverse settings that matter for health decisions will play a central role. Crucially though, how *ordinary people* themselves communicate about Covid vaccines will also be key. Everyday discourse in horizontal interpersonal networks of family, friends, neighbours, and workmates matter greatly for vaccine confidence. It is no surprise then, that the UK Scientific Advisory Group for Emergencies (SAGE) has urged that vaccine hesitancy be addressed in the context of "the whole communication journey" of how people make vaccination decisions.[5]

> *Crucially, how ordinary people themselves communicate about Covid vaccines will also be key to tackling misinformation.*

When viewed holistically, communication about vaccines depends on a complex system of formal, semi-formal, and informal flows of information. These occur across and between clinical settings, community settings, professional news media reports, and social media. Formal public health and science communication layers into and interacts with popular understanding, everyday social endorsement, and social norms governing how people communicate about health and illness. Confidence in vaccines depends on people's everyday social interactions, as individuals and groups try to make sense of scientific and medical advice that often comes interspersed with false and misleading information. Diverse forms of media play a role,

alongside community and family structures, in shaping whether people perceive that getting vaccinated is worthwhile, safe, and the right thing to do.

2.1 Interpersonal Influence

A long tradition of communication research reveals the impact of interpersonal influence on a wide range of public attitudes and behaviours.[6] There are good reasons to update and transpose this approach to make it relevant for understanding Covid vaccine misinformation. More broadly, there is a role for public health communication that recognises the importance of diverse communication contexts and which is not wholly tied to formal government and NHS activity but relies on peer endorsement and dialogue-based interventions. These should focus on what those who support vaccination say to those who are unsure or ambivalent.[7]

Key to these initiatives, however, is knowledge of how people communicate about vaccines and deal with vaccine misinformation in everyday settings. Today in the UK much of this everyday communication occurs online, and particularly on personal messaging platforms such as WhatsApp and Facebook Messenger.

Personal messaging is hugely popular and has grown rapidly in recent years. Globally, WhatsApp has more than two billion users.[8] In the UK, WhatsApp has 31.4 million adult users—about 60% of the entire UK adult population—and is more widely and frequently used than any of the public social media platforms.[9]

In some of our previous research, as part of our participation in another study (the Oxford Coronavirus Explanations, Attitudes, and Narratives project) we analysed data from a national survey and found that people with high levels of social media use and low levels of professional media use are less likely to get vaccinated against Covid. Equally important is that people in these groups are also more likely to go online to discourage others from getting vaccinated.[10] We found evidence that people use personal messaging in these acts of discouragement.[11]

However, we also found that vaccine *encouragement* via personal messaging is much more common in the UK, reflecting the majority support for Covid vaccination across British society.[12] This positive finding suggests that online personal messaging could be one focus of a broader online communication programme to reduce the spread of Covid vaccine misinformation and promote the benefits of vaccination for individuals and society.

3. The Hidden World of Online Personal Messaging

At present, however, researchers and health communicators have limited understanding of the forms that vaccine encouragement and discouragement take on personal messaging platforms, and how these are shaped by how people deal with vaccine misinformation. In general, there is very little research addressing how social norms on personal messaging shape whether and how misinformation spreads.[13] Ironically, despite personal messaging being widely blamed for the spread of misinformation, it has been neglected in social science research. The lack of attention is puzzling because, in the UK and many other countries, reports of conspiracy theories, false panics, and ill-judged medical advice circulating on WhatsApp have been a regular feature of the daily news for several years, and particularly since the pandemic began in early 2020.[14]

However, WhatsApp's lack of public archives and its end-to-end encryption means researchers, journalists, regulators, or even the companies themselves, cannot comprehensively identify, measure, and quantify the impact of the misinformation circulating on personal messaging.[15]

This encryption also means that automated interventions to tackle misinformation on public social media—for instance, schemes to algorithmically downrank anti-vaccination posts and

accounts—simply have no relevance on WhatsApp and Messenger.[16] This arguably also contributes to researchers' neglect because personal messaging is a medium for which there are no quick technological "fixes" for the spread of misinformation.

3.1 A Role for Qualitative and Interpretive Research

In a time of convenient access to mass online survey platforms, it is sometimes forgotten that qualitative methods have long been essential for researching vaccine hesitancy.[17] It is important to engage with people and invite them to talk about their experiences when discussing vaccines and dealing with vaccine misinformation. By asking people to explain how social approval and disapproval are handled in everyday social interactions we can identify how people deal with misinformation.[18] The method we use here—the in-depth semi-structured interview—is a key tool of qualitative research. It is useful for allowing people to talk about their own experiences as well as how they make sense of the experiences of others in their social networks. And, given personal messaging's lack of public archives, this method is not only useful; it is essential.

4. Covid Vaccine Misinformation: Why Online Personal Messaging Matters

Beyond personal messaging's popularity in the UK, why else does it matter for Covid vaccine confidence? A major reason is that personal messaging is important for generating and diffusing social norms. Arguably, when it comes to Covid vaccines, the most important social norms are those affecting whether people try to challenge misinformation and slow its spread or avoid challenging misinformation and let it flow.

4.1 The Power of Social Norms

Social scientists have long been curious about how social norms emerge. A big part of what makes norms so intriguing is that they spring from our routine social interactions and behaviour, yet they also shape our routine social interactions and behaviour. We collectively create norms, but we also adapt to fit in with them. Norms enable and norms constrain.

Today's media systems are historically unique in offering so many opportunities for people to signal social norms to others.[19] This happens on a vast scale every day, through countless digitally mediated interactions. Many people use personal messaging frequently. It provides ongoing connection to others, unconstrained by the need for physical presence. It sustains the habitual interactions that generate and then reinforce social norms.

The way we respond to information and misinformation shared on personal messaging is also important for signalling the importance of norms to others in our networks. Signalling a norm is an individual act, but the act derives from collective experience and has collective consequences. Norms are what social scientists refer to as *relational*: they do not inhere in individuals but are instead generated from mutual interactions between individuals and groups.[20]

Social scientists have demonstrated that people are more likely to adopt a course of behaviour when they can see that there is a consensus among others. Our thinking about how to behave is shaped, in part, by our perception that others in our social networks think a certain way or that others acting as a group have better information than lone individuals.[21] In the absence of information that contradicts what we can observe, these norm-based behaviours can quickly diffuse across social networks, as more and more people perceive that joining a

consensus by adhering to a norm is less cumbersome, more personally beneficial, or more likely to help them fit in or enhance their social status.[22]

Norms can impact vaccination intentions. For example, a pre-pandemic study showed that parents who believe that other parents in their social networks are unlikely to have their children immunised against routine diseases (such as measles, polio, tetanus, and others) are themselves more likely to delay or skip vaccinations for their children.[23] On personal messaging, the norm that it is not appropriate—"not the done thing"—to challenge vaccine myths and conspiracy theories means that such misinformation will flow more easily and reach greater numbers of people.

> *On personal messaging, a norm that it is "not the done thing" to challenge vaccine myths and conspiracy theories means that misinformation will flow more easily and reach greater numbers of people.*

4.2 Online Personal Messaging as Public-Interpersonal Communication

Norms on personal messaging platforms are shaped by what we call *hybrid public-interpersonal communication*.

Personal messaging weaves emotionally intimate connection into the fabric of everyday life and is used mainly among strong-tie networks of family, friends, parents, co-workers, and local community members. Yet often the information shared originates in the more remote and more obviously public worlds of news, politics, science, and entertainment.[24] However, very little is known about how such information then cascades across one-to-one and group settings, sometimes losing markers of provenance, such as crucial information about its source, purpose, and timing, along the way.

On personal messaging, people share information from a wide range of public sources: established news organizations, government and NHS websites, political leaders, celebrities, and other people's posts on public social media platforms. People use links to these public sources to bolster their own interpersonal encouragement, reassurances, and warnings about Covid vaccines. Personal messages can also be forwarded to different, more public or semi-public contexts. For instance, a message with a link to a public source might be re-posted into a different personal messaging group discussion.

Some people share their thoughts on personal messaging without using links to public sources. Instead, they rely only on their own personal experiences and the emotional bonds of kinship and friendship as bases for what they feel able to say. Yet those thoughts expressed in interpersonal settings might then also be relayed to more public or semi-public settings when they are shared into larger messaging groups, for instance those focused on neighbourhood news or school matters, that may comprise dozens or potentially hundreds of people.

In other words, what makes personal messaging unique as a medium is not its privacy or its intimacy, though both of those forces are important. Instead, it is that personal messaging

> *Vaccine misinformation can originate in news reports or public social media, but then burrow into interpersonal communication networks, where different norms apply.*

involves rapid and subtle shifts between private, interpersonal, and public communication. And this is also what makes it unique in how it shapes whether misinformation is amplified or attenuated. Vaccine misinformation can originate in obviously public domains, such as news or public social media, but then burrow into interpersonal communication networks where different norms apply. Or it can originate in rumours, gossip, and misunderstandings in one-to-one or small-group personal messaging interactions before it then spreads across wider messaging groups where, again, different norms apply and grant the misinformation a public or semi-public character that requires people to have different skills and capacities to challenge it.

4.3 Interpersonal Trust and Conflict Avoidance

These public-interpersonal dynamics also affect how trust matters for how people handle misinformation on personal messaging.

We found that much discussion of vaccines on personal messaging happens in small groups of people who know each other well. So, these communication networks are often animated by high levels of interpersonal trust. If people know each other well, they do not need to rely on the broader social trust that is required to make communication effective among strangers who need to coordinate to achieve specific goals.[25]

The problem here is that, paradoxically, communication in the context of high levels of interpersonal trust may also increase the likelihood that misinformation goes unchallenged. Falsehoods may be met with silence or simply accepted and then spread further across other personal messaging networks.

Why? One reason is that people are more likely to implicitly trust the information shared by their close ties. A second reason, which may apply more strongly in some cultural contexts than others, is that people are deferential toward family members, especially the elderly.[26] A more general reason is that most people want to avoid getting into conflict with their close ties, especially over public and political issues.[27] Understandably, most people try to avoid constant arguments with friends, family members, or work colleagues. Indeed, most people define friendship as a relationship without permanent conflict. Family ties—because they are mostly not based on a conscious choice—are famously more complicated than friendship. But because families tend to have high levels of interpersonal trust, are important sources of social support, and involve an expectation that the relationships will continue long into the future, interactions among family members are also likely to foster a norm of conflict avoidance.[28]

> *Paradoxically, communication in the context of high levels of interpersonal trust may increase the likelihood that misinformation goes unchallenged. Most people want to avoid getting into conflict with their close ties, especially over public and political issues.*

Again, however, part of what makes personal messaging so complex is that it differs from the many public online spaces in which people congregate to discuss specific interests or promote specific values or identities. On personal messaging, people talk about a wide variety of topics and often switch rapidly between sharing or encountering personal information, public information, and the many shades between. This can make conflict avoidance more important, especially for dealing with discussion of public or political values.

> *Personal messaging can set up potential conflicts between the worlds of the personal, the interpersonal, even the private, and the world of broader collective public values and public, even political, discussion.*

Finally, vaccination has affinities with this complex communication context. In the UK, the decision to get vaccinated against Covid is ultimately personal, individual, and, for some people, a private matter. But this choice often also involves the recognition of more public, collective, and political values, such as the need to protect others from the spread of disease or to do one's bit to return society to something near normality. So, when talk on personal messaging turns to Covid vaccines, this can set up potential conflicts between the worlds of the personal, the interpersonal, and the private, and the world of broader collective public values and public, even political, discussion.

5. "That was just met with radio silence": The Norm of Conflict Avoidance

Julia (Participant #90, not a real name) is in her forties and lives in south London. She belongs to several WhatsApp groups, mostly with family, friends, and the parents of her children's classmates at the local school. She also spends time messaging with a good friend who follows what Julia describes as "medical trends." By this Julia means scientifically unsupported nutrition advice, for example the fruit juices that her friend says prevent serious diseases, including cancer. Julia does not hold these views on nutrition but over the years she has become used to avoiding confrontation when her friend posts them on WhatsApp. Importantly, Julia says her friend's posts are not damaging to their personal friendship.

All illustrative material used here has been anonymised through replacement or removal of identifying details. Names used are pseudonyms assigned by the researchers. Further details of our data and method can be found in the Appendix.

While preparing for her child's birthday party, Julia set up a new WhatsApp group to help coordinate the gathering. She added her friend to the group, alongside family members and other parents. The following day, she picked up her phone, checked the birthday group, and noticed that her friend had posted misinformation into it, strongly discouraging Julia's friends and family from getting vaccinated. As Julia explained:

> So I put her in the group of the birthday party and she started to share the things about 'do not get vaccinated' and, you know, those threads. Okay, I mean, I respect it, but, for example, that was not the right place and time to do that, but still, I mean we're all different and we all have our strengths and weaknesses, and the others did not appreciate it, I did not appreciate it, but still, everyone just let her talk and say that because she's nice in other ways. So yeah, it's a matter of our co-existing I guess.

When, in the interview, Julia was asked if others in the WhatsApp group replied to her friend's posts, she laughed slightly nervously and explained what happened next:

> No, we all ignored that. She's a, she simply, I mean we simply know her, we know how good she is, but we know that she's also very bad with this, so we just ignored that, and we just kept on talking about what time the birthday party was and what we could [do], if, 'shall we bring some wine?', that's it.

5.1. Letting it Fade and Cool, Before Wriggling Out

Julia went on to explain that she wants to avoid arguments on WhatsApp with her friends because there is "something more important at the base" of their relationships and she thinks it is pointless trying to change her friend's mind. She said she finds it easier to deal with anti-vaccine misinformation in personal messaging interactions than face-to-face. The affordance of low-stakes, constant connection personal messaging provides also makes it easier to avoid conflict, let conversation "fade" and cool, and move onto safer topics without addressing the problem overtly:

> I do prefer [vaccine misinformation] on WhatsApp because on WhatsApp you can ignore the message and just respond later when there's less, you know, just less indication of, I don't know, less. It becomes a lot easier after a while. You ignore it for a while and then

> you respond later or just don't respond and respond with "Oh, by the way" and something else. Of course, you cannot do that in person, but of course, at that point, the interest in the topic becomes a lot less hot. So it's easier. [It] sort of fades away after a while, so you can find your way out and you can wriggle out of this situation much easier.

In Julia's account, linked to her conflict avoidance is being more open in her opinions about vaccines with those she considers to be very close personal ties. But this is also dependent on like-mindedness. Julia contrasts her interactions with her friend with those with close family members:

> I'm not going to share news about my position on the vaccine with, erm, with this friend that I was talking about, the one who likes potions and stuff. But if it's my mum, erm, of course I'm going to share information about vaccines because I know she shares my views.

Here, a norm of conflict avoidance can lead to vaccine misinformation going unchallenged in a group context. Yet, in addition, the absence of a challenge to misinformation is further reinforced by the expectation of only communicating about the topic in a different messaging context, and only with those with whom one already agrees.

5.2 The Constraints of the Public-Interpersonal

Bella (#56) is in her early thirties and lives in the East Midlands. She has young children in the local primary school and she belongs to a schoolparents' WhatsApp group. Recalling the time one of the members posted something she says was "really anti-vaccine" into the group, Bella explained that she and the other group members decided not to challenge it. Instead, she said, "That was just met with radio silence. [...] there was just silence, just no-one said anything, and then the topic was changed."

Bella described her own actions and the actions of the other group members as "cowardly" but explained that "there are, like, 30 other mums in there and I didn't want to be the mum that was like, 'Uh, don't think that's quite right' […] [and] call it out in front of 30 other school parents."

Bella lacks confidence to speak out in the presence of others in the WhatsApp parents' group because she fears she will be judged harshly for provoking conflict among the members. In addition, she is unsure she has the right information required to effectively challenge misleading anti-vaccination post by other parents, especially when the stakes are high and there is the public or semi-public context of the group to consider.

Bella's story reveals how the public-interpersonal nature of communication on personal messaging can impose constraints on people's ability to challenge misinformation. In Bella's case, it is not a matter of whether she would offend close friends or family on WhatsApp, but actually the reverse: in comparison with public social media networks, a WhatsApp group of 30 is not large. Yet it is large and diverse enough to mean that Bella does not personally know the views of many of the group's members. She perceives this as a reason not to speak out. Even though the rest of the interview revealed that Bella was clearly enthusiastic about getting vaccinated, she perceives the parents' WhatsApp group as a *public* context in which she has not mastered enough knowledge and evidence to make the shift from casual interpersonal chat to a debate about the merits of vaccination in the face of disagreement.

5.3 Trust and Curating-out Conflict

In a further theme related to conflict avoidance, participants drew contrasts between how they behave on personal messaging and how they behave on public social media platforms. Some

said they tend to encounter greater conflict about vaccines on Facebook. A common explanation was that the weaker ties to Facebook "friends" mean that less interpersonal trust operates, and this, in turn, makes it more likely they will get into conflict with people who post. Even though Facebook's news feed algorithm may present posts from close and regular contacts more prominently, some participants still saw Facebook as a less personalised environment than the one they could curate on personal messaging.

However, operating this distinction based on levels of trust also reinforces norms of conflict avoidance on personal messaging. Some participants explained that, similar to Julia's case discussed above, they deliberately restrict their messaging communication to those who they know hold similar attitudes to the vaccines. Personal messaging can be curated more effectively than public social media. People can pre-structure it so that it "naturally" leads to less conflict. For example, James (#88), 38 and from the North East, described how he developed a distinction between Facebook and Facebook Messenger. "On wider Facebook I've seen quite a bit of [vaccine misinformation], but not so much on Messenger. Again, I think that's where, if you're gunna message it to someone direct, you'd probably suspect that they agree with your viewpoint before you started."

5.4 Drawing Boundaries Between the Public and the Interpersonal

In an elaboration on this approach, Richard [#95], in his fifties and from London, said that when he encounters anti-vaxxer colleagues at work his approach is "keep your mouth shut." He continued: "if someone goes 'Oh I'm not gunna have it, blah blah' you just go […]" then he made the "zipped lips" gesture to clarify what he meant.

However, Richard went on to explain that he distinguishes between exposure to false information in the public world—what he refers to as "political" and media "hype"—and personal messaging interactions between his friends and work colleagues. He believes that on personal messaging he will not be able to effectively counteract the impact of his friends' exposure to vaccine misinformation from public sources, and, even if he could, it would not be appropriate or worthwhile to do so:

> All this hype which Donald Trump has put out there, you know, that's the only way I can really say it is. Yeah, they're not, they're not looking at the facts and everything else, it's just gone through all these people. People have gone on the media and gone 'oh it's gunna kill ya, there's little microchips in it', it's like 'oh God.' Nah. It's just, I don't wanna get into that. I've just said, 'just get me a beer'—bit easier.

Here, Richard makes clear that a reason to avoid conflict over vaccine misinformation on personal messaging is that he does not see a legitimate role for overcoming what he sees as more powerful, public influences shaping how some of his friends and workmates have arrived at the decision not to get vaccinated.

This variant of conflict avoidance has important implications for the spread of vaccine misinformation because it leads to a drawing of boundaries between a supposed formally public, political sphere, where misinformation is perceived as spreading and where the norm is that it is legitimate to challenge it, and the interpersonal world of personal messaging, where misinformation should go unchallenged. This is based on the presumption that misinformation is "out there," created and spread by elites (Trump, in this case) and organised actors, and not an accepted part of the interpersonal world for which Richard thinks personal messaging ought to be reserved. For Richard, this applies even if his friends on personal messaging post misinformation that is obviously circulating in public channels more generally, such as on public social media or in mainstream news coverage. This boundary drawing also relies on a weary resignation that personal messaging is not likely to make much difference when compared with stronger influences on people's attitudes—politicians and "people" who have "gone on the

media"—but it involves stepping back from engaging with even his closest friends and colleagues on the topic of vaccines.

5.5 Coping Under Pressure

The power of the norm of conflict avoidance on personal messaging was revealed most vividly by participants who were clearly experiencing extreme interpersonal pressure. For example, Branwen (#26), who is in her twenties and works for a clothing store in the East Midlands, spoke of her aunt and uncle's messaging in terms that were among the most forthright we encountered:

> They're anti-vaxxers. They don't believe in Covid, they think it's a conspiracy. […] I think that makes me more pro-vaccine because they're just absolutely mental, they are absolutely nuts, like, they would think nothing of standing by you and coughing. And [they] are very, like, they don't care about anyone else, they only care about [whether] their freedom has been, you know, whatever, it's being restricted, they don't care that other people are getting ill or […].

Yet when Branwen was asked if she or other family members tried to challenge these messages, she quickly replied, with a slightly embarrassed chuckle: "no, no, I don't, I can't be bothered […] I just feel like, what's the point?"

Similarly, Jenny [#42], a retiree living in north London, told us she uses WhatsApp "loads, loads, constantly." She particularly enjoys the photos of her grandchildren posted in a WhatsApp group for her extended family. Yet her nephews and nieces often post into the same family group their warnings, based on unfounded conspiracy theories, about links between 5G mobile phone technology and Covid. Jenny explained how these WhatsApp messages contain links to posts on what she calls "the social media"—clearly, and ruefully, signalling that content from public platforms is a form of unwanted contamination in her family group:

> My nephew, niece and a couple of other people, they get carried away with the social media. So, for instance, they'll keep putting things on the group about oh, you know, the 5G thing: 'Oh no, don't get the 5G phone because, look, it's really bad' and, you know, 'it's gunna give you cancer, it's gunna do this, it's gunna do that', and, you know, they seem to read all this stuff and are really taken in by it.

Jenny then explained how she tends to deal with these difficult situations. Her explanation reveals that her way of coping is as much to protect herself as it is to avoid provoking conflict in her family WhatsApp group:

> I think you can get carried away in the moment when you read some of the stuff, so, yeah, I just tend to sort of let it go over until I hear it going out live on the TV on the actual news or something like that. […] They [nieces and nephews] keep sending links—'you've got to read this, you've got to read that'—and you start reading it and you think, well, 'are they right or are they not? And then I just think 'no.' D'you know what, it is really hard. […] They go on and on about it on the group and they'll send us, they send us links and then they keep saying 'you read it yet? Have you read it yet? You've really got to read it, you've really got to read it.' To be honest, I've got to the stage now where I don't because I just think 'oh.' I've stopped reading a lot of it.

5.6 The Paradoxes of Letting Misinformation "Go Over"

Here, Jenny's goal of avoiding conflict with some members of her family expands into a

broader approach of avoiding the misinformation itself, by letting it "go over" as Jenny terms it, by which she means the posts disappear through scrolling down in WhatsApp on her phone. Yet this is based in Jenny's recognition that, because she is already aware of the vaccine misinformation contained in her nephews' and nieces' posts, she can avoid engaging with it. The paradox here is that, to be able to avoid reading these posts, Jenny needs to know in advance that the posts' content is repetitive. As she said of her relatives: "they go on and on." The scenario is conducive to the spread of misinformation. The posts continue to be made into the family group, Jenny sees them, knows what they say, but does not speak up against them. So, the 5G conspiracy theory receives no obvious challenge. This, in turn, makes it more likely that other members of the group will feel less constrained if they want to share these posts in other groups to which they belong, or less compelled to challenge them if they see them elsewhere. Tacit acceptance in the family group contributes to the misinformation's legitimacy.

Jenny's experience was echoed by Ryan [#68], from Nottingham and in his early sixties, whose work colleague, during a Zoom call, sent him a link to what Ryan described as "one of these web pages stating how insidious the whole vaccination programme is." Ryan's response was to avoid reading it: "I'll have to be truthful, I didn't read it at all, I just read the first few lines, and then it went in the bin." Ryan did not raise it any further.

Finally, there were also participants who had simply decided, once and for all, to avoid conflict under all circumstances on personal messaging. For example, Josephine [#41], from the North East and in her early fifties, explained her approach when she communicated with people who she knew "had a problem with the pandemic or Covid" (by which she meant people who opposed vaccination): "I don't put my opinions on people or anything like that. […] You've just gotta be very, very careful on what you send out there, don't you, and think before you send it. [I] don't do it to anybody. I'm very neutral."

David [#85], in his early thirties and also in the North East, expressed his approach vividly and succinctly: "I don't engage with them. Sort of it's an argument you'll never win. It's like playing chess with a pigeon."

Table 1. Norms of Conflict Avoidance: Further Evidence

Participant	What They Said
#97	"I haven't had those discussions on Messenger […] It just becomes a bit counterproductive on that public forum, just to share those kinds of things, it just becomes a, you know, an opposite view. […] I'm not trying to change their view, and they're not gunna change my view, so I don't waste my energy putting those things out on there in that way. So I wouldn't comment, I just would let it, I'd see it, note it, see other people's comments, maybe think 'crazy' or whatever, but I wouldn't, you know, I wouldn't get involved." *Anthony, Male, 63, London.*
#69	"I'm quite happy to debate with someone, but what I'm not happy to do is have some sort of slanging match online that is visible to other people." *Christine, Female, 59, East Midlands*
#50	"I couldn't be bothered to sort of counter each individual thing. It was just at that point, that's where I started muting things and sort of thought I can't be bothered with this. I'm now staying away from my phone […] I tended to ignore most of them […] if I'm bored and sat on the sofa I'll sort of reply back to it and sort of counter or whatever, but more often than not […] I just let it skip by." *Harry, Male, 45, East Midlands*
#81	"I think our group came to an agreement that we're just not gunna talk about Covid between us. […] It was just creating a bit of tension, so we didn't. Even when I heard that he was slightly anti-vax, I didn't bring it up, because I just thought I just can't,

	can't be dealing with this." *Denisse, Female, 27, London*
#71	"Where I work, I've got some lads, some people who do some work for us. They're extremely anti-, they spend all day going on about how it's all a big conspiracy and all that […] They're just like completely, you know, they've decided, and there's no discussing with them. It's all a load of crap as far as they're concerned." *Fred, Male, 47, North East*
#75	"I had to hide her posts. She was really offended by the thought of having to have the vaccine passport and, you know, her and her friends were obsessive about, you know, the government knowing all your information and stuff like that […] They were just really ranting about that and I just, I didn't appreciate it at all. She's now, I'm still friends with her, so she doesn't know, but her notifications are hidden." *Eve, Female, 43, North East*
#70	"So when I see stuff like that I'm just like, I don't even want to go into the debate about it because, if you don't know how a vaccine actually works there's not much point trying explain to you that's not what it's for." *Grace, Female, 26, East Midlands*
#47	"I said it on Facebook, then suddenly you get a few private messages come in through Messenger—'Are you hoping to have it done?,' 'It's a government conspiracy,' 'It's going to make you ill," you know, 'You're going to get Covid because that's what's in the injection,' you know, so you get stupidity coming in. […] I said basically nothing because, at the end of the day I know what I wanted to do […] I don't see the sense of having a drawn out conversation with them." *Martin, Male, 62, East Midlands*
#32	"They have this thing where they said they were injecting DNA cells through the vaccine and stuff. That was a [WhatsApp] 'forward,' that was going around […] I mean, most of the times, if I see 'forwarded many times' I don't even download the image or the video. I just let it go." *Priya, Female, 32, London*
#10	One of my daughters and partner have at the moment said they're not going to be vaccinated. And everybody else in the family has either, you know, been vaccinated or said they will be. There's been a little bit of discussion about the whys and the why nots … I'm sort of, I'm ignoring it a little bit." *Christopher, Male, 74, London*
#30	"I did have WhatsApp but it's currently deleted, and I don't know if you'll ask me why but it's because of, you know, the whole Covid message thing. I had so much spam coming over like, 'Is the vaccine good? Is the vaccine bad?' I had it temporarily blocked, but I just didn't want to hear it […] cos it just makes you stressed." *Eba, Female, 23, London*
#35	"I'll open the link just out of curiosity, but if I find out it's just rubbish I'll not put a response, I'll not challenge them on it. I'll just sort of leave it. It's not really worth it, yeah." *Kurt, Male, 44, East Midlands*
#18	"[In WhatsApp groups] it is different. If it's there for everybody else […] it looks harder. It looks like you've taken a much harder line than you perhaps would have done. If you say it with a smile or a joke in your voice, you can defuse the situation a lot more easily than you can with a text or a WhatsApp message, I think." *Diana, Female, 64, East Midlands*

6. "Hey, that's not right—is it!?": Routes Around Conflict Avoidance—and Their Limits

While conflict avoidance clearly shaped how participants responded to Covid vaccine misinformation on personal messaging, this norm is not fixed and immovable, but context dependent. Some of our participants revealed how they tried to develop routes around conflict avoidance. These involve opening up communication flows in order to be able to share criticisms of anti-vaccination misinformation in encounters they perceive to be less risky.

This is particularly the case among smaller groups of people who have high levels of interpersonal trust. Several participants want to avoid overt conflict about Covid vaccines in larger groups, but they also wanted to learn about the experiences of others and share reliable information about vaccine safety and efficacy. It is also clear that, in a small number of cases, messaging between those with close personal ties provides a context for directly challenging vaccine misinformation. However, there are some hard limits to the extent to which these routes around conflict avoidance will reduce the spread of misinformation, as we explain.

6.1 Gauging and Scaling

Recall Bella's story, which we discussed above. Bella is reluctant to speak up against anti-vaccine misinformation posted in the school parents' WhatsApp group. She explained how she fears standing out from the 30 other parents in the group and lacks the confidence to challenge the posts.

Revealingly, however, in the same interview Bella went on to explain how, on occasions such as this, she does not entirely withdraw. Instead, she sends messages to other friends with whom she is close and who she knows share her positive views of vaccination. Bella *gauges* opinion in smaller groups and one-to-one chats on WhatsApp. She uses these as less risky settings, not only to air her own views, but also to covertly criticise those who post misleading information in the larger parents' groups.

> It's really tricky, cos there's like, 30 other parents on there and you don't want to be the, and, you know, in fact, what I actually did was message my other friend from that group in a separate group chat to say 'hey, that's not right—is it!?' and so I would message the few people I felt comfortable with, and maybe say something about it, but I was too cowardly to call it out in front of 30 other school parents.

We term this *gauging and scaling*. It is the practice whereby, to make sense of problematic information, one can move from larger to smaller groups, or from groups to one-to-one messaging, and then back to the group. Gauging and scaling was widespread among our interviewees. Some revealed how they perform it to try to help themselves and their close ties make sense of the conspiracy theories and other misinformation they saw posted in some of the groups with larger memberships. Some did it in the opposite direction: they tried to glean insights from larger groups, in the hope this would help them make sense of misinformation they saw posted in their one-to-one and small group interactions with closer friends and family.

Abeni (#12) lives in south London and is in her late thirties. She told us how she had been finding it difficult to make up her mind about whether to get vaccinated. She spends time reading news reports on the BBC website and television news but faces significant pressure on WhatsApp from some of her family, who implore her to avoid the jab. At the time of the interview Abeni's age group was about to become eligible for the first vaccination dose.

Abeni's WhatsApp video calls with her mother and her sisters (who live outside the UK, where Abeni grew up before migrating to London) feature daily exhortations that she should avoid getting vaccinated. Her mother and sisters argue that the vaccines are unsafe and will

cause physical harm. Rather than being based on detailed knowledge of the potential side effects of vaccination, this view stems from a general lack of trust in government. As Abeni explained:

> Whenever I'm calling my mum, she's like 'Oh, have you done the vaccine yet?' I say 'no.' She says, 'Okay don't do it.' She's, you know, she's telling me not to do it every day but […] it's really difficult for me, because I can't say no to her. I can't say 'Okay mum I have to do it, because I have my reasons. […] It's really difficult sometimes when you hear things. You don't know what to do and how to react. […] She thinks it's not gonna work or she thinks she's gonna have side effects. She thinks, you know, everything the government says is not genuine.

When asked in the interview if it is only her mother and sisters who discourage her from getting vaccinated, Abeni confirmed this was the case. So, to deflate some of the pressure from her family on WhatsApp and find a route around her need to avoid conflict there, Abeni also uses personal messaging to connect with other groups, including a school group and a local church group. She sees these as opportunities to observe people at first hand who she knows have already been vaccinated:

> "I read a lot of stuff. People, you know, who did the vaccine before, they're asking people to, you know, encouraging people to do it, so I guess, yeah, I hear every day positive things, negative things. You need to do a balance, then, and then make your decision, to be honest."

Abeni not only scales up to these other groups to obtain social support to counteract the discouragement she receives on WhatsApp from her family she also uses the groups to gauge experiences of the vaccine's side effects. She treats these as a way to assess how much truth there is in what her mother and sisters falsely claim are the widespread dangerous side effects of vaccination. For Abeni, scaling from the close family interactions to these other groups means she can gauge other people's experiences, rather than just asking their opinions about vaccines in the abstract. This also means that the experiences of those she encounters come to assume significance in shaping her attitudes to vaccination. In this case, those experiences can counteract the misinformation shared by her family members. But the misinformation remains unchallenged in the family group context.

Georgios (#1) is from London and in his late forties. He belongs to a WhatsApp group of old university friends. He explained how he and some of his friends scale to avoid overt conflict with those in the university group who are ambivalent about getting vaccinated.

Revealingly, the friends who are worried about the vaccines tend to avoid confrontation in the group and do not attempt to impose their own views—an illustration of how the norm of conflict avoidance can also shape the behaviour of those who have fears about vaccination and can lead them to avoid overtly discouraging others. As Georgios said, "they stay quiet […] a bit in the background. […] I can see that they, the way they avoid confrontation, because they know that their view can be challenged."

However, rather than confronting those in the group who are vaccine hesitant, Georgios and his vaccine-positive friends adopt a different approach. They do not "overwhelm the person with something they're not comfortable with," Georgios explained, but they scale down to smaller groups to discuss the problem, before scaling their collective approach back up to the larger group:

> We, outside the group, we do talk privately between us as well. […] Those who are there sort of say, 'oh, but we need to be careful with [them] because, you know, they don't want to get the vaccine and they try to stay away from this.' So, we're sort of highlighting

there's some sort of attention needed from someone and give them space…. So, we share this type of information, when we know about someone else, in a more private way outside the [main] WhatsApp group.

6.2 The Benefits and Limits of Gauging and Scaling

There are benefits to this practice of routing around the limits imposed by conflict avoidance on personal messaging. Georgios and his friends know each other well enough to be aware that direct confrontation in a messaging group might provoke a negative response from those worried about vaccination. It would make more visible those in the group Georgios and his friends know prefer to keep their fears to themselves. Given that the vaccine hesitant friends do not share their concerns with the group, let alone try to impose their views on it, the context here is different from those of other participants such as Julia and Bella, where clear anti-vaccination misinformation was posted into a group.

But there are also limits to how the kind of approach Georgios and his old university friends adopt can impact the spread of vaccine misinformation among the members of the larger group. Their approach still removes the topic from conversation in that group, placing it off limits. This means that Georgios and his vaccine-positive friends end up having fewer opportunities to share and explain why they support getting vaccinated.

6.3. Confrontation and its Unintended Consequences

Later in the interview with Georgios, it also became clear that there are some further limits to how he tries to route around the norm of conflict avoidance. He is selective in how he adopts gauging and scaling and there are limits to how far he will go to avoid confronting people on personal messaging.

He recounted the story of another friend who was worried about getting vaccinated. The friend messaged him on WhatsApp, elaborating on the widely circulated false conspiracy theory that the Covid vaccination programme was a plot to insert microchips into people's bodies as a way to track and control them. Georgios detailed how a particular variation of the conspiracy theory came into the orbit of his friend by way of a personal anecdote. In the story told to his friend, a man attending a vaccination centre becomes lost and asks a nurse for directions. According to the story, the nurse already knows the name of the man and calls him by his name. The man did not give his name, so how could the nurse possibly know it? In the conspiracy narrative, this reveals to the man that he is being tracked by the microchip in the vaccine.

At first, Georgios thought his friend was relaying the story to him on WhatsApp as a joke. Then, he realised it was not a joke. His friend was using this story as a way to explain the decision to avoid getting vaccinated. In this case, Georgios saw a need to confront his friend:

I thought he was taking the mickey,[29] and then I realised that no, he was serious, and I said, 'how can you rely on this type of, you know, hearsay? Someone went to the hospital and the nurse knew his name and that's why this is proof that the vaccine is a scam!' I mean, I was just, yeah, so that became a bit more confrontational because I was like, 'you—you're out of your mind. You've lost it!'

But things did not go well. Georgios described how his friend made a quick move to avoid further conflict by saying 'Oh, I've got to go now,' and immediately cut off the discussion. This example highlights that conflict avoidance can work both ways. It can discourage supporters of vaccination from correcting misinformation and conspiracies, but it can also enable those confronted for sharing falsehoods to exit and limit their further engagement.

Georgios went on to explain that he remains close to this friend and communicates with

him often on personal messaging, but the subject of Covid vaccines is now firmly off limits: "we still chat a lot on WhatsApp, yes [...] I still do, I still do—not about the vaccines."

Conflict avoidance casts a long shadow. It is understandably a powerful norm among family, friends, acquaintances, and, of course, even strangers, and in all kinds of interactions in everyday life. But if the norm mediates how vaccine misinformation is encountered in personal messaging, the public-interpersonal aspects of messaging that contribute to the spread of misinformation are more likely to operate. Interactions on personal messaging are never fully private, nor are they fully public. But misinformation often arrives into the exchanges from domains beyond the interpersonal—in the form of links, memes, and forwarded anecdotes that originate in other contexts, such as Georgios' friend's conspiracy story. As personal messaging users bracket out this reality by making discussion of misinformation out of bounds to avoid conflict, opportunities to engage in dialogue about misinformation are lost.

Yet, as Georgios' case also shows, to shift to direct confrontation also presents risks. It can end up severing lines of communication and place the debunking of misinformation and conspiracy theories off limits. The close bonds of friendship may persist, but only on the basis that Covid vaccines and the misinformation that surrounds them are not up for discussion.

Table 2. Routes Around Conflict Avoidance—and Their Limits: Further Evidence

Participant	What They Said
#63	"Some family members have chosen not to be vaccinated. So I have gone into a discussion of the positive sides of getting the vaccination for that person. I thought WhatsApp was actually a good way of putting your arguments down. I think that's where writing can get over the emotions of a personal get-together, where emotions could spill over. Put the facts down in a sort of plain way. [...] But they then came back in writing to say 'but I know, I've read this and I read that.' [...] It's just left at 'we will agree to disagree.' [...] I capped it at that point." *Adam, Male, 60, North East*
#80	"In my in-laws [Whatsapp] group, my sister-in-law disagrees with the vaccine, and she's disagreed with all vaccines, so my husband likes to send her articles cos he's, we're all pro-vaccine here, so I think that sometimes causes debate, which I don't like, cos I think it winds people up." *Philippa, Female, 34, London*
#43	"I always try to put a comment or put a link on to [...] a factual [...] page ... rather than just rely on me saying, you know, 'this is not true'[...] I tend to say 'you should read this for yourself, this is, this is what the truth, you know, the truth is, the facts are about the vaccine' and things like this [...] You've got to just try and find ways of convincing them [...] without calling them stupid [laughs]. Yeah, cos once you do that, you know that [will lead to], 'right!' 'I'm not listening anymore!'" *Rob, Male, 68, North East*
#2	"[M]y other friend who says things like, she really thinks it's the government trying to keep us all under control, I don't believe that at all. But she would quite happily put that on Messenger or the WhatsApp group. Well, I don't want to upset her so, you know, if she actually says it to my face I might say something, but I wouldn't in the group because I wouldn't want to [...] The other people can see it and I wouldn't want them to think [...] worse of her, do you know what I mean? [...] If I was doing something like that I'd send her a message before, you know, just a text message." *Sandra, Female, 64, North East*
#35	"He [a friend] didn't want to get it obviously, but I do, so we [group of friends]

	were kind of telling him to get it […] he kind of just sort of rebuffed it. He sort of said 'Oh whatever,' and kind of, the conversation kind of died down." *Kurt, Male, 44, East Midlands*
#27	"One of my friends, not friends really, but somebody at work, an acquaintance, he has been quite anti-, against this vaccine and he even, he used to send me material against it which I used to check […] So what I did is that I would specifically send him the material which supported the evidence that the vaccine is important and it works. I also sent him both the times when I got the jab that I received it and a little follow up the next day, that there were not side effects … He never replied specifically … I just did a social duty on my part to convince him, although I didn't convince him very directly that he's wrong, but just to show him that I had the vaccine." *Farhan, Male, 56, London*
#21	"We have had, like, people sharing things, kind of regards to the vaccinations and things—why they're not happy about taking it. And then that, you know, sort of spreads like wildfire outside the [WhatsApp] groups in terms of, like, you know, 'this person's like, again, you know, is a Covid denier,' and all the rest of it." *Luke, Male, 41, London*

7. Conclusions

In this report, we have illustrated how social, familial, technological, and spatial factors contribute to a social norm of conflict avoidance that mediates how people respond to vaccine misinformation on personal messaging. This norm can mean vaccine misinformation goes unchallenged because people stay silent and let it flow, often inadvertently. Conflict avoidance can disempower, making it difficult to speak out, especially when vaccine myths and conspiracies are shared in groups involving family members, friends, or parents in the local neighbourhood.

> *A social norm of conflict avoidance mediates people's responses to vaccine misinformation on personal messaging. This norm can mean vaccine misinformation goes unchallenged because people stay silent and let it flow, often inadvertently.*

7.1. This Report's Limitations

Before we set out some broader conclusions, we stress that our findings in this report cannot be generalised to the UK population. This report is based on qualitative and interpretive analysis of in-depth interviews with a small number of participants (102). Some themes from the interviews are illustrated with only a small number of examples. Our research design for this report also means we have not sought to measure the prevalence across UK society of vaccine misinformation on personal messaging or the prevalence of responses to it that we have discussed. Further research is needed, using methods such as nationally representative surveys and survey experiments, to identify the prevalence, strength, and effects among the UK public of the different facets of conflict avoidance we have identified.

We also note that the analysis is preliminary and derives from one, albeit major, theme from a dataset of interviews that includes many themes that we have not discussed in this report. Many people we interviewed for this research discussed the side effects, concerns over the speed of vaccine development, the different levels of risk associated with not being vaccinated, and the issue of who to trust when everything around them feels uncertain. Participants told us how they used messaging apps to update others with the facts about vaccines. Some simply shared facts about vaccine availability or statistics. In ways we have not had space to cover in

this report, people used personal messaging to discover, reflect upon, share, discuss, withhold, and, of course, avoid information about Covid vaccines.

7.2 Conflict Avoidance Matters

What we feel confident in concluding is that people's experiences are far more complex than suggested by the simplistic doom-laden framing that often drives news reports about personal messaging. Exposure to misinformation is only a basic starting point. Our interpretive method in this report has allowed us to show how the norm of conflict avoidance in the hidden world of personal messaging is likely to make a difference to how misinformation spreads.

It is clear that some people experience significant obstacles to challenging and correcting those who share vaccine misinformation on personal messaging. A clear finding was that sometimes jarring emotional contradictions generate and then reinforce conflict avoidance. People can feel it is extremely difficult, or not worthwhile, to speak up against false and misleading information shared by others, even those to whom they are personally close.

At the same time, the public or semi-public character of discourse in larger messaging groups also leads to a fear of standing out, of being seen to be undermining group cohesion, and a worry that stronger and more formal evidentiary justification is required to challenge misinformation in larger group settings which have a more public character than smaller interpersonal exchanges.

Some people attempt to route around conflict avoidance by scaling up and down between different group settings and gauging the experiences revealed in other groups. They do this to create opportunities for expressing solidarity with those who are like-minded. Being personally close makes it more likely that people will know in advance that they share the same views. In those contexts, people can express views without worrying about provoking conflict.

However, we also found that there are hard limits to how routing around the silencing effects caused by conflict avoidance will interrupt the spread of vaccine misinformation. Scaling

> *There are hard limits to how routing around the silencing effects caused by conflict avoidance will also interrupt the spread of vaccine misinformation.*

down to smaller groups and groups comprising those who already share positive views of Covid vaccination means that opportunities to open up dialogue with the vaccine hesitant become lost in the process. And when confrontation replaces conflict avoidance, as we have shown, it can backfire, as talk of vaccination is placed off limits, leaving personal messaging interactions to continue, but only on the basis of "safer," less conflictual topics.

Many participants understandably prioritised the maintenance of smooth personal relationships or the protection of their own emotional wellbeing. Despite seeing Covid vaccine misinformation as a public problem whose effects were widespread, they did not see their personal messaging interactions as the appropriate arenas to combat the problem.

Nevertheless, there is value in promoting rather than closing down dialogue in these environments. This is particularly the case in group chats, where other members may be misled by misinformation and subsequently suffer its harmful effects. Understanding the complexities of the interactions within which misinformation is shared, ignored, or challenged on personal messaging platforms is key to designing policies to support and empower people to engage constructively. Importantly, our research reveals that such policies will need to find ways to balance users' desires to maintain healthy relationships with friends, family members, and the other communities to which they belong with the need to foster healthy relationships with public health information for themselves and their fellow citizens.

7.3. Person-Focused, not Content-Focused, Anti-Misinformation Interventions

If encouraged in suitable ways by public health communicators, communication based on these bonds of interpersonal trust could play new and creative roles in mitigating the spread of online vaccine misinformation more broadly.

Interventions could encourage people to scale up from the high-trust, one-to-one, and small group interactions to the larger groups where they could work together collectively in dialogue-based challenges to misinformation, avoiding the need to stand out as lone individuals.

Equally, interventions could focus on encouraging people to scale down, by discussing approaches to misinformation in their groups and then taking lessons learned down to the one-to-one interactions that our research has shown are such important rituals in personal messaging. Together, these could provide a foundation for overcoming the powerful interpersonal constraints on people's ability to challenge and correct misinformation in the hybrid public-interpersonal networks we have documented.

The encryption on personal messaging means shared news and information is beyond the reach of the algorithmic sorting and the human moderation that have typically been attempted by public platforms, particularly YouTube, Facebook, and Twitter, to limit the spread of falsehoods. This renders impossible the much-lauded—if seldom easily achieved— "technological fixes" to misinformation and it also rules out a role for the fully scalable professional journalistic fact checking of content circulating on personal messaging. As a result, there are insurmountable challenges to deploying content-focused anti-misinformation interventions.

Instead, our findings show that *person-focused* anti-misinformation interventions are more likely to be viable and successful for reducing the spread of vaccine misinformation on personal messaging.

Such interventions could help people overcome the emotional contradictions they experience when members of their networks share misinformation. Interventions could also help people identify the silencing effects caused by the norm of conflict avoidance we have identified, including the feeling that it is not worth going through the trouble and discomfort that may result from a challenging conversation and the situations when the public-interpersonal dynamics of personal messaging tend to deter people from speaking up in larger group contexts.

> *This could be achieved, not by encouraging antagonism or blind confidence, but an empathetic, dialogical orientation toward others.*

This goal could be achieved, not by encouraging antagonism or blind confidence in one's own opinion, but an empathetic, dialogical orientation toward others. Social norms do not emerge spontaneously. They must be maintained by people themselves. Those who are enthusiastic about vaccination still need clear information but they also need effective ways to share it with others in personal messaging. Without these, the vaccine positive will lack the ability to signal their experiences in ways that signal that vaccines are safe and effective. All of these points will be important to bear in mind as the UK vaccination programme moves forward.

Notes

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[14] Here are just a few examples of news reports on personal messaging and misinformation in the UK: Abdul, G. (2021, September 14). UK Community Leaders Fight Covid-19 Vaccine Misinformation. *New York Times*; BBC. (2021, February 20). Vaccines: The Disinformation War. *BBC Panorama*; Gallagher, S. (2021, September 2). 'I've Cut Them Out of my Life': When Family and Friends Fall Out Over the Covid Vaccine. *The Independent*; Latto, R. (2021, February 17). Coronavirus WhatsApp Scam: Message Claiming to Have Covid-19 Cure is Hoax—Here's What to do if you Get it. *iNews*; Parsons, J. (2021, August 17). Anti-vaxxers Offered Fake NHS Covid Passes through Encrypted Messaging Apps. *Metro*. WhatsApp's corporate website features only positive stories about how it can help people "stay connected" during the pandemic: https://www.whatsapp.com/coronavirus. For a revealing study of how a journalist in Israel used WhatsApp to enlist political activists to verify information see Kligler-Vilenchik, N. (2022). Collective Social Correction: Addressing Misinformation through Group Practices of Information Verification on WhatsApp. *Digital Journalism*, *10*(2), 300–318.

[15] We use the term "comprehensively" advisedly. Individual WhatsApp users can use the "report" feature to flag any message or group they encounter. This sends the last five messages sent by the reported user or group directly to WhatsApp whose staff assess the content and decide whether to ban the user or group for violations of WhatsApp's terms of service relating to abuse and spam. From what is known publicly, however, this involves only a tiny minority of the 20 billion messages that are sent each day; only about a thousand WhatsApp staff run this operation. In 2021, WhatsApp's parent company Meta announced a new privacy policy outlining that, in some territories outside the European Union GDPR area, selected personal WhatsApp metadata would be shared with Facebook and its associated companies but this new policy does not apply to the UK. See Elkind, P., Gillum, J., & Silverman, C. (2021, September 8). How Facebook Undermines Privacy Protections for Its 2 Billion WhatsApp Users. *The Wire*; WhatsApp. (2022). About Blocking and Reporting Contacts.

[16] Malhotra, P. (2020). A Relationship-Centered and Culturally Informed Approach to Studying Misinformation on Covid-19. *Social Media + Society*, *6*(3).

[17] Gardner, B., Davies, A., McAteer, J., & Michie, S. (2010). Beliefs Underlying UK Parents' Views Towards MMR Promotion Interventions: A Qualitative Study. *Psychology, Health & Medicine*, *15*(2), 220–230; Jarrett, C. et al. (2015). Strategies for Addressing Vaccine Hesitancy—A Systematic Review; Reverby, S. M. (2011). Listening to Narratives from the Tuskegee Syphilis Study. *The Lancet*, *377*(9778), 1646–1647; "It seems impossible that it's been made so quickly": A Qualitative Investigation of Concerns About the Speed of Covid-19 Vaccine Development and How These May be Overcome. *Human Vaccines & Immunotherapeutics*, *18*(1), 1-8.

[18] Cialdini, R., Reno, R. R., & Kallgren, C. A. (1990). A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places. *Journal of Personality and Social Psychology*, 58(6), 1015– 1026. Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The Constructive, Destructive, and Reconstructive Power of Social Norms. *Psychological Science*, *18*(5), 429–434.

[19] Ross, A. R. N., Chadwick, A., & Vaccari, C. (2021). Digital Media and the Proliferation of Public Opinion Cues Online: Biases and Vulnerabilities in the New Attention Economy. In J. Morrison, J., J. Birks, & M. Berry (Eds.) *The Routledge Companion to Political Journalism* (pp. 241–251). Routledge.

[20] The research on social norms is vast, sprawling, and multi-disciplinary but one useful and up-to-date overview is Legros, S. & Cislaghi, B. (2020). Mapping the Social-Norms Literature: An Overview of Reviews. *Perspectives on Psychological Science*, 15(1), 62–80. On relationality see for example Castells, M. (2009). *Communication Power*. Oxford University Press.

[21] Bikhchandani, S., Hirshleifer, D., & Welch, I. (1998). Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades. *Journal of Economic Perspectives*, *12*(3), 151-170.

[22] Sunstein, C. R. & Kuran, T. (1999). Availability Cascades and Risk Regulation. *Stanford Law Review*, 51, 683-768.

[23] Brunson, E. K. (2013). The Impact of Social Networks on Parents' Vaccination Decisions. *Pediatrics*, *131*(5), e1397–e1404.

[24] Swart, J., Peters, C., & Broersma, M. (2019). Sharing and Discussing News in Private Social Media Groups. *Digital Journalism*, *7*(2), 187–205.

[25] On this distinction see Uslaner, E. (2002). *The Moral Foundations of Trust*. Cambridge University Press.

[26] On the importance of cultural context see Malhotra, P. (2020). A Relationship-Centered and Culturally Informed Approach to Studying Misinformation on COVID-19. Social Media + Society, 6(3).

[27] A classic account of this force is Eliasoph, N. (1998). *Avoiding Politics: How Americans Produce Apathy in Everyday Life*. Cambridge University Press. See also Mutz, D. C. (2002). The Consequences of Cross-Cutting Networks for Political Participation. *American Journal of Political Science*, *46*(4), 838-855. Conflict avoidance of this kind might not operate as strongly on public social media, where confronting misinformation posted by others could be less effortful due to the role of anonymity, pseudonymity and the online disinhibition effect, or because debunking misinformation satisfies a motivation to present oneself positively in front of numerous others. However, even in public social media contexts a norm of conflict avoidance can still impact the correction of misinformation. See Tandoc, E., Lim, D., & Ling, R. (2020). Diffusion of Disinformation: How Social Media Users Respond to Fake News and Why. *Journalism*, *21*(3), 381–398. For the online disinhibition effect see Suler, J. (2004). The Online Disinhibition Effect. *Cyberpsychology & Behavior*, *7*(3), 321–326.

[28] The theory of conflict avoidance we outline here differs from the well-known theory of the "spiral of silence." The latter describes an orientation toward strangers and posits that people are less likely to express their opinion when they perceive the opinion is not held by others. See Noelle-Neumann, E. (1993). *The Spiral of Silence: Public Opinion, our Social Skin*. University of Chicago Press. We note, however, that some studies have tested the spiral of silence theory in the context of family and friendship ties and have found evidence of its effects. See Matthes, J., Knoll, J., & Sikorski, C. (2018). The "Spiral of Silence" Revisited: A Meta-Analysis on the Relationship Between Perceptions of Opinion Support and Political Opinion Expression. *Communication Research*, *45*(1), 3-33. However, most participants we interviewed described settings where other known individuals or small numbers posted vaccine misinformation into personal messaging exchanges. These were not settings where people's reluctance to confront misinformation stemmed from their perception that their positive view of vaccines would place them in a minority. The broader context is also relevant: while a substantial minority of people in the UK are Covid vaccine hesitant, there is clear majority support for Covid vaccines.

[29] "Taking the mickey" is British slang for teasing or making fun of someone.

Appendix

A1. Data and Research Method

All interview material used in this report has been anonymised through removal or replacement of any identifying details. All names used are pseudonyms assigned by the researchers.

Ethical approval for this study was granted by Loughborough University's Ethics Review Subcommittee (2021-4516-3252; PI Chadwick).

We hired established opinion polling company Opinium Research to recruit participants. Opinium maintains its own panel of more than 40,000 members of the UK public who participate in surveys and market research. Opinium is a member of the British Polling Council, the Market Research Society, and the European Society for Opinion and Marketing Research (ESOMAR).

Sampling and Recruitment

We recruited people who used at least one of the following platforms at least a few times a week: WhatsApp, Facebook Messenger, iMessages, Android Messages, Snapchat, Telegram, Signal. To ensure representation of those who mostly use the built-in apps iMessages and Android Messages, we recruited 10 participants who used the built-in apps frequently but used the others less frequently. Figure A1 shows which platforms our participants used and how frequently.

To reduce self-selection bias and ensure sincere responses at the screening stage, potential participants were not informed of the precise topic of the in-depth interviews before they provisionally agreed to take part. After screening, each participant was then provided with full Loughborough University research ethics committee approved information describing the study. Each participant completed an informed consent form before the interview.

Demographics. A screening questionnaire ensured the demographic composition of our participants roughly reflects the diversity of the UK population across gender, age, ethnicity, educational attainment, and basic digital literacy. Figures A2 and A3 display the distributions across these variables. Exact matching is impossible and of little meaningful value in a qualitative study with a sample of 102 participants, but our recruitment method meant we avoided over-recruiting from a narrow range of social groups. This is particularly important when using online panels. One of the Everyday Misinformation Project's aims is to explore the role of community and neighbourhood in shaping sharing on personal messaging. With this in mind, we recruited participants who resided in three distinct regions: London, the East Midlands, and the North East.

Basic Digital Literacy. To ensure that participants' basic digital literacy roughly matched the distribution across the UK adult population we used a single screening question we took from OFCOM's Adult Media Literacy Tracker survey:

> "When you use a search engine to find information, you enter a query in the search box and the search engine will then show some links to websites in the results pages. Which one of these is closest to your opinion about the level of accuracy or bias of the information detailed in the websites that appear in the results pages?"
> 1. I think that if they have been listed by the search engine, these websites will have accurate and unbiased information
> 2. I think that some of the websites will be accurate or unbiased and some won't be
> 3. I don't really think about whether or not they have accurate or unbiased information, I just use the sites I like the look of.
> 4. Don't know.

The distribution on this question in OFCOM's 2020 survey was 21% for option 1, 60% for option 2, and 19% for option 3.[1] The distribution among our participants deviated only slightly from the national distribution. See Figure A2. Respondents who chose "Don't know" to this question were screened out and were not interviewed.

Calibration. We employed an iterative sampling strategy, with six recruitment rounds on a rolling schedule. This allowed us to adjust for discrepancies between potential participants selected from Opinium's panel and the individuals who progressed to interview stage. For example, the first group of interviewees scored relatively highly on educational attainment and London residence. So, in the second round, we balanced the sample by recruting on North East and East Midlands residence and lower educational attainment. We continued to calibrate recruitment in this way throughout the five-month fieldwork for this first phase of work (May-December 2021), adjusting as necessary to ensure balance on demographics, personal messaging use, and basic digital literacy across the sample of actual interviewees.

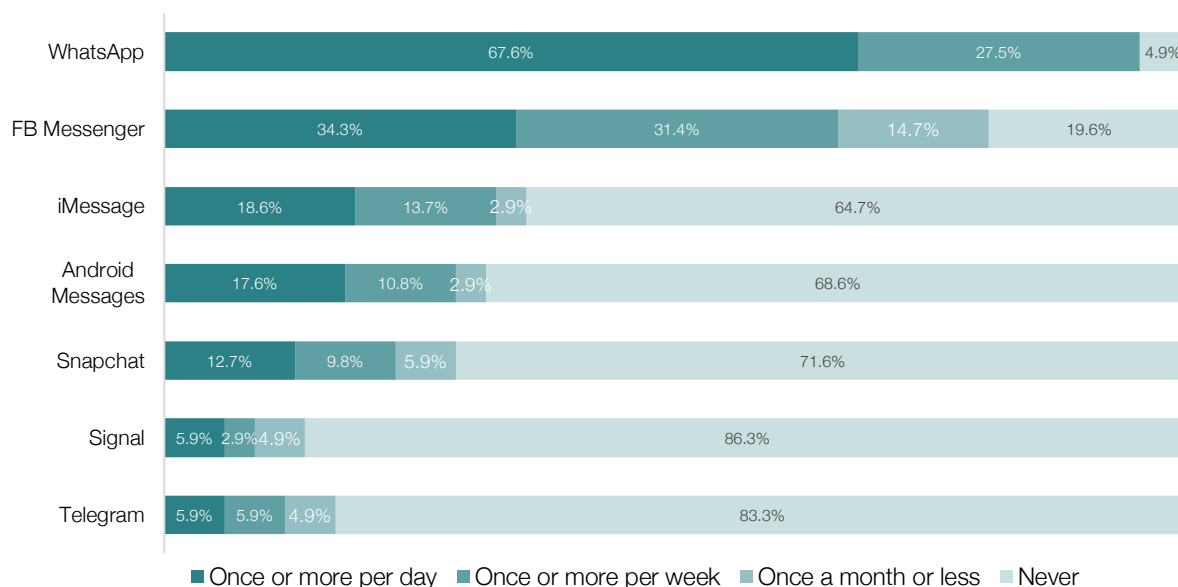**Figure A1. Participants' Use of Personal Messaging (n=102)**

	Once or more per day	Once or more per week	Once a month or less	Never
WhatsApp	67.6%	27.5%		4.9%
FB Messenger	34.3%	31.4%	14.7%	19.6%
iMessage	18.6%	13.7%	2.9%	64.7%
Android Messages	17.6%	10.8%	2.9%	68.6%
Snapchat	12.7%	9.8%	5.9%	71.6%
Signal	5.9%	2.9%	4.9%	86.3%
Telegram	5.9%	5.9%	4.9%	83.3%

■ Once or more per day ■ Once or more per week ■ Once a month or less ■ Never

Figure A2. Participant Characteristics (n=102)

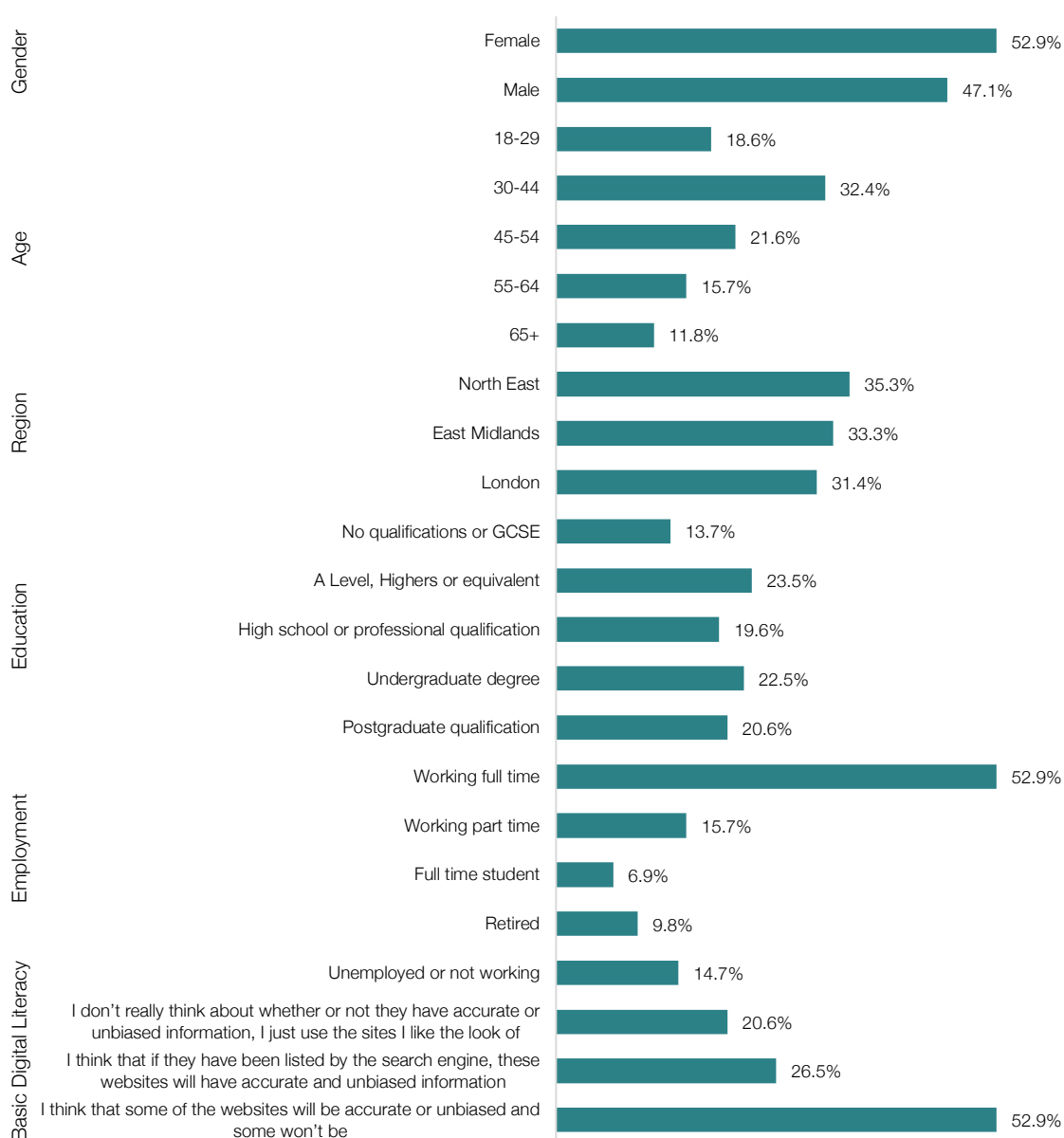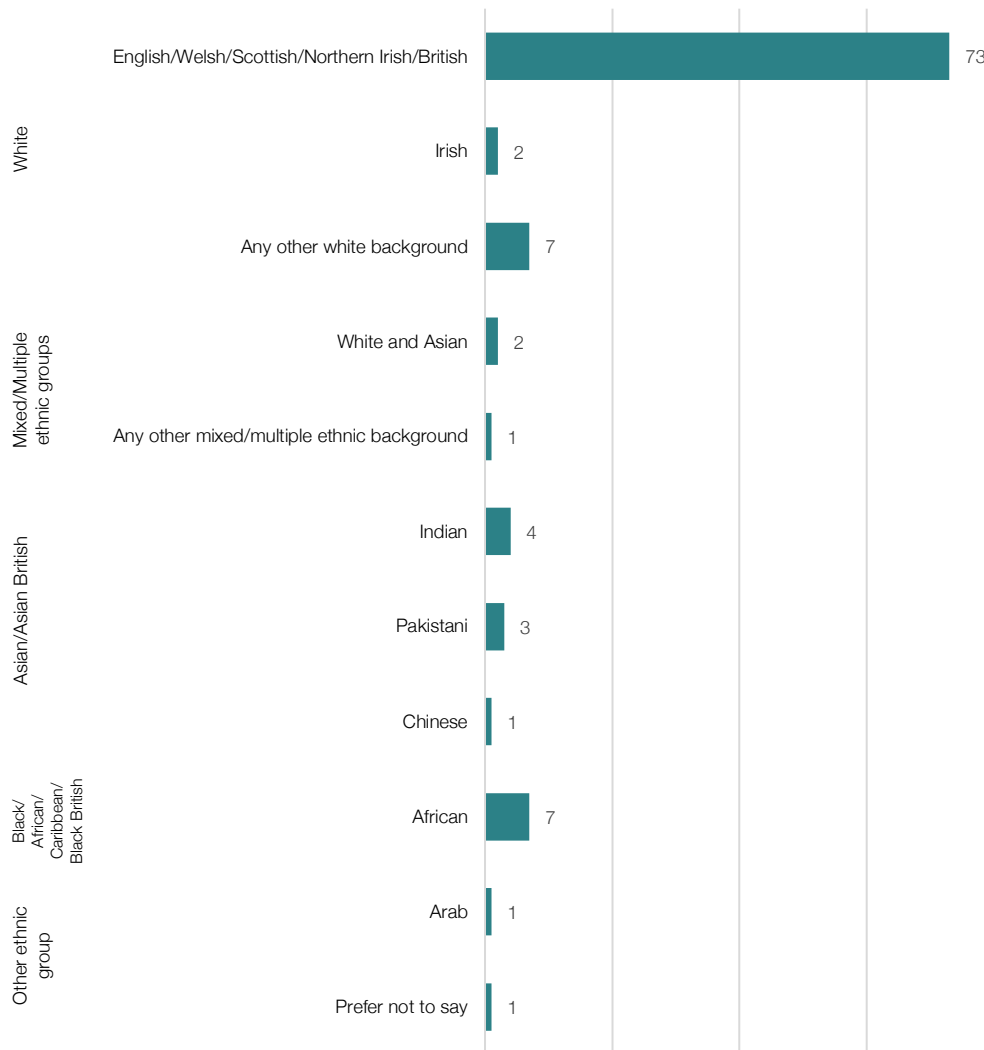| Category	Value	%
Gender	Female	52.9%
	Male	47.1%
Age	18-29	18.6%
	30-44	32.4%
	45-54	21.6%
	55-64	15.7%
	65+	11.8%
Region	North East	35.3%
	East Midlands	33.3%
	London	31.4%
Education	No qualifications or GCSE	13.7%
	A Level, Highers or equivalent	23.5%
	High school or professional qualification	19.6%
	Undergraduate degree	22.5%
	Postgraduate qualification	20.6%
Employment	Working full time	52.9%
	Working part time	15.7%
	Full time student	6.9%
	Retired	9.8%
	Unemployed or not working	14.7%
Basic Digital Literacy	I don't really think about whether or not they have accurate or unbiased information, I just use the sites I like the look of	20.6%
	I think that if they have been listed by the search engine, these websites will have accurate and unbiased information	26.5%
	I think that some of the websites will be accurate or unbiased and some won't be	52.9%

Figure A3. Participant Characteristics: Ethnicity (n=102)

Procedure

Due to pandemic social distancing, all interviews were held on Zoom, video-recorded and fully transcribed. Interviews were semi-structured and guided by an indicative list of themes we finalised following pilot interviews we conducted before fieldwork formally commenced. The pandemic featured as a topic of discussion in all interviews, but if a participant did not spontaneously talk about Covid vaccines, the interviewer raised the topic at an appropriate time in the interview. Interviews averaged about an hour and five minutes in length.

Analysis

We conducted emergent interpretive coding of the transcripts using NVivo. Coding of the first thirty interviews by two members of the research team served to provide the initial thematic categories. These categories were then discussed and refined in team meetings and a further 30 interviews were coded by a further member of the team. Following further team meetings to discuss coding consistency and refine codes, the remainder of the interviews were coded. All coders agreed on the final coding scheme for the corpus. A copy of the coding hierarchy and code descriptions, which includes many themes relevant to the wider project and not discussed in this report, will be made available to researchers on request 18 months after the funded project's end.

Risk Mitigation and Data Quality

Online interviews present challenges but also some advantages. Historically, much discussion of online research methods dates back to when the internet was mostly text-based. Recently, however, the mainstreaming of online video conferencing, which accelerated during the pandemic, has generated different challenges. Issues of access, authenticity of presentation, and discovery of the "real" social world in online qualitative work have not entirely vanished, but they are arguably less important now that the distinction between online and offline interaction has blurred or dissolved. The main issues today revolve around unequal digital skills in using, and unequal access to, online video calling. Once these obstacles are overcome, establishing rapport is only a little more difficult than in a face-to-face context. Online interviews are more cognitively demanding and both verbal and nonverbal cues can be more difficult to interpret on the screen. But again, it is debateable whether cues are easier to decode in in-person interviews when face coverings are being worn. There are some novel ethical considerations, for example when a participant needs privacy to be able to speak in the home.

We mitigated all of these risks by arranging a brief pre-interview, tech-check and rapport-building session with each participant before each full interview formally began.

A2. Disclosure and Integrity Statement

This report is a summary of ongoing academic research and has been written for a broad readership. It has not undergone formal academic peer-review prior to publication. To stay up to date with peer-reviewed academic publications from this project as they publish, please visit the website at https://everyday-mis.info.

Note to Appendix

[1] OFCOM (2020). Adults' media literacy.
https://www.ofcom.org.uk/__data/assets/pdf_file/0028/196372/adults-media-use-and-attitudes-2020-data-tables.pdf

About the Online Civic Culture Centre (O3C)

Established in February 2018 with initial funding award from Loughborough University's Adventure Research Programme, the Online Civic Culture Centre (O3C) seeks to understand the role of social media in shaping our civic culture. Directed by Professor Andrew Chadwick, it features academic staff and postdoctoral and doctoral researchers drawn from the disciplines of communication, social psychology, sociology, and information science. O3C enables teams of researchers to work together on issues of misinformation, disinformation, and hate speech and intolerance online. For more information, visit the O3C website and follow O3C on Twitter.

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