

Caring for an Information Crisis: Civil Society and ICTs against Inequalities during the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic intensified existing inequalities among vulnerable populations, particularly where multiple factors, such as gender, age, nationality, and socioeconomic status, intersected. For these groups, one critical yet underexplored dimension of the crisis was informational: many faced uncertainty in accessing essential services and navigating daily life. Public policies often failed to address these challenges adequately, leaving civil society actors (CSAs), including NGOs, associations, and informal groups, to fill the gap, frequently through the use of information and communication technologies (ICTs). This article investigates how CSAs across Europe employed ICTs to support vulnerable groups during the pandemic. Drawing on data from nearly 300 initiatives mapped by the EU-funded RESISTIRÉ project, we apply the lens of care and telecare practices from Science and Technology Studies (STS) to analyse these responses. Our findings, based on a reflexive thematic analysis, suggest a diverse range of sociotechnical assemblages, from helplines and educational platforms to lobbying campaigns and mutual aid networks. ICTs were used not only to deliver remote health-related support but also to address emotional, educational, and structural needs. These practices varied in their level of user involvement and often relied on familiar technologies to reach digitally excluded populations. By highlighting bottom-up telecare practices, this study contributes to expanding the scope of crisis informatics and telecare research towards intersectional “matters of care” concerning vulnerable populations, emphasizing the role of CSAs and ICTs in shaping inclusive responses to information uncertainty during emergencies.

Keywords

care; telecare; ICTs; crisis; commons; intersectionality.

1. Introduction

The COVID-19 pandemic has exacerbated existing inequalities among vulnerable populations, particularly in relation to gender, age, nationality, socioeconomic status, ethnicity, and other factors (Fisher and Ryan 2021; Razavi et al. 2022). These inequalities have been

particularly severe when multiple of these factors intersected (Lokot and Avakyan 2020; Maestripieri 2021) and were amplified by the “information crisis” (Xie et al. 2020, 1420).

This information crisis resulted in situations where it suddenly became unclear how to carry out everyday activities or access essential services, a challenge that was even more pronounced for the most vulnerable populations. For example, elderly individuals were left isolated without guidance on how to protect themselves; victims of gender-based violence were confined at home with their perpetrators, lacking the tools or channels to seek help and support; and people with disabilities faced significant obstacles in accessing public services or even purchasing food. Public policies designed to mitigate the effects of the crisis often failed to consider the needs of these vulnerable groups, offering few solutions to navigate an already difficult situation (Cibin 2023).

Various studies highlighted how these situations of uncertainty have been mitigated through activities carried out by civil society actors (hereafter referred to as CSAs, e.g., NGOs, associations, individuals) (e.g., Andersen et al. 2020; Mao et al. 2021). These activities often involved the use of information and communication technologies (ICTs) (e.g., Carlsen et al. 2021; Parolin and Pellegrinelli 2022) such as mutual aid platforms or simple telephone chains of support for older adults. The Science and Technology Studies (STS) debate around the use of ICTs for care practices is well developed, mostly around the debate on telecare practices (for instance, Pols 2012), but also in the area of crisis informatics and emergency response (for instance, Palen and Hughes 2018). However, with few known exceptions (for instance, Sciannamblo et al. 2021), these studies have primarily focused on the use of ICTs by professionals in the medical and disability sectors, or on actions undertaken to provide support to the general population following critical events. These studies rarely examine how such technologies have been employed by civil society to support gender and other intersectional vulnerabilities in navigating uncertainty.

This article contributes to bridging this gap by providing empirical evidence of the various ways in which ICTs were used by CSAs during the pandemic to support vulnerable populations. To this goal, these activities, and not only those in the medical sector, are examined through the lenses of care and telecare practices, concepts that have gained recognition and legitimacy within STS (Lindén and Lydahl 2021), as they aim to “maintain, continue, and repair our ‘world’ so that we can live in it as well as possible” (Tronto and Fisher 1990, 34). An overview is provided of the main challenges that ICTs helped to identify, as well as the care practices they supported and shaped in responding to the information crisis among vulnerable people. To this end, the research is guided by the following questions, inspired by Pols (2010): How do ICT systems support telecare practices for vulnerable people in situations of information uncertainty? How do ICTs shape the ways vulnerable people engage in these telecare practices, across varying degrees of participation?

To answer these questions, the analysis focuses on the mapping conducted within RESISTIRÉ, a COVID-19-focused, EU-funded research project aimed at analysing the impact of the pandemic and related policies on gender inequalities and other axes of inequality. A reflexive thematic analysis (Braun and Clarke 2019) was conducted on the descriptions and background information of nearly 300 initiatives led by CSAs across 30 European countries. These initiatives aimed to mitigate gender and other inequalities during the pandemic. They involved informal groups, non-governmental organisations (NGOs), advocacy groups, religious organisations, as well as online communities.

Through the observation of bottom-up telecare practices targeting vulnerable groups, it was found that ICTs can be used not only to provide remote support for health-related concerns, but also to address emotional, educational/work-related, and political/structural challenges. These practices involve users at varying levels of participation. Our findings contribute to advancing the inclusion of the most disadvantaged populations in research on the use of ICTs in delivering care and responding to crisis situations (Palen and Hughes 2018).

2. Theoretical Foundations and Analytical Frame

2.1 Pandemic and Inequalities

Within an intersectional framework (Verloo 2013), this article defines vulnerable groups (also referred to as disadvantaged groups) as women and persons belonging, or perceived to belong, to groups “that experience a higher risk of poverty, social exclusion, discrimination and violence than the general population, including, but not limited to, ethnic minorities, migrants, people with disabilities, isolated elderly people and children” (EIGE 2025). The adverse socioeconomic consequences of the pandemic and the related information crisis have affected people belonging to these vulnerable groups in different ways.

The closure of kindergartens, schools, and care centres for the elderly and disabled shifted much of the care burden onto families — especially women (Strid et al. 2022). The crisis further strained healthcare systems already weakened by years of budget cuts (Faggioni et al. 2021), disproportionately affecting women’s access to services such as reproductive health-care, cancer screenings, and abortion (Wenham et al. 2020).

Restrictions on movement during the pandemic led to a rise in domestic and gender-based violence, particularly affecting women, children, and LGBTQI individuals (Adamson et al. 2022; Dlamini 2021). Transgender people faced increased barriers to accessing hormone therapy (Dasgupta et al. 2020). The pandemic further exacerbated discrimination against persons with disabilities (Yates and Dickinson 2021) and made it harder to meet the basic needs of older adults (Armitage and Nellums 2020).

Lockdown policies intensified existing poverty, invisibility and exclusion, especially among single women, immigrants, ethnic minorities, low-skilled workers, and those in rural areas (Milan et al. 2021; Rothwell and Smith 2021). These effects were most severe at the intersections of these categories (Lokot and Avakyan 2020; Maestripieri 2021). Migrants and asylum seekers faced language and digital barriers that limited access to information and increased their exposure to discrimination and stigmatisation (Donà 2021). Meanwhile, the shift to online education widened the learning gap for children in vulnerable situations (Zheng and Walsham 2021).

All the situations discussed above share a common feature: they occurred in an unprecedented context marked by high uncertainty (Dunwoody 2020) and an information crisis (Xie et al. 2020). This context brought significant changes in how people processed information during lockdowns, while the lack of accessible communication infrastructures further hindered effective information dissemination, particularly for vulnerable groups (*ibid.*).

In the following sections, the analysis examines how civil society largely took the lead in addressing these challenges and how ICTs played a fundamental role in their caring practices.

2.2 Care, ICTs and the Management of Uncertainty in STS

The role of ICTs in crisis response is well established, with research showing that they help individuals assess situations, support official messaging, and coordinate aid (for instance, Palen and Hughes 2018). Even during the pandemic, although the sudden digitalisation of services created several challenges for vulnerable populations (Cibin 2023), ICTs offered this kind of critical opportunities by enabling mass participation and rapid responses at scale (Yang et al. 2020). These included initiatives in humanitarian collaboration, civic engagement, and broader practices of solidarity (e.g., Duguay et al. 2023; Parolin and Pellegrinelli 2022; Valle 2020), in which care ethics played a fundamental role.

Care ethics has its roots in feminism. Among the foundational works on care theory is that of Joan C. Tronto, who emphasises our collective responsibility for care and argues that care cannot be separated from addressing privileges related to gender, ethnicity, religion, and class (for instance, Parra Jounou and Tronto 2024). Within STS, reflection on care has grown, rooted in feminist and material-semiotic traditions (Lindén and Lydahl 2021). Mol and colleagues (2011), for instance, shifted attention from care as a general domain to the practices through which it is enacted, asking, “How is care being done?” This perspective opened up analysis beyond the healthcare sphere and highlighted the importance of considering the role of care receivers. Puig de la Bellacasa (2017) shifts the focus towards *matters of care* and *neglected things*, arguing that care should guide scientific and technological practices. In doing so, she calls for a form of responsibility that acknowledges power, affect, and materiality, and attends to entities, practices, and relationships that are often excluded from dominant technoscientific narratives.

STS has also drawn attention to the role of human artefacts and technologies in caring practices (for instance, Mol et al. 2010). One primary domain in which care practices and ICTs have been jointly examined is that of telecare (Pols 2012), where technical devices and professional practices are used to support chronically ill or older people living at home, including their physical and emotional capacities. The goal of telecare is to provide *care at a distance* (*ibid.*). These studies underscore the impossibility of making general judgements about the value of telecare, highlighting the need to understand its complexity by considering the diversity of patients, devices, scripts, users, and practices involved in various situations (*ibid.*). Topics include devices and applications that monitor various vital signs, such as heart-related signals (Oudshoorn 2012; Pols 2010), devices for video-based lung disease rehabilitation (Bødker and Nielsen 2015), webcams used for online consultations with oncology patients (van Hout et al. 2015), and technologies supporting online visits and safety monitoring for older people (e.g., Percival and Hanson 2006; Sánchez-Criado et al. 2014). Other examples include phone or video consultations for opioid use disorder (Caulfield 2021) and assistive technologies for people with dementia (Lariviere et al. 2021).

These studies adopt the mainstream definition of telecare, focusing primarily on professional, top-down healthcare practices. In the next section, we turn to examples where ICTs have been used for remote care from the bottom-up and with different objectives.

Therefore, from this point onwards, the term telecare is used to refer to all forms of care activities – beyond those limited to the healthcare sector or conducted by professionals – that are carried out through the use of ICTs.

2.3 Bottom-up Telecare Practices

As previously mentioned, ICTs can be used for remote care activities that extend beyond the healthcare field and institutional contexts. Ahlin and colleagues (2024) explore how migrant nurses form “transnational care collectives,” assemblages of everyday digital technologies (for instance, telephones) and kin or non-kin members, to care for their parents remotely. They emphasise the fundamental role of frequent communication, emotional engagement, technological maintenance, and the integration of digital and in-person care within these collectives. Similarly, Krüger and colleagues (2021) emphasise that technologies designed to support migrants in settling into their host countries must value existing care practices within the ecosystem of actors they already engage with, balancing innovation with maintainability.

Sciannamblo and colleagues (2021) apply the concepts of caring and commoning from feminist technoscience and political economy in codesigning a cooperative digital platform for precarious European workers. Through this approach, the platform helps make the (re) productive, affective, and political dimensions of care visible. Along similar lines, Parolin and Pellegrinelli (2022) describe how, during the pandemic, a self-organised group of citizens used social media to coordinate mutual aid, such as grocery and medicine delivery. They emphasise that social media’s role in these efforts was not fixed but adapted over time in response to shifts within the broader network of human and non-human actors involved.

All these care practices respond to the uncertainty that arises from unforeseen events in people’s lives (Jaakola 2023; López et al. 2015) and propose solutions in which “bodies, knowledge, and technology are attuned to one another in a way that takes the unaccountable into account, that is attentive to the indeterminate” (Nielsen et al. 2023, 863). Against this backdrop, this article takes a step further by proposing a systematic analysis of care practices in which CSAs and ICTs have collaborated from the bottom up. Using an intersectional lens, the analysis highlights issues affecting the most vulnerable groups, responding to calls for more responsible research that prioritises *matters of care* (Puig de la Bellacasa 2017), while *staying with the trouble* (Haraway 2016), that is, committing to work towards change within the complexity of the present through practices of care and connection. Before doing so, however, the following section outlines the key methodological elements of this research.

3. Research Design and Methodological Framework

3.1 The RESISTIRÉ Project

The article is part of the RESISTIRÉ project (Belloso and Strid 2023), which received funding from the European Union’s HORIZON 2020 programme. RESISTIRÉ aimed to investigate the impact of the COVID-19 pandemic and related policies on behavioural, social,

and economic disparities across 30 European countries. It also sought to propose solutions to address these inequalities. The project involved collecting and evaluating both qualitative and quantitative data, as well as mapping relevant policies and civil society actors’ (CSAs) initiatives. RESISTIRÉ was based on an intersectional approach (Verloo 2013), focusing on gender-related inequalities in various domains, such as the gender pay gap, the gender care gap, gender-based violence, etc. (see Figure 1). These were analysed alongside different vulnerability grounds such as social class, age, disability, nationality, ethnicity, religion, sexual orientation, and gender identity. The project spanned 30 months, from April 2021 to September 2023. The RESISTIRÉ project involved a consortium of eleven partners, mainly composed of social scientists specialising in gender and feminist studies. In RESISTIRÉ, I led the work package focused on mapping policies and CSA initiatives. With the support of my colleagues at *NKC – gender a věda* and other members of the international consortium, I designed the data collection tools, specifically the grids used by national researchers to document CSA initiatives present in their countries (a copy of the grid is available in the Appendix 3 of Cibin and colleagues (2021)), and I conducted the subsequent data analysis.

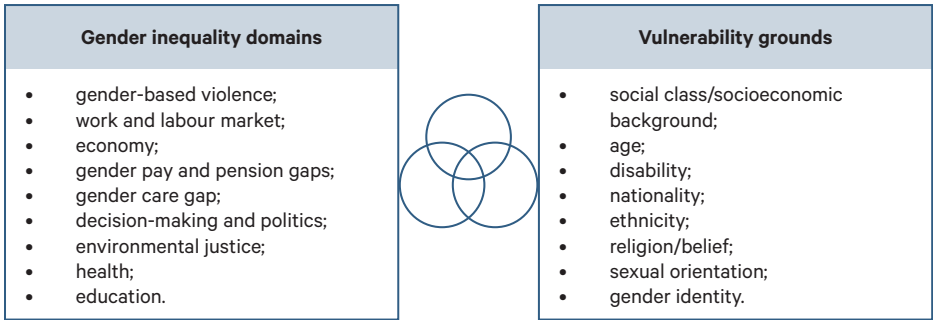


Figure 1.

Representation of the intersection between inequality domains and vulnerability grounds used in the RESISTIRÉ project to identify the study units.

3.2 Data and Analysis

The empirical data examined in this study primarily originates from a specific project activity that involved the mapping and analysis of initiatives led by CSAs to mitigate gender and other inequalities during the pandemic. These efforts involved informal groups, non-governmental organisations (NGOs), advocacy groups, religious organisations, as well as online communities. Data collection was carried out by a team of 30 national researchers (the names of the national researchers can be found in the *Acknowledgements* of Cibin and Linková (2023)). These researchers were tasked with identifying information within their respective countries concerning CSA initiatives related to the pandemic and vulnerable groups.

This information was subsequently recorded using the standardised grid developed by the author and the work package team. The grid was designed to capture data such as the type of inequality addressed, the underlying rationale, the main activities undertaken, the actors involved, and other relevant details. The 30 national researchers were not involved in the data analysis, except for occasional requests to clarify the data they had provided.

A total of 277 initiatives were mapped and described using the grids. Previous analysis conducted outside the scope of this article (Cibin and Linková 2023) involved the coding and examination of data in line with the overarching goals of the RESISTIRÉ project, which were to assess how these initiatives addressed inequalities across various domains and vulnerability grounds, as previously outlined. During this process, the significant role played by information and communication technologies (ICTs) became evident, leading to the decision to conduct a secondary analysis of the data, which forms the central focus of this article. The data were once again coded and analysed to specifically observe the interactions between CSAs, vulnerable populations, and ICTs aimed at addressing a variety of challenges, and the findings will be presented in the next section.

For the purposes of this article, the grids were analysed through reflexive thematic analysis (Braun and Clarke 2019). The analysis combined both inductive and deductive approaches. The inductive analysis aimed to identify the main types of support offered by these practices when ICTs were involved, while the deductive analysis examined the level of user engagement in these ICT-mediated communicative interactions to better understand the role of vulnerable individuals within these practices. To this end, the deductive analysis draws on the three levels of involvement between audiences and ICTs: access, interaction, and participation, as outlined in Carpentier's AIP model (Carpentier 2015). This model is widely recognised in Media Studies as a conceptual framework for examining the gradations of audience engagement with ICTs. Following the model, three levels were distinguished among: *access*, where recipients receive information in a top-down manner; *interaction*, where there is a bidirectional socio-communicative interaction that is guided by the service providers; and *participation*, where recipients actively shape and co-determine the socio-communicative process. These levels will be useful in the *Discussion* section to reflect on the varying degrees of ICT-supported involvement of vulnerable individuals within telecare practices.

4. Empirical Analysis and Findings

This section presents the themes describing the main types of sociotechnical assemblages that civil society actors (CSAs), vulnerable people and ICTs formed to carry out telecare practices aimed at mitigating inequalities during the pandemic. The analysis enabled the positioning of these different assemblages within two groups. At one end, telecare practices are primarily focused on sharing information and knowledge; at the other, practices extend further by fostering relationships among the actors involved (Figure 2). Empirical evidence is provided through the description of specific cases, grouped according to these two dimensions and drawn from different European countries.

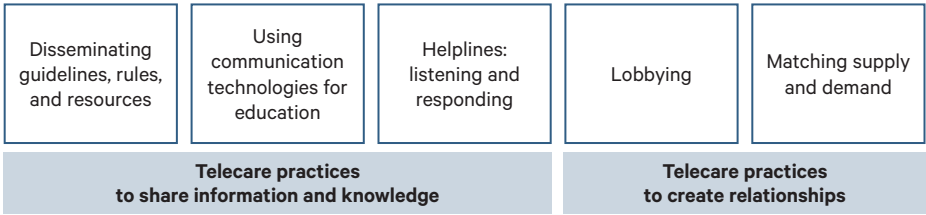


Figure 2.
Categorisation of telecare practices involving CSAs and ICTs to support vulnerable people during the pandemic.

4.1 Telecare Practices to Share Information and Knowledge

4.1.1 Disseminating Guidelines, Rules, and Resources

This theme focuses on practices in which CSAs leveraged ICTs to disseminate essential, top-down information to vulnerable groups, information that was often unavailable or inaccessible through institutional channels. These efforts primarily relied on one-way communication. CSAs supported vulnerable populations by creating websites and platforms that provided a wide range of resources: guidance on navigating the pandemic, information on reproductive and birth rights, services for survivors of gender-based violence (GBV), support for artists, students, and workers, and even recommendations for men with a history of violence.

In Slovakia, the NGO Female in Circles addressed the lack of information on reproductive healthcare for pregnant women and newborns by creating a website. This platform offered summaries of international recommendations for reproductive health during the pandemic, along with forms to file complaints with medical facilities or with the Ombudsperson.

In Sweden, the Swedish Breast Cancer Association sought to raise awareness about the importance of breast cancer prevention, especially after mammography services were suspended during the pandemic, by promoting an app they had developed for this purpose.

In Austria, the Chamber of Labour (*Arbeiterkammer*, AK) and the Austrian Trade Union Federation (*Österreichischer Gewerkschaftsbund*, ÖGB) launched a multilingual website. It provided employees with FAQs on labour law, part-time work, salaries, telework, workplace safety, infection and quarantine protocols, and included contact information for experts offering further support. In Vienna, the feminist organisation *Maiz* produced a series of videos in six languages to inform (migrant) sex workers about their eligibility for financial assistance from a hardship fund for the self-employed.

In Poland, the national NGO *Kampania Przeciw Homofobii* (Campaign Against Homophobia) partnered with Facebook to support young LGBTQI+ individuals whose mental health was severely affected by isolation, often endured in homo- or transphobic environments. The initiative featured videos that shared personal stories from people of diverse gender identities and sexual orientations, psychological advice, and contact details for support services.

Regarding gender-based violence, in addition to the helplines described below, CSAs also supported victims by providing information through dedicated websites. These included,

for example, lists of key contacts for professionals and services, as well as testimonies from women who had managed to escape domestic violence. In Slovenia, the Association for Non-violent Communication broadened the scope of its support by launching a website that also featured recommendations for men who had perpetrated violence.

4.1.2 Using Communication Technologies for Education

The second theme encompasses activities in which CSAs used digital communication platforms and channels to offer various types of educational courses. These initiatives typically took place in dialogic settings, albeit led by experts.

In Lithuania, for example, the art agency Artspace organised online classes for migrants and foreigners on topics such as language, IT education, healthcare, and leisure activities for youth.

In Italy, an NGO advocating for the rights of children and families involved in adoption and foster care provided a range of online resources from March 2020 onwards. These included short videos on playing games with children, videos about children's rights at school, interviews with experts in adoption and foster care, and online meetings to support adoptive families or those awaiting adoption.

In Croatia, the NGO RODA – Parents in Action offered a series of e-courses for pregnant women and families, specifically targeting vulnerable groups who lacked support during the pandemic due to service restrictions and reductions.

There are several cases in which these organisations, sometimes in collaboration with for-profit entities, also distributed technological devices to both young and elderly individuals who lacked access and were therefore isolated during home schooling and lockdown periods. These initiatives were often followed by study support activities and digital literacy programs. In Belgium, for instance, a philanthropic foundation (the Roi Baudouin Foundation), together with a cooperative insurance company (P&V), allocated one million euros to purchase laptops for vulnerable youth and to provide training on how to use them.

4.1.3 Helplines: Listening and Responding

The third theme concerns practices aimed at listening to people's needs and providing appropriate responses through the creation or strengthening of remote consultation and support services. These cases illustrate how ICTs enabled contact between users (those seeking support) and service providers (organisations offering assistance). Communication was thus two-way but primarily structured around a demand-response dynamic. The main target groups for these services were women who were victims or potential victims of violence, as well as individuals in need of psychological support. In many instances, the telephone remained the most commonly used channel for this type of communication.

In Germany, the association *Frauennotruf Main e.V.* launched an awareness campaign during the first wave of the pandemic to encourage women experiencing sexualised violence to reach out via their helpline. Lockdown policies had intensified the isolation of victims, and the helpline became a crucial channel for supporting them in reporting perpetrators and accessing professional assistance, such as legal and psychological services.

Helplines were not limited to supporting victims of violence. In Denmark, for example, the organization Mother's Aid Denmark opened a dedicated phone line to offer free counselling and support to families with children and pregnant women. These groups faced significant financial, emotional, and physical stress due to the pandemic, and the initiative aimed to provide relief and guidance during a particularly challenging time.

In addition to traditional telephone lines, and often targeting individuals unable to speak on the phone, some CSAs offered similar services through alternative channels such as free SMS, mobile apps, or popular digital communication tools (e.g., Skype, Messenger). For example, in the Czech Republic, the initiative *#IdowhatIcan* was launched by a group of psychologists, psychiatrists, social workers, therapists, and priests, in cooperation with the Czech Psychotherapy Association, to offer online consultations during the pandemic. During the first wave, over 760 psychotherapists joined the initiative, offering free online consultations through a dedicated website. The platform also became a valuable database for locating professionals based on location, spoken languages, and areas of specialisation.

In Hungary, the NANE Association provided a secure and anonymous web chat to assist victims of domestic and sexual violence, as well as their supporters. This tool was considered more suitable than telephone lines for helping individuals confined at home with their abusers.

Some helplines were also created with a specific focus on other vulnerable groups, such as elderly people, LGBTQI+ individuals, mothers and pregnant women, migrant women, perpetrators of violence, young people, and children. In France, for example, *Flag!*, a CSA established to combat all forms of discrimination against gay, lesbian, and transgender individuals within the Ministry of the Interior and Justice, launched a web and smartphone application that allows users to anonymously report cases of LGBT-phobia and domestic violence. The app not only supports users in the reporting process but also enables the creation of a situational map to inform decision-makers.

In Poland, the Polish Association of the Deaf (*Polski Związek Głuchych*) developed a video chat service in response to the lack of accessible pandemic-related information for the deaf community. In addition to informing citizens, the chat was also designed as a tool to assist healthcare workers in communicating with deaf individuals.

4.2 Telecare Practices to Create Relationships

4.2.1 Lobbying

The various restrictions on personal freedom and the closure of certain services, particularly during the initial phase of the pandemic, gave rise to a series of campaigns and lobbying activities by CSAs, often supported by the use of ICTs. These initiatives frequently emphasised how the pandemic was being used as a pretext to curtail established rights. These campaigns included increased public support for combating gender-based violence, the protection of fundamental sexual and reproductive health rights, greater attention to gender differences in pandemic-related policies, and enhanced financial support to address poverty. CSAs primarily disseminated these demands through websites and major social media platforms.

In Lithuania, the *Lietuvos žmogaus teisių centras* (Lithuanian Human Rights Centre), together with other human rights NGOs, promoted an online petition urging public authorities to avoid creating obstacles to access to abortion during quarantine. This petition became necessary for two main reasons: first, some CSAs observed that pandemic-related restrictions had, in some cases, created barriers for women seeking this service; second, the Minister of Health had made a statement suggesting that the pandemic provided an opportunity to reopen the debate on abortion.

Similarly, in Belgium, the *Plateforme citoyenne pour une naissance respectée* launched an online campaign advocating for women's right to be accompanied by their partner during childbirth and for the right not to wear a mask during delivery.

Labour was also a central focus of digital campaigns. For example, union-affiliated workers at the Polish Academy of Sciences and the Academy of Fine Arts in Warsaw used the web and social media to launch an online petition and awareness campaign. Their goal was to shed light on the challenges faced during the pandemic by women and others in academia who also had caregiving responsibilities. The pandemic further disadvantaged these individuals in producing research output, which in turn affected internal evaluations, funding applications, and opportunities for new positions.

4.2.2 Matching Supply and Demand

The final theme includes initiatives in which ICTs were used as intermediaries to create networks that matched the supply and demand for information, goods, services, volunteer work, and more. The most prominent examples of this approach are so-called mutual aid platforms, websites that facilitate the connection between individuals requesting help and those offering support. In the cases observed, these platforms were often developed by informal groups of civic hackers (Schrock 2016), sometimes in collaboration with innovation companies and social support organisations.

Some platforms were simple Facebook groups created by individuals aiming to support those in need during the pandemic, such as people who were sick, elderly, at-risk populations, care workers, and other vulnerable groups. In Iceland, for example, the Facebook group *Hjálpum fólki í áhættubópi (Kóróna / Covid 19)* ("Let's help people in risk groups (Corona/Covid-19)") provided a space where volunteers could offer assistance, such as grocery shopping, to people in high-risk categories. By the summer of 2021, the group had grown to around 3,000 members.

In Poland, the Facebook group *Widzialna ręka* ("Visible Hand") offered similar services, sharing helpful information both online and in public spaces. The initiative reached approximately 105,000 followers, demonstrating the significant role that grassroots digital communities played in pandemic support efforts.

Other platforms were more structured web-based services, often complemented by the use of social media (for instance, Facebook) and telephone support to enable individuals affected by the digital divide to request assistance. One such example is *Stiprūs Kartu* ("Strong Together") in Lithuania.

The platform Mutual Aid UK enabled individuals to find and support existing community groups, or to create new ones where none existed, with the goal of organising aid during the pandemic.

In Latvia, the *#stayhome* movement was launched to coordinate volunteers, initially through an informal Facebook group, which later evolved into an NGO with its own dedicated website.

In the Czech Republic, a former nurse created an initiative to connect qualified but currently unemployed nurses with nearby medical facilities in need of staff, using a web-based platform. A similar initiative emerged in Slovakia, targeting medical students, healthcare professionals, and other volunteers.

In some initiatives, support for elderly people was provided through more familiar technologies, such as the telephone. In Spain, for example, a cooperative specializing in community development organised a phone-call chain initiative: one woman would call another, who would then call the next, and so on, until the last person called the first. In this way, everyone in the group remained connected. In Slovenia, an NGO set up a telephone line that anonymously connected elderly individuals. People could register in a database and were then matched with others for conversation and mutual support.

5. Discussion

In this research, we observed how CSAs used ICTs to mitigate the problems faced by people belonging to vulnerable groups, which were related to the information crisis that occurred during the pandemic. We considered the actions of these sociotechnical assemblages as telecare practices, proposing to extend the discussion around this concept beyond its current focus on health professionals, users with chronic illnesses, and specific technologies, to also include bottom-up practices of CSAs, not necessarily limited to healthcare, that address vulnerabilities and involve the use of everyday ICTs.

Expanding the analytical focus in telecare research enables greater attention to the often-overlooked dimensions of care – what might be termed “neglected things” (Puig de la Bellacasa 2017) that the dominant technoscientific narratives tend to exclude. This shift necessitates a reconfiguration of knowledge production that is both inclusive and attuned to vulnerability. A critical starting point is the application of an intersectional lens when focusing on telecare practices or crisis informatics. Despite its relevance, the concept of intersectionality seems to remain largely underutilised in these research areas. We argue, however, that a sustained, reflexive engagement with the intersecting axes of inequality – examining how they co-constitute experiences of care – is essential for uncovering the power dynamics that shape care practices during information crises, and shape how ICTs can be used to intervene. Such an approach supports this line of research in aligning more closely with Tronto’s recommendation (Parra Jounou and Tronto 2024) to integrate reflections on the ethics of care with considerations of privilege related to gender, ethnicity, class, and other axes of inequality. Furthermore, it allows the analysis to build on Pols’ insight (2010; 2012) that telecare practices vary depending on the users involved, while extending this perspective by emphasising that such differences are also shaped by structural inequalities and power relations.

5.1 Vulnerable Populations and Telecare Practices: Navigating Multilevel Challenges

The literature review suggests that the challenges posed by the pandemic and the associated information crisis for vulnerable populations have been multifaceted. These range from the suspension of family caregiving support services and sexual and reproductive healthcare to increased discrimination and violence against minorities, rising poverty and social exclusion, and widening educational disparities. The telecare practices observed highlight how the uncertainty surrounding these issues is complex in nature and requires care interventions that operate across multiple levels, from the individual to the structural, and from emotional and affective support to the facilitation of collective action. It is evident that these levels are not mutually exclusive; rather, in many cases, they appear to operate simultaneously.

Similar to what Ahlin and colleagues (2024) describe in the healthcare domain, ICTs have also been employed in our contexts to empower individuals by providing access to information, as well as emotional and affective support through helplines and related services. At the same time, it is evident that individual action alone is often insufficient to address these challenges, and that structural, collective responses are necessary. Many of the cases identified align with the “care and commoning” framework proposed by Sciannamblo and colleagues (2021), wherein the goal of ICT-mediated communication is not only to share information or support but also to foster community-building.

The cases analysed here clearly demonstrate that there is no one-size-fits-all solution to these challenges, echoing the findings of Parolin and Pellegrinelli (2022), who observed that the role of ICTs shifts depending on the changing constellation of actors within a network. It is essential to consider the specific dynamics at play, including the potential impact of proposed solutions on particular issues and existing inequalities. The same technology can interact differently with various social groups, just as different technologies can present distinct challenges for individuals facing the same issue but situated at different intersections of vulnerability and power. For example, a victim of gender-based violence may risk leaving traceable records that are accessible to perpetrators when using SMS messages or text-based webchats. Conversely, telephone helplines may mitigate this risk but could exclude individuals with hearing impairments. The key principles of safety, trust, peer support, collaboration, enablement, and intersectionality, as proposed by Chen and colleagues (2022) for implementing a trauma-informed approach in computing research and practice, represent an important step towards addressing these issues.

5.2 User Involvement in Telecare Practices: Varying Degrees of Participation

To better understand the different kinds of involvement that vulnerable people were invited to engage in through various telecare practices, the mapped initiatives were organised along two axes (see Figure 3). The first concerns the two main dimensions of the initiatives identified in the analysis, ranging from the provision of information to activities aimed at the creation of relationships among the users (see Figure 2). The second relates to the three levels of user involvement in the use of ICTs described by Carpentier (2015): access,

interaction, and participation. The intersection of these axes yields four stylised levels of contribution expected from vulnerable individuals in their interactions with telecare practices: discovering, following, reacting, and commoning.

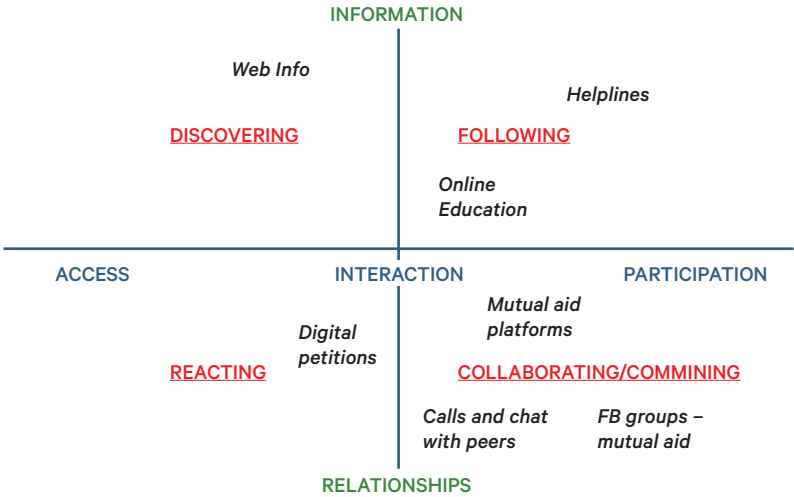


Figure 3.
The role of ICTs in telecare practices.

In the *discovering* mode, there is a marked distinction between those offering the service and those using it, which can take the form of a lay/expert relationship, with communication technology acting as a means of contact between the two groups. ICTs were used not only as a “back-channel” (Palen and Hughes 2018) to clarify and expand mainstream information, as already highlighted in crisis informatics research, but also to provide information to groups that often remain invisible to institutional bodies. This represents the foundational level of telecare provision and remains essential. However, the absence of specific elements such as emotional engagement and frequent communication, as emphasised by Ahlin and colleagues (2024), increases the risk that certain information may be misunderstood or overlooked by those who need it most.

In the *following* mode of care, there is an interaction between care providers and receivers, although the latter primarily act as an audience. In this category, computers and software for online meetings are employed to support the right to education for groups at risk of exclusion. These tools facilitate interaction and dialogue, often attempting to replicate, in online settings, care practices that had previously been established in face-to-face settings, thereby striving to balance innovation with maintainability, as suggested by Krüger and colleagues (2021). In many cases, beyond offering intellectual services, the organisations also provided the necessary hardware, thereby helping to bridge the digital divide. However, it is important to stress that mitigating digital exclusion requires more than access

to technology and connectivity alone, as previously emphasised by Cibin (2023). This materiality dimension must also be supported by social assistance and appropriate physical spaces (*ibid.*), as well as by ongoing technical maintenance (Ahlin et al. 2024).

In the *reacting* mode, ICTs support users only in accessing, or interacting with, the media through activities like lobbying or advocacy. This is the area in which the political dimension of care, highlighted by Puig de la Bellacasa (2017), becomes visible through practices that not only aim to raise awareness and disseminate knowledge, but also seek to intervene in the realm of opportunities by promoting structural change.

In the last category, telecare practices work towards *collaboration and commoning* (Teli et al. 2020). By commoning, we mean the collective effort towards the creation of a community objective, a commons, “to resist and create alternatives to the inequalities, contradictions, and threats of contemporary neo-liberal western societies” (Poderi 2020, 31). This process of empowerment through the creation of community is not possible in the self-care activities seen in the *discovering* mode. Technologies and platforms, when collaborating and commoning, are used primarily as a means of connecting people and co-creating together, blurring the direction of the interactions. In most of these cases, the ICTs employed are mainstream technologies. The use of these everyday digital tools – thanks to their widespread popularity and the fact that many users have already domesticated them – has been fundamental in rapidly bringing together large groups of people (Carlsen et al. 2021; Parolin and Pellegrinelli 2022), thereby enabling the formation of care collectives (Ahlin et al. 2024). However, several concerns have been raised regarding the use of major proprietary platforms and social media, including issues of transparency, fairness, and privacy risks (Cibin et al. 2023; van Dijck et al. 2018; Eubanks 2019). Further research is needed to understand how the internal dynamics of these platforms (for instance, how a platform’s algorithm determines the visibility of help requests within specific groups) may influence the development of interpersonal relationships in these contexts.

Policymakers and designers of technologies should keep in mind these dynamics when responding to similar future information crises.

6. Conclusions

This study has shown how CSA initiatives leveraged ICTs to address the challenges faced by vulnerable groups during the pandemic’s information crisis. By framing these interventions as telecare practices, we proposed broadening the scope of telecare research to include bottom-up, everyday uses of technology that respond to diverse forms of vulnerability. This expanded lens draws attention to often-overlooked aspects of care – what Puig de la Bellacasa calls the “neglected things” – and calls for a more inclusive, intersectional approach to understanding how care is practiced and experienced. Such a perspective not only includes attention to structural inequalities in debates about digital care but also aligns with ethical imperatives to consider privilege and power in the design and analysis of sociotechnical systems. The strength of this study lies in its exploratory approach, grounded in empirical data, which contributes valuable evidence to an emerging discussion on telecare and social inequalities – a field that remains underdeveloped and in need of further scholarly attention.

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