



Swiss residents' information behavior perceptions during the COVID-19 pandemic: A longitudinal qualitative study

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ABSTRACT

People's information behavior during the COVID-19 pandemic was challenged through vast amounts of information, misinformation, and disinformation. This study sets out to address the research gap of longitudinal, qualitative inquiries about how people's information behavior changed during the COVID-19 pandemic. It aims to assess how residents of German-speaking Switzerland perceived and evaluated information gathering during a global health crisis. As part of the "Solidarity in Times of a Pandemic" (SolPan) Research Commons, 83 semi-structured interviews with residents of German-speaking Switzerland were conducted in April 2020 (T1), October 2020 (T2), and October 2021 (T3). People were asked about their lived experiences during the COVID-19 pandemic. Qualitative data analysis followed a reflexive thematic analysis approach, using Wilson's model of information behavior as a theoretical framework. Participants perceived high-quality journalistic news media, the Swiss national government, scientific experts, and their direct social environment as trustworthy information sources. They were motivated to gather information through the wish of gaining agency and certainty in the context of a major, global health crisis. Intervening variables that hindered information seeking included a perceived lack of agency, habituation effects in the later stages of the pandemic, information overload, inconsistent information, and conspiracy theories. While information needs were generally high in T1, participants expressed a growing extent of information fatigue in T2. In T3, the most prominent themes were conflicting information and differing interpretations, which led to an increased perception of societal polarization, which was perceived as a direct consequence of participants' information behavior. This finding is contextualized through established models of attitude formation: The study indicates how participants formed rather stable attitudes over time and how this led to a growing polarization and societal segmentation as the pandemic progressed. Practical implications regarding how to meet such societal polarization during crises are discussed.

1. Introduction

The COVID-19 pandemic was a global public health crisis, defined by inherent uncertainty, high urgency, and immediate threat (McConnell, 2020). It coincided with what the World Health Organization termed an "infodemic", referring to "an overabundance of information, both online and offline" (World Health Organization, 2020). This overabundance influenced people's information behavior since it often led to information avoidance (Mao et al., 2022; Soroya et al., 2021). The infodemic also included the distribution of unsolicited news and misinformation, which were particularly driven by social media (Bridgman et al., 2020) and also led to information avoidance, heuristic information processing

(Kim et al., 2020), and behavioral change (Lee et al., 2020).

The infodemic thus challenged people's information behavior during the COVID-19 pandemic, which is problematic from both a public health and a societal perspective (World Health Organization, 2020). Fruitful information behavior can foster informed decision-making on how to behave in a public health crisis. As such, information behavior has a direct impact on public health, since liberal societies depend on people's understanding of how and why to behave in a certain way to manage a crisis, as mandatory measures in people's private lives are enforceable only to a limited extent. Thus, in a global crisis, individual information behavior also has direct social and societal consequences and, as will be shown in this paper, may lead to stigmatization and societal polarization

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(World Health Organization, 2020).

A considerable scholarship has analyzed people's information behavior during the COVID-19 pandemic empirically. First, several studies focused on the *content* of people's information seeking during the COVID-19 pandemic, identifying the topics infection control, vaccination, and long-term effects (Lühnen et al., 2023). Second, studies focused on *information sources*. A survey study from Italy found that people relied on scientists and made an effort to address the most reliable resources (Falcone and Sapienza, 2020). A systematic review with a global focus from 2021 found that online media were particularly important (Anagaw and Guadie, 2023). Residents of Germany mostly relied on television, radio, and newspapers (Lühnen et al., 2023). The relevance of social media differed: Some studies found a positive correlation between social media engagement and information seeking (J. Yang, 2022) and identified social media as an important health information source for the younger generation (Schäfer et al., 2021). Others found social media to be considered the least used and least trustworthy information source (Lühnen et al., 2023).

Third, studies focused on what *influenced individual information seeking* and the impact on people's behavior. Important predictors of information behavior included risk experience and the perceived social pressure to gather information (J. Z. Yang et al., 2022). Several studies also focused on demographic differences (Aldousari and Al-Sejari, 2021; Brown et al., 2021). One of the few qualitative interview studies in the field, conducted with 21 participants from Germany, found online information seeking to be a continuum between very active, in-depth information seeking and fact-checking, and passive information seeking where friends, families, and other influencers (e.g. on social media) acted as gatekeepers (Link et al., 2022). Avoidance became apparent due to distancing from sensational and false information, digital detox to protect against information overload and stress, and disinterest and information fatigue (Link et al., 2022).

While these studies identify the relevant factors influencing information behavior in specific situations, there is a lack of studies assessing the contextual circumstances of information behavior over time during a longer-lasting crisis such as the COVID-19 pandemic. Since temporal aspects are important in shaping people's information behavior (Savolainen, 2006) and provide highly relevant contextual information, this study sets out to provide a broad temporal perspective on people's information behavior. Moreover, this study seeks to illustrate the societal consequences of individual information seeking, which is particularly relevant in the context of global crises that require and foster social coherence and solidarity, such as the COVID-19 pandemic (Kieslich et al., 2023). As such, by employing a longitudinal, qualitative research design, this study sets out to analyze the variety of people's perceptions when gathering information during the COVID-19 pandemic. The study thus contributes to a more in-depth, qualitative understanding of how people perceived information gathering during the COVID-19 crisis.

2. Theoretical background

Several models have been proposed to theorize information behavior in various contexts. Thomas Wilson's information behavior model (Wilson, 1997) has been proven useful for analyzing information gathering in the health context (Zimmermann et al., 2021) and provides the theoretical basis for qualitative interview analysis. The model takes a cyclic, procedural approach: Information needs lead to active or passive information gathering. This information is processed and might lead to new needs. Wilson's model also takes an interdisciplinary perspective and combines other, established theories that might explain activating and hindering factors. First, the stress-coping theory (Folkman, 1984) establishes that people have different ways of coping with stress by either avoiding information (blunting) or seeking information (monitoring). Second, Bandura's theory of self-efficacy, which suggests that previous experiences of success or failure guide information behavior (Bandura, 1977), and third, the risk/reward theory, suggesting that

higher risk perception activates information gathering (Murray, 1991).

Wilson's model provides a theoretical starting point to interpret participants' perceptions of information seeking. Based on this, the analysis will then focus more broadly on the social and societal context in which these perceptions were made and investigate their consequences as the pandemic progressed.

3. Methods

This study is part of the pan-European Solidarity in Times of a Pandemic (SolPan) Research Commons (Zimmermann et al., 2022), a longitudinal qualitative interview study that took place in ten European countries in parallel (Wagenaar et al., 2022). For this study, only interviews held in Switzerland were analyzed. This paper follows the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist (Tong et al., 2007).

3.1. Research team and reflexivity

Interviews were conducted by three researchers (two with a PhD degree, one PhD student, all female). The author conducted 63/83 interviews. All interviewers are formally trained in qualitative research methodology and specialize in empirical bioethics. They were all employed at the Technical University of Munich, Institute of History and Ethics in Medicine when conducting the interviews.

The longitudinal analysis presented here was conducted post-hoc, after the completion of all interviews. While only one researcher (the author, a female postdoctoral researcher with rich experience in qualitative interview studies) was involved in the detailed qualitative analysis, the research results were repeatedly discussed with other consortium members and presented to a broader research audience, where feedback was sought and reflexivity facilitated. Moreover, the author was involved in several other inquiries investigating the newspaper content during the COVID-19 pandemic (Zimmermann et al., 2023b,a) and people's social media literacy (Silva et al., 2023). Conducting these research endeavors in parallel to the analysis presented here facilitated additional fields of reflexivity. The author also intensively engaged in memo writing during data analysis.

There was no established relationship with the study participants before the first interview. With some exceptions, the same researcher interviewed the same participants several times. Participants were given standardized information about the reason for conducting the study before starting the interview. Interviewers attempted to keep an open mind about the participants' views and experiences, and no characteristics were reported about the interviewer unless requested by the interviewees.

3.2. Study design

As part of the SolPan study, adult German-speaking residents of Switzerland were recruited through online advertisements on institutional websites, snowballing, and convenient sampling in April 2020. They were contacted via email or phone. Participants were recruited with attention to a variety of demographics (Table 1). A total of 83 qualitative interviews were conducted in April 2020 (T1, N = 31), October 2020 (T2, N = 25), and October 2021 (T3, N = 27). Six participants dropped out after the first interviews due to lack of time, and another two after the second interviews (one moved abroad and a second did not respond to the invite). Four more participants were purposefully recruited through snowballing in T3 to enhance the variety of perspectives and replace dropouts.

Participants were interviewed on the phone or via videochat. With few exceptions where small children or a spouse were present, the interviewer and participant were alone. Using a semi-structured interview guide, participants were asked about their lived experiences during the COVID-19 pandemic, including questions on what information

Table 1
Participant demographics.

	April 2020 (T1)		October 2020 (T2)		October 2021 (T3)	
Total	31	100.0%	25	100.0%	27	100.0%
Age						
18–30	8	25.8%	5	20.0%	5	18.5%
31–45	6	19.4%	5	20.0%	6	22.2%
46–60	7	22.6%	7	28.0%	7	25.9%
61–70	5	16.1%	4	16.0%	4	14.8%
70+	5	16.1%	4	16.0%	5	18.5%
Gender						
Female	16	51.6%	13	52.0%	14	51.9%
Male	15	48.4%	12	48.0%	13	48.1%
Other	0	0.0%	0	0.0%	0	0.0%
Household						
Single	8	25.8%	6	24.0%	7	25.9%
Couple	10	32.3%	9	36.0%	9	33.3%
Living with child (ren) under 12	3	9.7%	2	8.0%	3	11.1%
Living with child (ren) 12+	5	16.1%	5	20.0%	5	18.5%
Other	5	16.1%	3	12.0%	3	11.1%
Living area						
Big town	10	32.3%	8	32.0%	5	18.5%
Medium/small town	6	19.4%	5	20.0%	9	33.3%
Rural	15	48.4%	12	48.0%	13	48.1%
Employment status						
Employed (long-term)	13	41.9%	11	44.0%	11	40.7%
Self-employed	3	9.7%	3	12.0%	3	11.1%
Employed (short-term)	6	19.4%	4	16.0%	6	22.2%
Unemployed	1	3.2%	1	4.0%	0	0.0%
Retired	7	22.6%	6	24.0%	7	25.9%
Other	1	3.2%	0	0.0%	0	0.0%
Education						
<10 years	10	32.3%	7	28.0%	9	33.3%
10–14 years	3	9.7%	2	8.0%	3	11.1%
Higher education	18	58.1%	16	64.0%	15	55.6%
Monthly household net income (prior to COVID-19 pandemic)						
<4000 CHF	6	19.4%	5	20.0%	5	18.5%
4001–7000 CHF	9	29.0%	7	28.0%	9	33.3%
>7000 CHF	16	51.6%	13	52.0%	13	48.1%

sources they trusted and why, how they perceived the role of traditional and social media, and what information they were particularly interested in (SolPan Consortium, 2021). Interviews were recorded on a digital device, transcribed verbatim, and pseudonymized upon transcription. Occasionally, field notes were taken during and after the interviews. The duration of interviews ranged from 30 to 80 min. Because interviews were all held in the same month to ensure consistency in the pandemic situation, data saturation was assessed after data collection was completed for each round, applying a pragmatic approach of theoretical saturation (Low, 2019). Transcripts were not returned to participants. Ethics committees from the Technical University of Munich (no. 208/20 S) and the University of Basel (no. 101) approved this study.

3.3. Data analysis

First, all interview transcripts were coded based on a coding scheme developed by the SolPan Research Commons (Wagenaar et al., 2022). Four researchers and two research assistants coded the data on atlas.ti 9.0, and the coding was double-checked for consistency. The text passages tagged with the codes “Information”, “Relationship towards media”, and “Conspiracy theories” were then analyzed by the author following reflexive thematic analysis (Braun and Clarke, 2019). Inspired by Wilson’s information behavior model (Wilson, 1997), the qualitative analysis was guided by the following research question:

- (1) How did people’s information needs and perceived intensity in information gathering change during the pandemic?

- (2) What information sources did people trust and why? What was the perceived function of these sources? How did these aspects change during the pandemic?
- (3) What were the reasons for these changes? What activating mechanisms and intervening factors did people perceive related to their information behavior?
- (4) What were the consequences of people’s information gathering and processing during the pandemic? How did participants use the gathered information and what conclusions did they draw from it?

First, the author analyzed relevant text passages from each period separately and summarized findings, observations, and emerging concepts in three timepoint-specific analytical memos. These memos were then validated and interpreted with Wilson’s model of information behavior, identifying the most important themes within each element of Wilson’s model (Wilson, 1997). These emerging themes were then analyzed from a longitudinal perspective by comparing the three time-specific memos regarding changes and consistencies. Preliminary findings were shared and critically discussed with interdisciplinary researchers from the fields of public health and empirical bioethics. Because not all identified themes fit into Wilson’s model of information behavior, the original model was extended through the inductively derived theme covering the societal consequences of participants’ information behavior. Participants did not provide feedback on the findings.

4. Results

The results are structured along the research questions introduced above that were derived from Wilson’s information behavior model (Wilson, 1997): First, participants’ perceptions and changes in information needs are illustrated. Second, intervening and activating factors are outlined. A third section indicates what information sources people trusted and why. Fourth, it is outlined how participants processed and used the information gathered. The final section introduces how societal polarization was perceived as a consequence of information behavior. Fig. 1 gives an overview of the findings.

4.1. Changing information needs and intensity in information gathering

Wilson’s information behavior model suggests information needs to be highly contextual and the starting point of information gathering. The participants confirmed spiking information needs when infection numbers exploded in Italy in March 2020. Driven by this sudden proximity of the virus, by April 2020 (T1), many participants described how they constantly and voluntarily followed discussions on TV and other media. Yet, a minority of participants already in T1 mentioned being fed up with the news and stopped constantly monitoring them:

“In the beginning, I always watched *Tagesschau* [Swiss-German news on TV] and [looked at] *tagesanzeiger.ch* [online platform of a leading Swiss-German newspaper] and the FOPH [Federal Office of Public Health], but now it’s just too much for me. A lot of information, a flood of/ partly frightening or unnecessary information, and I think to myself, well, I’ve seen it, I’ve had enough.”

(participant 4, T1, female, age 18–30, with higher education and from an urban area)

By October 2020 (T2), this perceived information fatigue became more salient in the interviews. Several participants described how their initial motivation and interest decreased over time, saying that they were tired of repeatedly hearing the views of all interest parties. The issue of information fatigue continued in October 2021 (T3) in a more chronic form: “I don’t read it anymore. I’ve turned off the news app. COVID-19 pops up at the top and then I scroll down until the normal

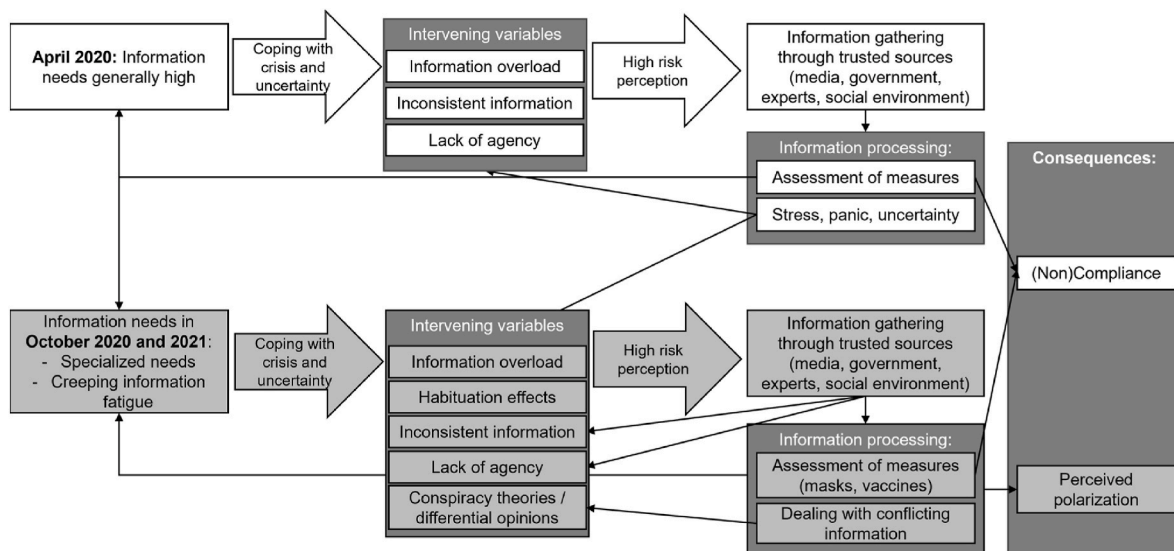


Fig. 1. Participants' information behavior during the COVID-19 pandemic based on longitudinal qualitative interviews conducted in April 2020, October 2020, and October 2021 among residents of German-speaking Switzerland. The presentation of the findings was inspired by Wilson's information behavior model (Wilson, 1997).

news appears." (participant 29, T3, male, 18–30, living alone in a rural area).

In T2 and T3, several participants perceived COVID-19 not as omnipresent as in T1 anymore. The remaining information needs mostly concerned specific situations, for example, when they were traveling or had contact with infected individuals. They also reported particular information needs around COVID-19 vaccines.

4.2. Intervening factors and activating mechanisms

Wilson's information behavior model suggests that information needs do not directly lead to information gathering and proposes that activating and intervening factors influence information gathering. The following sections summarize the mechanisms and factors identified in the interviews.

4.2.1. Activating mechanisms

Despite the highly salient perception of information fatigue, some participants remained highly motivated to continuously source for information throughout the pandemic. One participant, for example, described how the constant information sourcing gave her confidence: "So the more knowledge, the more I felt, okay, I'm getting safely through the pandemic" (participant 14, T3, female age 61–70, self-employed with higher education, lives alone in a rural area). The same participant mentioned feeling socially responsible to be informed. She repeated these motivations in the interviews in both T2 and T3, indicating stability over time:

"Precisely because, in principle, I don't just represent me as a private person. I am self-employed and responsible for around 60 students. That's why I've been paying more attention, mainly out of solidarity, so that I know as much as possible." (participant 14, T2)

Additionally, in T2 and T3, some participants described fluctuating information needs depending on the perceived urgency of the crisis. Illustrating risk perception as an intervening factor for information gathering, several participants stated how they sought more information when they saw infection rates increasing: "When a new wave hits, when the numbers are high again, then I certainly read more in the newspaper or so than when we are in a more familiar territory" (participant 22, T3, female, middle-aged nurse living in a rural area).

4.2.2. Intervening variables

First, a salient barrier to information gathering was a sense of information overload. Already in April 2020, some participants described how they started to distance themselves from too much information gathering. Several described how reading about hotspots in Bergamo or New York raised emotions that were perceived as painful, leading to avoidance in some participants. More generally, several participants mentioned that regulating their news input was an emotional coping mechanism to protect their psychological well-being.

"Just sucking in so much information with all the media and possibilities. I realize that this isn't good for me. So I limited it a bit and said, well, once a day, I look through it and listen. But not every hour." (participant 24, T1, middle-aged male living with a teenage child in a rural area)

This sense of information overload became more pronounced in T2 and T3. One participant mentioned in T3 that the vast amount of information might have led to "that many are just sick of it" (participant 3, T3, retired female living with spouse in a small town, basic education, and low income). Some participants also found the available information to be too complex:

"[...] for not well-educated people it is confusing. In my view, there is just far too much that is widely published and repeated over and over again, also with numbers and all that. Because the majority of people just don't have a clue, don't understand at all. Me neither." (participant 23, T3 female aged 70 +, living alone in a rural area, basic education, low income)

A second reason for increasing information fatigue in T2 and T3 was that some participants got used to the situation and prioritized other things in their personal lives.

"These [COVID-19] measures crept into our daily routine, they are considered normal now [...] And yes, other topics were taking precedence again. There were family issues, parenting was a major topic. And other things that concerned me more again." (participant 25, T2, female living with children under 12 in a rural area, higher education, long-term employment)

A third intervening variable that was mentioned by three participants explicitly was a perceived lack of agency that crept in as the pandemic progressed:

"I think in April, May I checked in *Blick* [Swiss-German tabloid newspaper] almost every day, what are the numbers, what are the findings? Where and how and what? And now, in the last few weeks and months, I'm not really interested in these case numbers anymore. So it's no longer so interesting to find out about COVID. It's like, yes, that really has changed. [...] [Because] it's no use. It [the virus] is just there and yeah, you can't like change anything." (participant 7, T2, young female living with partner in an urban area, higher education, high income)

A fourth intervening variable was inconsistent information. As the pandemic progressed, participants increasingly described the challenge of being confronted with different interpretations of the pandemic as portrayed by the mass media, the authorities, and experts. By October 2020, many participants negatively mentioned the politically motivated value conflicts that were portrayed in the mass media and that came with the mitigation policies against the viral spread. While they still valued factual information to assess the pandemic situation and how to react (or not), participants expressed tiredness of value debates and political lobbying and avoided such content in the media: "And the emotions, sort of figuring out who's right. Or everyone feeling like 'I'm right' or 'they're right' or 'they're totally wrong'. No, I don't need that." (participant 22, T3, female living with teenage child in rural area). Not knowing what and who to believe anymore became a major intervening variable in some participants' information behavior.

"[The biggest challenge is] to deal with all the information you have. In part, I also think it's scandalous how information is provided. Not only in Switzerland but in general. How information is exploited politically or ideologically. [...] For example, yes, America of course." (participant 9, T1, middle-aged female living with spouse, higher education, short-term employment)

Relatedly, in T3, participants increasingly talked about the difficulty of handling conspiracy theories, which were generally avoided by most participants. For example, one participant mentioned the fear of being "brainwashed" if she confronted herself too much with these conspiracy theories.

4.3. Trusted information sources

According to Wilson's information behavior model, information gathering takes place by actively or passively sourcing information. Because the information sources used are of central importance in this step, the following section will outline how participants' trusted information sources were perceived over time. Throughout all interview phases, a majority of participants stated that they relied on (1) traditional mass media, (2) information from the government, and (3) scientific experts cited in the media.

First, while traditional media, such as state-financed TV and radio and high-quality national and international newspapers were considered trustworthy sources, most participants did not consider tabloid newspapers, and social media trustworthy to get reliable information. Some young participants in their twenties reported using social media for general orientation and to connect with their friends, but not to actively seek information.

As the pandemic progressed, the reporting of traditional mass media was increasingly criticized for presenting statistics simplistically, being interested in sensational reporting, aggravating polarization, and being commercialized. This was exemplified by a young female participant who lived in an urban area and held a university degree: "I don't know, in part, they [the traditional media] pretend to be neutral, but in part, I find it very tendentious in one direction or another. And you can already tell, they have to sell the story." (participant 12, T3).

Second, most participants expressed a high trust in the national government of Switzerland. Few participants expressed a general distrust that information was not portrayed appropriately to the public

and one explained that the pandemic led him to distrust the political establishment.

"[...] the one-sidedness and politicization of the issue has, I think, already had the effect of lowering my trust in political institutions. [...] I fear that people are making a lot of money. [...] And there's no doubt that lobbying in the medical and pharmaceutical sectors is very strong these days." (participant 35, T3, middle-aged male living with small children in a small town, higher education, long-term employment)

Several participants referred to inconsistent governmental communication that led to irritation, particularly regarding its communication concerning vaccination and face masks.

Experts were the third entity that was mentioned as a particularly trustworthy information source. Participants usually meant specialists from epidemiology or virology working at universities or the national health authorities when referring to experts. But people with other scientific backgrounds, too, were perceived as trustworthy and helpful in making an informed assessment, particularly when they came from participants' direct social environment.

"My husband has some background knowledge and so does [my daughter]. We just sensed that the masks were useful. Even though they [the health authorities] said in the beginning that masks were useless. Because they simply didn't have enough. So we interpreted this accordingly. And our social environment, they are people who are mostly scientifically educated. And all of them took this [mask-wearing] very seriously right from the start." (participant 9, T2, female living with spouse in a small town, higher education, short-term employment)

As the pandemic progressed, several participants stressed that what independent experts had to say was the only information they were still interested in, whereas political debates in television or newspapers were avoided.

"Yes, I simply stopped reading the newspaper [when it became too much for me]. And I got a lot of information from discussion programs with specialists or experts. I was very interested in that. And I had the feeling that I could profit the most from that. Because then you have a certain knowledge. Although they didn't always agree. But who is ever in agreement in that regard? There have always been new findings." (participant 3, T3, retired female living with spouse in small town, basic education, low income)

4.4. Processing and use of information

According to Wilson's information behavior model, the information gathered through information sources is processed and used and might lead to new information needs. The following sections will outline participants' perceptions of how they processed and used information.

4.4.1. Assessment of measures

First, participants described how they reasoned on whether to comply with mitigation policies. While in T1, these measures considered mostly stay-at-home orders and social distancing, in T2, participants were most concerned with the usefulness of face masks and became more concerned regarding whether and what measures were proportionate more generally. T3 was mostly about getting vaccinated or not.

"I know that masks can partially prevent droplet infections. And since COVID-19 is predominantly a droplet infection. I don't know, with the aerosols, they also play a role. But I don't think it plays such a big role. That's why I think it makes sense to do that [wear a mask]." (participant 2, T2, female living with teenage children in a rural area, higher education, long-term employment)

4.4.2. Stress, panic, and uncertainty

In T3, two participants described retrospectively how information processing led to stress and panic:

"A year ago, you had to be careful not to panic right away. New things came suddenly and changed all the time. And every week there were new rules and then they said that it was really bad again. And then it can easily happen that you panic again, that you can't do anything. And then you just have to keep a cool head. I think I've managed that quite well by now. That I don't just panic and get scared." (*participant 33, T3, young female living in a small town, short-term employment, high school education*)

In that regard, many participants reported strategies to deal with such stress and panic, for instance by restraining their information input (see above) and only using selected information sources.

Additionally, two participants described how information from the media increased uncertainty, particularly regarding vaccination. One of them described how information about vaccines in the media confused him and made him hesitant about getting vaccinated:

"That's when I became perceptive, you know. They do two vaccinations and they already have the third one ready. And so much is promised, they say that the safety is so-and-so much percent, and then the Israel case came, where the population was virtually fully vaccinated. [...] [But yet] there was another hotspot [in Israel]. And that made me feel very insecure again. [...] And maybe, well, I'm probably on the safe side [not to get vaccinated], seen from my point of view. But I'm very, very uncertain about that [whether to get vaccinated]." (*participant 24, T3, middle-aged male living with teenage children in rural area, basic education*)

4.4.3. Dealing with conflicting information

Participants brought up the challenge of seemingly conflicting information and presented different strategies for how to handle this when processing information. First, some participants actively decided to trust in these times of crisis and uncertainty. They wouldn't let any other option get in the way of this decision.

"And I trust them [the authorities] now and I have a rather critical neighbor [...] And I realize that I don't like to discuss this at all. I trust. I said, hey, we're not in South America, where we somehow have dictatorial, weird and so many lobby things. I really trust the authorities and all the scientific advisors they have." (*participant 22, T1, middle-aged female living with teenage children in rural area, basic education, long-term employment*)

Second, participants reported to consult more than one information source to assess conflicting information and believed what was the common ground between them. Because this was perceived as a complex procedure, several participants mentioned that they wished to have experts in their social environment whom they could ask for advice or who would do this assessment for them. This, again, points to the trustworthiness participants ascribe to experts.

4.5. Societal polarization as a consequence of information behavior

As a consequence of information overload, controversial public debates about vaccines and the use of health certificates, conflicting information from experts and authorities, and salient discussions about conspiracy theories, participants in T3 reported about a growing societal polarization:

There is a lot of debate in the media right now. The COVID topic is of course huge, there is a lot of talk about it. And as I perceive it, it's already very divided. There are really two opinions. Opponents or supporters of vaccination. They are very divided opinions. [...] [Also] on Instagram, Facebook. It's extremely divided. You have

people who are completely against and people who are completely in favor. (*participant 7, T3, young female living in urban area, higher education, high income, long-term employment*)

Additionally, a growing number of participants also described how they became more selective with whom they discussed the pandemic in their social environment. As the pandemic progressed, participants increasingly used polarizing language. For example, several participants reported becoming increasingly critical and "angry" (*participant 30, T3*) with people telling them conspiracy theories, demonstrating against COVID-19 policies, and refusing to wear masks or get vaccinated.

"With people like that, it's not possible to talk anymore. I have to make sure that I avoid that. Because that really makes me [angry]. [...] There are also moderates with whom you can still talk about it a bit. But I notice that they simply have different views and you can't bring them together. For some people, the earth is not round but still a disc." (*participant 30, T3, male living with teenage child in rural area, basic education, long-term employment*)

Other participants also referred to what they read and heard in the media about anti-COVID-19 demonstrations, noncompliant behavior, and political activities from anti-covid movements. Consequently, many participants distanced themselves distinctively from conspiracy theorists, even though some expressed understanding if people they knew did not support certain COVID-19 policies from the government. One participant, while condemning conspiracy theories, acknowledged that many things were still unknown about COVID-19 so it was not possible to distinguish ultimately who was right and who was wrong. Another participant argued that in a democracy, it should always be possible to have differing opinions. Many perceived the media – both traditional journalistic media and social media – as a driving force to portray the picture of a polarized society:

"And the stress people have. I don't know, because they consume more media, that they get the impression that much more is happening. And the aggressiveness is so big, I feel. I hope that it will get better again. People start shouting at each other or, yes, go on the warpath or even, yes, kill people for some trivial reason. Of course, this has also happened before. But I do feel that the aggressiveness has increased with the stress people have." (*participant 9, T3, middle-aged female living with spouse in a small town, higher education*)

One unvaccinated participant who was generally critical of how the government and the media handled the COVID-19 pandemic argued that the certificate supported the social stratification of people into vaccinated and unvaccinated in many social gatherings, leading to the social exclusion of unvaccinated people and hindering communication between vaccinated and unvaccinated people. Few other participants who sympathized with conspiracy theories or were uncertain about their legitimacy also stressed that they did not want to be pushed into that corner – possibly out of fear of being stigmatized.

"I don't want to be a denier, for God's sake. Or I don't know. Maybe one just goes with the flow to not be an outsider, that one doesn't get into problems, but I still don't know anyone in my family or circle of friends who got sick. [...] I think maybe it's all a bit overplayed. That's what I mean." (*participant 21, T2, middle-aged male living with spouse in urban area, self-employed, basic education*)

In summary, the findings indicate how and why people's information behavior – as modeled by Wilson's information behavior model – changed over time during the COVID-19 pandemic. They also show how people's information behavior is linked to a growing perception of societal polarization in the later stages of the pandemic.

5. Discussion

This paper presents an in-depth, longitudinal assessment of German-

speaking residents of Switzerland's perceptions of information gathering during the COVID-19 pandemic. It provides qualitative evidence on how the social and societal context in which information behavior took place shaped participants' information behavior. The findings are in line with and expand qualitative inquiries illustrating a continuum between active information seeking and a more passive reliance on the social environment (Link et al., 2022). The findings also align well with Wilson's model of information behavior (Wilson, 1997), which served as a theoretical framework for the qualitative analysis: As proposed by stress/coping theory (Lazarus and Folkman, 1984; cf. Wilson, 1997), the information needs participants reported were motivated by a wish of gaining agency and certainty in the context of a major, global health crisis. Some participants were discouraged from gathering information when they felt a lack of agency, were overwhelmed by the complexity and vast amount of information, or discovered the inherent uncertainty of the crisis.

The findings underline the importance of trusted, reliable, and accessible information sources in the form of well-funded, high-quality journalism that can operate beyond political lobbyism and economization (Zimmermann et al., 2023a). In line with other studies from the German-speaking realm, traditional journalism gained importance as trustworthy information sources particularly at the beginning of the pandemic (Lühnen et al., 2023; Schäfer et al., 2021). The findings are also in line with studies reporting generally high levels of trust towards the national government during the COVID-19 pandemic, with variations related to the late pandemic policy response in October 2020 (Sotomo, 2021). The findings further support the relatively weak importance of social media as a trustworthy information source, in line with a survey study from Germany (Lühnen et al., 2023). Other studies focusing on different cultural contexts or the younger generation, by contrast, find social media an important information source (Schäfer et al., 2021; J. Yang, 2022), reflecting a potential lack of saturation in our data set (see also "Strength and limitations" below).

The findings also illustrate the important role participants assigned to scientific experts to navigate uncertainty by providing factual knowledge, which has been shown in two studies from Ireland and Italy, too (Falcone and Sapienza, 2020). Yet, individual experts can hardly be held solely responsible for meeting these expectations, particularly because they are usually neither trained nor employed to fill this role. Instead, training individual scientists in public communication as well as an institutionalized form of scientific policy advice that takes justice to the multidisciplinary nature of the scientific community is important. In Switzerland, the latter aspect was covered by the ad-hoc formation of the Swiss National COVID-19 Science Task Force but their voice was not consistently heard by policymakers (Hadorn et al., 2022; Sager and Mavrot, 2020). This study's findings shed light on people's expectations towards these scientific advisory boards and suggest that their role towards the general public should be clarified.

Importantly, the findings further suggest a direct link between people's information behavior and the formation of political attitudes, which resulted in a growing societal polarization. These societal consequences of people's information behavior go beyond Wilson's model of information behavior. The ABC model (Eagly and Chaiken, 1998), an established theory from the field of psychology to assess the attitudes of people, delivers a theory-founded explanation for the finding that

participants started forming rather stable and pronounced attitudes towards the socio-political handling of the pandemic. ABC stands for affective, behavioral, and cognitive components that need to be addressed before someone can form an attitude on an issue (see Fig. 2 for an overview). The cognitive component of information gathering represents the reported interest of participants to gather factual information about the COVID-19 pandemic: the nature of the virus, how the pandemic progressed, and how policymakers and societies in Switzerland and around the world dealt with the pandemic. The findings further suggest behavioral consequences as a result of information gathering. This relates to protective behavior and compliance with pandemic policies (see also Lee et al., 2020; Zhao and Tsang, 2022) but also to practices of who participants discussed the pandemic with and how this shaped their social environment. A final function of information gathering was to make sense and getting to grips with the COVID-19 pandemic as a multi-faceted, complex, global crisis (affective component). Participants offered interpretations and expectations on how the pandemic would progress and what they felt was appropriate based on information they gathered from traditional journalistic media and their social environment. When processing information, participants became aware of differing views and opinions. This increasing awareness of differing views and opinions contributed to polarization, stereotypes and prejudice, and a growing segmentation when sourcing information.

Such polarization jeopardizes social solidarity, which has been found crucial to handling the pandemic effectively (Jones and Sharma, 2021). As the pandemic progressed, people's solidarity became more focused on their closer network and friends (Kieslich et al., 2023), rendering institutionalized forms of solidarity (e.g., the redistribution of financial resources to those most affected by the pandemic) even more important. The constant call on solidarity by policymakers through the mass media to motivate people to adhere to measures (Zimmermann et al., 2023b) stands in contrast to – or might even have aggravated – this perceived and lived polarization.

Consequently, authorities should be careful when communicating to the public not to aggravate polarization by attributing blame to specific population groups – for example, "the unvaccinated" (Graso et al., 2023; Stinnett et al., 2023). Using inclusive language and identifying and meeting (valid) concerns of those hesitant to be vaccinated might not only help mitigate societal polarization, it might even lead to higher vaccination uptake since inadequate communication has been suggested to contribute to vaccine hesitancy (MacDonald and the SAGE Working Group on Vaccine Hesitancy, 2015).

5.1. Strengths and limitations

This qualitative study aimed to point out people's variety of perspectives but cannot give quantitative, representative insights into the relative importance of each factor. The participants represent a cross-sectional sample of the population living in German-speaking Switzerland, as indicated through the variety of demographics (Table 1). Yet, the sample indicates some gaps in the variety of perspectives that should be addressed in more targeted future research endeavors. In particular, socially disadvantaged people (for example, refugees, prisoners, etc.) are not represented. Also, minority views such as conspiracy theorists, anti-vaxxers or COVID deniers were represented

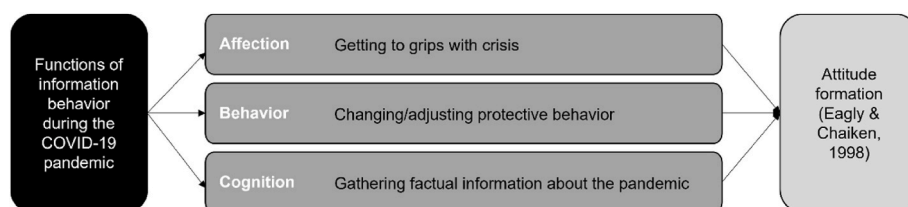


Fig. 2. Mapping of the ABC model of attitude formation (Eagly and Chaiken, 1998) to this study's findings.

by only two participants, indicating a lack of theoretical saturation in this domain. Instead, people with higher education, stable jobs, and higher incomes were overrepresented in the final sample.

Moreover, it should be noted that French- and Italian-speaking residents of Switzerland might have provided additional perspectives. As such, the socio-cultural context of the empirical evidence is limited to German-speaking Switzerland. Still, the findings align well with international literature, suggesting a broader international relevance of the findings at least in Western democratic societies. Studies in other world regions are needed to address the implications of findings in broader cultural settings.

Additionally, telephone interviews may represent a challenge to quickly establish a trusted, deliberative atmosphere and in-person interviews might have led some participants to share more detailed thoughts. This aspect was mitigated when the same researcher interviewed the same participants whenever possible. While visual cues were less prevalent, the interviewers focused more on auditory aspects and prompted participants in the case of specific signs of hesitation, strong emotions, or insecurity. Overall, the limited evidence available suggests little difference in quality between telephone and in-person interviews (Block and Erskine, 2012).

6. Conclusions

By gathering, selecting, and avoiding information, participants attempted to get to grips with the COVID-19 crisis. Their information needs focused on the wish of gaining agency and certainty in the context of a major, global health crisis. Many participants formed rather stable attitudes over time. This led to a growing polarization and societal segmentation as the pandemic progressed: When gathering information, participants became aware of differing views and opinions, and reactions of those became stronger the more pronounced their own assessment became. It is important to mitigate this polarization to preserve social solidarity and avoid social uprising and obstruction of democracy. Strengthening high-quality journalism, clarifying the role of scientific experts towards the public, avoiding polarizing political communication, and fighting the infodemic are measures to meet this information-gathering evoked polarization.

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CRedit authorship contribution statement

Bettina M. Zimmermann: Conceptualization, Formal analysis, Funding acquisition, Methodology, Project administration, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

Data availability

The authors do not have permission to share data.

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