

VOL. 5, NO. 1, 2023, 70–89

NON-KNOWLEDGE IN MEDICAL PRACTICES: APPROACHING THE USES OF SOCIAL MEDIA IN HEALTHCARE FROM AN EPISTEMOLOGICAL PERSPECTIVE

Anna Sendra^a, Sinikka Torkkola^a and Jaana Parviainen^a

ABSTRACT

Social media has transformed how individuals handle their illnesses. While many patients increasingly use these online platforms to understand embodied information surrounding their conditions, healthcare professionals often frame these practices as negative and do not consider the expertise that patients generate through social media. Through a combination of insights from social epistemology and ignorance studies, this paper problematizes the distinctive understandings of social media between patients and healthcare professionals from a different perspective. A total of four ideas are introduced: (1) healthcare professionals see embodied knowledge that arises from patients' social media practices as uncomfortable knowledge; (2) healthcare professionals engage in several behaviours to preserve their authority and power in front of embodied knowledge created through these online platforms; (3) failing to consider embodied knowledge can have consequences not only in terms of trust between patients and healthcare professionals but also in connection with epistemological populism and the transition towards patient-centred care; and (4) media and digital health literacy could help healthcare professionals enhance the uses of social media in healthcare. Adopting this framework allows not only to offer valuable insights into how healthcare professionals manage patients' social media practices, but also opens new avenues to improve healthcare digitisation.

Keywords: social media; embodied knowledge; healthcare professionals; patients; ignorance studies; social epistemology.

^a Tampere University, Finland

1 INTRODUCTION

In the realm of digital health, one of the most used technologies by patients is social media (Lupton 2018). These online platforms have the capability to provide informational and emotional support to those who experience illness (Sendra et al. 2020). Patients who used to have no answers now feel validated in the experiences of other people (Wagner et al. 2021). Despite their value, healthcare professionals¹ not only still use social media poorly (Hernandez et al. 2021), but also react negatively quite often when patients ask them about information found through these online platforms (Benetoli et al. 2018). A considerable amount of literature has established these distinctive understandings of social media between patients and healthcare professionals (e.g., Sendra and Farré 2017). Still, research to date has not yet determined how to improve the adoption of these online platforms in the work practices of the latter.

Starting from the premise that knowledge is a key feature in medicine (Martin et al. 2009), this theoretical paper examines how patients and healthcare professionals struggle with their unknowns and use their own knowledge resources differently in the age of digital health. We integrate ideas of previous studies on social epistemology (Fuller 2002) and ignorance studies (Gross and McGoey 2015; 2022) to provide new conceptual insights on how patients and healthcare professionals deal with these online platforms and the practices that accompany them. Although the research is theoretically oriented, we utilise previous empirical studies of all authors (Sendra and Farré 2020; Torkkola et al. 2019) about patients and healthcare professionals as users of social media in acquiring health information. Furthermore, we use empirical and theoretical findings from previous studies in the field of digital health (e.g., Lupton 2018; Sosnowy 2014; Ventola 2014) to highlight and deepen our conceptual framework. Especially, the study explores the illustrative cases of patients with long COVID and chronic pain to uncover how patients make their unknowns known.

1.1 Theoretical foundation

Historically, the relationship between patients and healthcare professionals has been based on superiority, where healthcare professionals are the individuals in possession of (expert) knowledge (Wagner et al. 2021). Although the paternalistic nature of their encounters took a turn towards patient autonomy in the 1980s (Killbride and Joffe 2018), the emergence of social media consolidated participatory healthcare (Sosnowy 2014). Along with this transformation, a type of expertise different from expert knowledge was introduced (Bellander and Landqvist 2020). As indicated elsewhere, the expertise that arises from patients' social media practices goes beyond evidence-based medicine (Sendra and Farré 2020). Consequently, healthcare professionals are increasingly guided “to new horizons of what is

¹ By healthcare professionals we mostly refer to nurses and general practitioners.

unknown” (Gross and McGoey 2015, p. 1). Epistemology encompasses this unknown under the concept of medical ignorance (hereafter, non-knowledge) (Whooley and Barker 2021).

As Whooley and Barker (2021) explained, non-knowledge can adopt different forms. To name a few, in medicine there can be *known unknowns* (unknowns that we are conscious of their existence); *unknown unknowns* (unknowns that we are not conscious of their existence); *tacit knowing* (unknowns that we do not know that we are conscious of their existence); *errors* (unknowns that we think we are conscious of their existence but that are erroneous); *taboos* (unknowns that we are not supposed to be conscious of their existence but that may be useful); and *denials* (unknowns that we refuse to be conscious of their existence) (Kerwin 1993). The bottom line of these categorisations is to highlight that knowledge in medicine is limited, where those things that we do not know are intertwined with those things that we do know (Kerwin 1993; Whooley and Barker 2021). As a result, “ignorance saturates all of medicine, from the biomedical laboratory to the design of medical technologies, from the clinical encounter to collective politics of health and illness” (Whooley and Barker 2021, p. 280).

While non-knowledge existed before the emergence of social media (Kerwin 1993), the use of these online platforms for health-related purposes has enhanced its visibility, particularly of known unknowns². The problem remains that only few studies have examined how healthcare professionals deal with the non-knowledge that arises from patients’ social media practices. In previous research, the relationship between knowing/not knowing has been explored under the framework of genetics (Wehling 2015), mental health (McPherson et al. 2020) or antibiotics (Will 2020). As for social media, scholars have focused on analysing how patients generate lay expertise through these online platforms (Bellander and Landqvist 2020; Maslen and Lupton 2019). Therefore, the aim of this paper is to illustrate how non-knowledge impacts the ways healthcare professionals are managing the unknowns that patients generate through social media. The discussion will be guided by the *structural conception of ignorance*. As indicated by El Kassar (2018, p. 302), this notion suggests that non-knowledge is administered in a way that “is not just rooted in the beliefs, epistemic vices and the outlook of the individual but also manifest in and maintained by social and institutional structures and mechanisms”.

The following sections present four main ideas. First, we argue that healthcare professionals see the non-knowledge that emerges from patients’ social media practices as uncomfortable knowledge (Rayner 2012). Second, we problematise why healthcare professionals fail to consider the non-knowledge created through these online platforms in their work practices (McGoey 2012, 2020; Stein 2020; Williams 2021a). Third, we illustrate that not considering the non-knowledge that emerges from patients’ social media practices can have

² An example of known unknowns are not yet registered causes behind a disease (e.g., long COVID).

consequences for the organisation and delivery of healthcare at the micro, meso and macro levels (Akrich 2010; Nie et al. 2018; Numerato et al. 2019). Fourth, we suggest that media and digital health literacy could improve the uses of social media in healthcare for both patients and healthcare professionals (Jones et al. 2021; Marchal and Au 2020; Mather and Cummings 2019; Torkkola et al. 2019). The paper concludes with a summary of the contribution and the limitations of this study.

2 HEALTHCARE AND THE BIOMEDICAL PARADIGM

Healthcare professionals are arguably one of the most consolidated epistemic communities in society. Their expert knowledge has been acquired through long years of study and practice in healthcare organisations (Wagner et al. 2019; Wilkesmann 2016). This expertise is also constantly nurtured through multiple epistemic objects, such as blood tests or scans (Nerland and Hasu 2021). The result of these epistemic practices, which are rarely questioned, is patients' profound trust in healthcare professionals (Ahmed et al. 2020). However, the use of social media for health-related purposes is testing the traditional functioning of this epistemic community. Evidence-based knowledge production processes of healthcare professionals are increasingly met with a type of expertise based on subjective experiences that patients generate through these online platforms. Previous studies have deemed this expertise *experiential knowledge* (Bellander and Landqvist 2020; Versteeg et al. 2018) while other authors have referred to it as *embodied knowledge* (Ellingson 2006). In this context, experiential knowledge not only describes how patients experience the symptoms of a condition through their bodies (e.g., unknown adverse effects of drugs) but also incorporates information related to their experiences with the healthcare system (e.g., difficulties accessing a healthcare professional). Since this paper focuses on the non-knowledge related to bodily experiences, we will hereafter refer to the expertise that patients produce through social media as *embodied knowledge* (see also Parviainen and Aromaa 2017).

Before the emergence of these online platforms, embodied knowledge was usually discussed with close relatives, family, and friends. However, social media has allowed the distribution of this expertise also among networks of weak ties. Evidence indicates that online networks of weak ties better satisfy the informational and emotional support needs of patients, as the perspectives encountered are more diverse than those found in networks of strong ties (Wright 2016). In turn, these practices make patients feel empowered to share the expertise created online with their healthcare professionals. The problem remains that healthcare professionals mainly approach the treatment of a condition from the perspective of disease, meaning that these individuals have difficulties to manage embodied knowledge (Rosendal et al. 2017). That is, although healthcare professionals recognise the limits of their expert knowledge (Wilkesmann 2016), most are not prepared to deal with unknowns that cannot be objectively measured. Consequently, the use of social

media for health-related purposes is still controversial. A case study in Finland conducted with healthcare professionals is consistent with this argument (Torkkola et al. 2019). Of the 490 participants, 2 out of 10 admitted to experiencing conflict with patients over their social media practices. Most of these disputes were generated because the patient made expertise claims based on misleading information (Torkkola et al. 2019).

From an epistemological perspective, one way of framing the distinctive understandings of social media between patients and healthcare professionals could be through *the digital technology paradox*. As Mather and Cummings (2019, p. 1–2) explained, “there is an inability of health professionals [...] to access digital technology in the workplace, while it is increasingly recognized that its use has the potential to improve patient outcomes”. Regulatory restrictions are indeed one of the reasons for this misalignment (Harris et al. 2013). Nevertheless, the sociotechnical imaginaries of healthcare organisations could also be influencing the adoption of social media in the organisation and delivery of healthcare (Jasanoff and Kim 2009). Sociotechnical imaginaries “are generally future-oriented visions of connected social and technological orders, with more or less determinism built into them” (Sismondo 2020, p. 505). This means that the incorporation of social media into professional settings may depend, for example, on the evidence that healthcare organisations have regarding these online platforms (Flear 2019).

That is, if the sociotechnical imaginary of a healthcare organisation is built only from its experiences with social media, these online platforms will probably not be a part of its imagined future because the evidence available to it describes more harm than benefit. Previous studies identified some of these harms, which go from misinformation and disinformation to the possible commodification of the patient opinion (Lupton 2014; Torkkola et al. 2019). However, the reasons behind the lack of engagement on the part of healthcare professionals when it comes to social media seem to go beyond structural inertia. In terms of power, these online platforms have always generated concerns about the authority of healthcare professionals (Sendra and Farré 2017; Torkkola et al. 2019). Social media is helping patients to focus on aspects of a condition that were previously not acknowledged, thus generating a type of expertise based on non-knowledge (i.e., unknowns). Therefore, when patients present it during medical consultations, the power relationship changes, and healthcare professionals can no longer sustain their position of superiority over these individuals (Wagner et al. 2021). From this perspective, we argue that patients’ embodied knowledge created through these online platforms can be described as healthcare professionals’ non-knowledge.

Table 1. Healthcare professionals’ management of embodied knowledge generated through social media.

Strategy	Definition	Application example
Denial	Uncomfortable knowledge is totally refused	Healthcare professionals do not acknowledge patients’ knowledge generated through social media
Dismissal	It is admitted that uncomfortable knowledge exists, but then it is also refused for reasons such as unreliability or lack of precision	Healthcare professionals acknowledge patients’ knowledge generated through social media, but the information is later discarded by citing misinformation concerns
Diversion	A distraction is created to get away from the uncomfortable knowledge	Healthcare professionals invite patients to consult other informational resources, such as scientific papers
Displacement	Distraction is created to avoid the uncomfortable knowledge and alternatives are placed	Informational resources recommended by healthcare professionals become alternatives to knowledge generated through social media

Source. Definitions paraphrased from Rayner (2012); examples provided by the authors.

If we understand non-knowledge as a space with power struggles (Perron et al. 2020), healthcare professionals could be framing social media as a technology that compromises their authority and highlights the limits of their expertise. Since embodied knowledge generated through these online platforms questions what healthcare professionals already know, this type of expertise becomes *uncomfortable knowledge* for healthcare professionals. Rayner (2012, p. 111) defines uncomfortable knowledge as any “potential information that presents either sort of danger to institutions”. Uncomfortable knowledge can be managed through denial, dismissal, diversion, or displacement (Rayner 2012). Of these four categories, ‘dismissal’ seems to best describe the management of embodied knowledge generated through social media exercised by healthcare professionals (Table 1). For example, evidence indicates that healthcare professionals are aware of the practices that happen through these online platforms and its benefits for patients (Torkkola et al. 2019). However, instead of confronting their non-knowledge, embodied knowledge is often considered inferior (Flear 2019) and classified as medically unexplained symptoms (Rosendal et al. 2017). Consequently, in addition to perpetuate the prejudices that biomedicine holds against them (Sendra and Farré 2020), patients with conditions that cannot be proved with evidence (e.g.,

fibromyalgia) may end being victims of testimonial injustice (Blease et al. 2017; Fricker 2007).

3 NON-KNOWLEDGE AS A WAY TO UNDERSTAND THE DISMISSAL OF EMBODIED KNOWLEDGE

The literature on ignorance studies indicates that epistemic actors adopt different behaviours when it comes to manage non-knowledge, which can be positive (where non-knowledge is followed up) or negative (where non-knowledge is not considered) (Gross 2019). Some of these behaviours include *rational motivated ignorance* (Williams 2021a), *ignorance due to strong assumptions* (Stein 2020) and *strategic ignorance* (McGoey 2012, 2020). Although none of these behaviours has been studied in the context of the uses of social media in healthcare, they can still provide relevant insights on why healthcare professionals usually dismiss the embodied knowledge that patients generate through these online platforms. First, rational motivated ignorance describes situations where “individuals remain ignorant not because of a lack of available information, and not because of the various costs associated with acquiring that information, but because of the costs associated with knowledge itself” (Williams 2021a, p. 7823–7824). In this case, epistemic actors act from a perspective of self-protection, reaching the conclusion that it is better to avoid the unknown than to face their non-knowledge (Roberts 2013; Williams 2021b). According to this behaviour, healthcare professionals would be dismissing the embodied knowledge that arises from patients’ social media practices to protect their position. This is consistent with the authority concerns previously described, as Williams (2021b) explained that confronting non-knowledge compromises the epistemic status of an individual.

Second, ignorance due to strong assumptions is related “to assuming an unequal distribution of human freedom” in decision-making processes, where the hierarchies within an organisation seem to have an influencing role (Stein 2020, p. 431). According to this behaviour, healthcare professionals would be dismissing the embodied knowledge that arises from patients’ social media practices by assuming that knowledge production in medicine is their responsibility and not that of others. This lines up not only with the impact of these online platforms on medical power but also with the depth of organisational culture roots of healthcare organisations (Manning-Cork 2019). In this context, it could be argued that patients may also engage in this behaviour when they generate embodied knowledge. However, it is outside the scope of this paper to analyse this aspect in further detail. Third, strategic ignorance “illuminates the way various states and processes of unknowability are often structured by the power of some social groups to remain deliberately ignorant” (McGoey 2020, p. 198; McGoey 2012). According to this behaviour, healthcare professionals would be dismissing the embodied knowledge that arises from patients’ social media practices to protect their organisations. This is because healthcare organisations should be understood as negotiated orders where

multiple, complex processes and services are intertwined (Tjora and Scambler 2009). Therefore, if patients that generate embodied knowledge through these online platforms were considered subjects with multiple epistemic positions instead of passive agents (Perron et al. 2020), the established order of healthcare organisations risks being destabilised.

4 CONSEQUENCES OF DISMISSING EMBODIED KNOWLEDGE FOR HEALTHCARE

The distinctive understandings of social media between patients and healthcare professionals have both positive and negative connotations. On the one hand, these online platforms are beneficial because patients can share their embodied knowledge with other individuals, who also share their own, thereby forming a community of practice where lay expertise is exchanged between members (Wagner et al. 2019). These interactions create *epistemic value* (Barret et al. 2016), where patients perceive their conditions as authentic by highlighting issues that they were otherwise unable to see. People living with long COVID are the latest example of patients' social media practices. Indeed, Callard and Perego (2021) argued that long-term COVID-19 is the first disease to be defined using these online platforms. Despite a lack of expert knowledge, patients turned to social media to find evidence for embodied knowledge around their experiences, look for answers to their symptoms and claim testimonial. While these processes are similar for other conditions (Sendra and Farré 2020), the difference in the case of people living with long COVID lies in how quickly healthcare professionals confronted their non-knowledge (Callard and Perego 2021).

This precedent shows how patients make use of social media to make the unknown known. First, by sharing their experiences through these online platforms, social media assisted people living with long COVID to transform the 'unknown unknowns' of this condition into 'known unknowns'. Second, once the unknowns about long-term COVID-19 became a 'known unknown', the capacity of these online platforms for connection allowed patients to reach one another, slowly creating an epistemic community (Akrich 2010) that attracted the attention of experts. For healthcare professionals, the tipping point between knowledge and non-knowledge came when they began to seriously consider the experiences of people living with long COVID posted in social media. In other words, only when healthcare professionals confronted their non-knowledge, the 'known unknowns' of this condition converted into 'known knowns' through scientific research. Therefore, these online platforms offer an opportunity to improve the work practices of healthcare professionals, as patients with conditions that are invisible to evidence-based medicine will continue to use social media to manage their conditions. Embodied knowledge generated through these online platforms could also represent a change for rare diseases, where the "scarcity of expertise poses a

huge challenge to patients who seek access to diagnostic testing and appropriate treatment” (Dawkins et al. 2018, p. 12).

On the other hand, the risk with social media when it comes to embodied knowledge is that not all embodied knowledge is constructed equally. Previous research in the context of chronic pain suggested that patients undergo a three-step process when posting their experiences in social media, deciding in one of these steps which is the best way to share their expertise (Sendra and Farré 2020). Maslen and Lupton (2019, p. 1638) added that patient enactments on these online platforms may include “1) expertise claims based on appropriation and distribution of scientific knowledge and experience; 2) sharing experiential knowledge without claiming expertise and 3) evaluation and use of knowledge presented by others, principally through observing”. Other studies have identified similar knowledge construction processes in blogs and forums (Bellander and Landqvist 2020; Versteeg et al. 2018). The problem remains that embodied knowledge may be generated from misleading information (Torkkola et al. 2019). In this context, previous research suggested that expertise claims based on misleading/incomplete information may end in patient disaffection with their healthcare professionals (Bellander and Landqvist 2020). We argue that dismissing embodied knowledge that arises from patients’ social media practices not only generates tensions between patients and healthcare professionals, but it also creates problems with digitisation processes and the confidence that the public has in expert knowledge (Table 2).

Table 2. Harms related to patients’ and healthcare professionals’ distinctive understandings of social media.

Level	Actors involved	Potential harm
Macro	Society in general	Decreased public trust in expert knowledge
Meso	Healthcare organisations	Problems integrating innovations and consolidating patient-centred care
Micro	Patients and healthcare professionals	Increased tensions in relationships between patients and healthcare professionals

At the micro level, the distinctive understandings of social media between patients and healthcare professionals may increase tensions in their relationship. As described above, misleading information can damage trust between patients and healthcare professionals (Bellander and Landqvist 2020), which in turn causes the latter to become more guarded when it comes to their relationship (Laurent-Simpson and Lo 2019; Nie et al. 2018). The problem remains that trust is one of the key resources that healthcare professionals have at their disposal to tackle misleading information, especially when constructed using bottom-up approaches (Rodgers and Massac 2020). Previous research also indicates that the phenomenon of misleading information seems to be linked with a general disaffection towards information provided by traditional sources such as news media (Nielsen and

Graves 2017). Therefore, healthcare professionals need to confront embodied knowledge that arises from patients' social media practices not only to improve their communication with patients but also increase public trust in expert knowledge (Van Dijck and Alinead 2020). Otherwise, avoiding or overlooking this risk may lead to disaster (Erikainen et al. 2019; Perron et al. 2020), such as the 'infodemic' surrounding the COVID-19 pandemic (Van Dijck and Alinead 2020).

At the meso level, the distinctive understandings of social media between patients and healthcare professionals complicates both digitisation processes and the consolidation of patient-centred care. While these online platforms have made healthcare more participatory (Sosnowy 2014), biomedical evidence often remains the only information that healthcare professionals consider when making decisions. These deep-rooted practices may be related to micro- and macro-ignorance (McGoey 2020), with the latter corresponding to the organisational posture that results from incorporating individual positions into a situation. For example, if most healthcare professionals still perceive social media as negative (micro-ignorance), these beliefs will add up and reinforce the position that these online platforms are harmful for their work practices (macro-ignorance). As Laurent-Simpson and Lo (2019, p. 1283) explained, "understanding and respecting what drives the personal perspectives reflected on social media pages should better position medical professionals and other scientists to win buy-in from the audience". Therefore, healthcare professionals need to confront embodied knowledge that arises from patients' social media practices to learn how this expertise can benefit their work practices (Nerland and Hasu 2021). Otherwise, failing to consider this harm will continue to hinder the transition towards a (fully) patient-centred, technology-based healthcare.

At the macro level, the distinctive understandings of social media between patients and healthcare professionals may decrease public trust in expert knowledge. For example, misleading information may lead to epistemological populism, concept that describes "the favouring of 'common people's knowledge' over knowledge that is produced by expert systems" (Numerato et al. 2019, p. 84). As indicated elsewhere, social media has the potential to exacerbate epistemological populism (Numerato et al. 2019), partly due to the echo chamber phenomenon linked to these platforms (Usher and Ng 2020). While epistemological populism goes beyond embodied knowledge, it could be argued that social media 'echo chambers' where only patients take part are a potential starting point for this phenomenon. Similarly, healthcare professionals should be aware that online communities are not only diverse and work in different ways (Usher and Ng 2020), but also that patients may have different epistemic statuses within these groups (Tempini and Del Savio 2019). Therefore, healthcare professionals need to confront embodied knowledge that arises from patients' social media practices to understand how to adapt their strategies to the multiple realities of these individuals (Larson 2018; Timmermann 2020; Will 2020). Otherwise, disregarding this harm could increase the campaigns based on misinformation that already take place on

these online platforms, such as the anti-vaccination movement (Hernandez et al. 2021).

5 TOWARDS THE MANAGEMENT OF THE UNKNOWN

As we argued throughout the paper, there is a need for healthcare professionals to confront the embodied knowledge that arises from patients' social media practices. The problem remains that these online platforms and other digital health technologies have created professionalism-related issues for healthcare professionals. Some of these problems involve uncertainty surrounding the concepts of authenticity, subjectification, and diversity when health professionals use avatars (Hallqvist 2019) or perceiving as inappropriate the use of smartphones while interacting with patients (Naples et al. 2020). As for social media, evidence indicates healthcare professionals' difficulties discerning what constitutes professional versus unprofessional behaviour on these online platforms (Ahmed et al. 2020; Curtis and Gillen 2019; Ruan et al. 2020) or how to balance the use of social media between personal and professional lives (Jones et al. 2021; Ventola 2014). Therefore, confronting the embodied knowledge that arises from patients' social media practices goes beyond achieving an organisational effort to frame these online platforms as epistemic objects that can complement expert knowledge and improve the organisation and delivery of healthcare.

To be able to manage patients' social media practices, healthcare professionals also need to improve their digital health literacy (Bimber and Gil de Zúñiga 2020). As indicated elsewhere, healthcare professionals are not immune to problems related to misleading information (Palomino-Gonzales et al. 2020). A way of addressing this issue is by improving the education of healthcare professionals on digitization (Mather and Cummings 2019). To this end, some medical undergraduate programs have started to introduce digital professionalism into their syllabuses, though this is still uncommon (Ahmed et al. 2020). The aim of this type of professionalism is to help healthcare professionals learn how to make sense of digital technologies in relation to their work practices (Mather and Cummings 2019). Previous research has found that digital professionalism helps medical students consider both the positive and negative aspects of social media (Jones et al. 2021). Therefore, introducing these courses would not only help healthcare professionals address the mistrust present in their relationship with patients but they would also have more resources to deal with misleading information (Nie et al. 2018; Ruan et al. 2020).

In turn, digital professionalism would allow healthcare professionals to enhance the digital health literacy of their patients (Palomino-Gonzales et al. 2020). This is significant considering that the challenge of the COVID-19 pandemic has been “not to keep people informed so much as to help them navigate the sheer volume of novel information and claims made available everyday” (Marchal and Au 2020, p. 3). Other studies have also indicated that it is equally

important to improve the level of media literacy of the public (Pulido et al. 2020; Ratzan et al. 2020), especially when expert knowledge is increasingly biomediatized (Briggs and Hallin 2016). That is, people need not only the skills to process the information found online but also tools that will allow them to determine the reliability of the source (Pulido et al. 2020; Ratzan et al. 2020). For these courses to be successful, evidence also suggests that healthcare organisations must establish them at the same time as digital health technologies are introduced into the work practices of healthcare professionals (Mather and Cummings 2019). The distinctive understandings of social media between patients and healthcare professionals discussed throughout this paper demonstrates how this simultaneous application has not yet happened in the case of these online platforms.

Similarly, healthcare professionals should be more open-minded in relation to digitisation and embodied knowledge, especially when their beliefs seem to be a crucial element to transform the ‘known unknowns’ of social media into ‘known knowns’. In this context, healthcare professionals must be not only motivated to confront their non-knowledge but also interested in the spaces that generate it (Nerland and Hasu 2021; Wilkesmann 2016). This would give healthcare professionals the opportunity to expand the limits of their expert knowledge (Roberts 2013) while also developing closer relationships with patients, which in turn would facilitate the delivery of patient-centred care. As Piras and Miele (2019, p. 128) explained, communication between patients and healthcare professionals mediated through technology “allows personal events, previously not taken into account, to be communicated and considered by providers”. However, digitisation also comes with the risk of patients being more responsible for their conditions than the healthcare professionals who care for them (Erikainen et al. 2019). While healthcare organisations use ‘responsibilisation’ as a way of controlling risks, this shift in responsibility could increase inequalities and create new ways of medicalisation (Erikainen et al. 2019; Hofmann and Svenaeus 2018; Jasper 2020).

Lastly, the distinctive understandings of social media between patients and healthcare professionals are related not only to the attitude of healthcare professionals but also to the allocation of communication responsibilities within healthcare organisations. The use of these online platforms in hospitals is generally handled by media specialists in communication departments, where the strategies are mostly constructed from an institutional perspective (Costa-Sánchez and Míguez-González 2018). Allocating communication tasks this way may generate tensions between managerial points of view and healthcare professionals’ perspectives. Hospitals are not only negotiated orders (Tjora and Scambler 2009) but also embodied informational structures, where the integration of a technology cannot be treated exclusively as a material phenomenon (Parviainen and Koski 2023). For example, consider messages from patients shared on the Facebook page of a hospital where they discuss their symptoms. Healthcare professionals will not address these messages because they believe that it is not their responsibility to answer them. Their current communication duties do not go beyond interpersonal

communication at the micro level. In turn, as communication specialists work under this corporate framework, they also may not respond to these messages because they do not know how to address them, perpetuating the distinctive understandings of social media between patients and healthcare professionals.

6 CONCLUSION

Starting from an epistemological framework, this paper has problematised the distinctive understandings of social media between patients and healthcare professionals from a different perspective. The paper has illustrated the ways that non-knowledge influences healthcare professionals when managing embodied knowledge that patients generate through social media. It has also been argued that patients are increasingly forming epistemic communities on these online platforms while healthcare professionals seem to be engaging in various strategies to protect their position of power and avoid facing the unknowns that arise from patients' social media practices. Likewise, it has been discussed that the distinctive understandings of these online platforms between patients and healthcare professionals are potentially harming the organisation and delivery of healthcare at all levels (Table 2), including fostering trust issues in their relationship. The paper has culminated by suggesting that initiatives aimed at increasing media and digital health literacy skills of both patients and healthcare professionals could be one approach for resolving these issues. Regardless of this problematization, what seems clear is that the current level of circulation of misleading information on social media necessitates some sort of action from healthcare professionals (Pulido et al. 2020; Van Dijck and Alinead 2020).

However, some limitations should also be considered. As stated in the introduction, the paper used only secondary sources. Carrying out a more detailed study would require the collection of completely new material, where medical ignorance would be the focus of the research questions. For this reason, we can only speculate that non-knowledge is a potential barrier to the successful digitisation of healthcare. Future studies should explore this topic through other methodologies, such as semi-structured interviews with healthcare professionals or focus groups with policy regulators. Similarly, the paper has discussed the processes of knowledge-production from a broad perspective without considering that it takes time for knowledge to become evidence-based or that patients may lack part of the specialized vocabulary related to their conditions. While discussing these issues are beyond the reach of this paper, future research should consider the processes of knowledge-production in further detail. Another limitation is related to the field of ignorance studies itself, which is a relatively new discipline within epistemology (Gross and McGoey 2015; 2022). This means that existing research may not entirely capture the complexity of the topic discussed in this paper. Despite these shortcomings, the ideas introduced here open a range of possibilities to approach the study of digitisation from a new perspective. We have shown that patients' social

media practices can become another epistemic focus for healthcare professionals to supplement their expert knowledge. Embodied knowledge is becoming stronger in these online platforms, and the COVID-19 pandemic is a clear example of how healthcare professionals should address, sooner rather than later, lay expertise generated through social media (Van Dijck and Alinead 2020). Otherwise, in addition to perpetuating epistemic injustices (Blease et al. 2017; Flear 2019), healthcare professionals will continue to experience problems digitising healthcare.

FUNDING STATEMENT AND ACKNOWLEDGMENTS

This work, supported by the Academy of Finland under grant number 316112, is part of the project *Struggling with Ignorance: Negative Expertise and the Erosion of the Finnish Information Society at the Turn of 2020 (NEGATE)*.

COMPETING INTERESTS

No potential conflict of interest was reported by the author(s). An abstract of this paper was presented at the NordMedia 2021 (virtual) conference.

ORCID

Anna Sendra: <http://orcid.org/0000-0001-7069-1378>

Sinikka Torkkola: <https://orcid.org/0000-0002-1150-6627>

Jaana Parviainen: <https://orcid.org/0000-0002-7838-592X>

AUTHOR CONTRIBUTIONS

Anna Sendra: conceptualisation; writing – original draft; writing – review & editing. Sinikka Torkkola: conceptualisation; supervision; writing – review & editing. Jaana Parviainen: conceptualisation; supervision; writing – review & editing.

REFERENCES

- Ahmed, W., Jagsi, R., Gutheil, T.G., and M.S. Katz. 2020. Public disclosure on social media of identifiable patient information by health professionals: Content analysis of Twitter data. *Journal of Medical Internet Research* 22 (9): e19746.
<https://doi.org/10.2196/19746>
- Akrich, M. 2010. From communities of practice to epistemic communities: Health mobilizations on the Internet. *Sociological Research Online* 15 (2): 1–17.
<https://doi.org/10.5153/sro.2152>
- Barrett, M., Oborn, E., and W. Orlikowski. 2016. Creating value in online communities: The sociomaterial configuring of strategy, platform, and stakeholder engagement.

- Information Systems Research* 27 (4): 704–723.
<https://doi.org/10.1287/isre.2016.0648>
- Bellander, T., and M. Lanqvist. 2020. Becoming the expert constructing health knowledge in epistemic communities online. *Information, Communication & Society* 23 (4): 507–522. <https://doi.org/10.1080/1369118X.2018.1518474>
- Benetoli, A., Chen, T.F., and P. Aslani. 2018. How patients' use of social media impacts their interactions with healthcare professionals. *Patient Education and Counseling* 101 (3): 439–444. <https://doi.org/10.1016/j.pec.2017.08.015>
- Bimber, B., and H. Gil de Zúñiga. 2020. The unedited public sphere. *New Media & Society* 22 (4): 700–715. <https://doi.org/10.1177/1461444819893980>
- Blease, C., Carel, H., and K. Geraghty. 2017. Epistemic injustice in healthcare encounters: Evidence from chronic fatigue syndrome. *Journal of Medical Ethics* 43 (8): 549–557. <http://dx.doi.org/10.1136/medethics-2016-103691>
- Briggs, C.L., and D.C. Hallin. 2016. *Making health public: How news coverage is remaking media, medicine, and contemporary life*. London and New York: Routledge.
- Callard, F., and E. Perego. 2021. How and why patients made Long Covid. *Social Science & Medicine* 268: 113426. <https://doi.org/10.1016/j.socscimed.2020.113426>
- Costa-Sánchez, C., and M. Míguez-González. 2018. Use of social media for health education and corporate communication of hospitals. *El Profesional de la Información* 27 (5): 1145–1154. <https://doi.org/10.3145/epi.2018.sep.18>
- Curtis, F., and J. Gillen. 2019. “I don't see myself as a 40-year-old on Facebook”: Medical students' dilemmas in developing professionalism with social media. *Journal of Further and Higher Education* 43 (2): 251–262.
<https://doi.org/10.1080/0309877X.2017.1359503>
- Dawkins, H.J.S., Draghia-Akli, R., Lasko, P., Lau, L.P.L., Jonker, A.H., Cutillo, C.M., Rath, A., Boycott, K.M., Baynam, G., Lochmüller, H., Kaufmann, P., Le Cam, Y., Hivert, V., Austin, C.P., and International Rare Diseases Research Consortium (IRDiRC). 2018. Progress in rare diseases research 2010–2016: An IRDiRC perspective. *Clinical and Translational Science* 11 (1): 11–20.
<https://doi.org/10.1111/cts.12501>
- El Kassir, N. 2018. What ignorance really is: Examining the foundations of epistemology of ignorance. *Social Epistemology* 32 (5): 300–310.
<https://doi.org/10.1080/02691728.2018.1518498>
- Ellingson, L.L. 2006. Embodied knowledge: Writing researchers' bodies into qualitative health research. *Qualitative Health Research* 16 (2): 298–310.
<https://doi.org/10.1177/1049732305281944>
- Erikainen, S., Pickersgill, M., Cunningham-Burley, S., and S. Chan. 2019. Patienthood and participation in the digital era. *Digital Health* 5: 2055207619845546.
<https://doi.org/10.1177/2055207619845546>
- Flear, M.L. 2019. Epistemic injustice as a basis for failure? Health research regulation, technological risk and the foundations of harm and its prevention. *European Journal of Risk Regulation* 10 (4): 693–721. <https://doi.org/10.1017/err.2019.67>

- Fricker, M. 2007. *Epistemic injustice: Power & the ethics of knowing*. Oxford: Oxford University Press.
- Fuller, S. 2002. *Social epistemology* (2nd ed.). Bloomington: Indiana University Press.
- Gross, M. 2019. Not Knowing as Luxury: Strategic Nonknowledge and the Demand for a “Sportbrake”. *Luxury* 6 (1): 63–81. <https://doi.org/10.1080/20511817.2018.1738705>
- Gross, M., and L. McGoey. 2015. Introduction. In *Routledge international handbook of ignorance studies*, ed. M. Gross and L. McGoey, 1–14. London and New York: Routledge.
- Gross, M., and L. McGoey. 2022. Revolutionary epistemology: the promise and peril of ignorance studies. In *Routledge international handbook of ignorance studies* (2nd ed.), ed. M. Gross and L. McGoey, 3–14. London and New York: Routledge.
- Hallqvist, J. 2019. Digital health and the embodying of professionalism: Avatars as health professionals in Sweden. *Professions and Professionalism* 9 (2): e2847. <https://doi.org/10.7577/pp.2847>
- Harris, J.K., Mueller, N.L., and D. Snider. 2013. Social media adoption in local health departments nationwide. *American Journal of Public Health* 103 (9): 1700–1707. <https://doi.org/10.2105/AJPH.2012.301166>
- Hernandez, R.G., Hagen, L., Walker, K., O’Leary, H., and C. Lengacher. 2021. The COVID-19 vaccine social media infodemic: Healthcare providers’ missed dose in addressing misinformation and vaccine hesitancy. *Human Vaccines & Immunotherapeutics* 17 (9): 2962–2964. <https://doi.org/10.1080/21645515.2021.1912551>
- Hofmann, B., and F. Svenaeus. 2018. How medical technologies shape the experience of illness. *Life Sciences, Society and Policy* 14 (1): 3. <https://doi.org/10.1186/s40504-018-0069-y>
- Jasanoff, S., and S. Kim. 2009. Containing the atom: Sociotechnical imaginaries and nuclear power in the United States and South Korea. *Minerva* 47 (2): 119–146. <https://doi.org/10.1007/s11024-009-9124-4>
- Jasper, U. 2020. The anticipative medicalization of life: Governing future risk and uncertainty in (global) health. In *The politics and science of prevision: Governing and probing the future*, ed. A. Wenger, U. Jasper and M.D. Cavelti, 122–140. London: Routledge.
- Jones, S., Chudleigh, M., Baines, R., and R.B. Jones. 2021. Did introducing Twitter and digital professionalism as an assessed element of the nursing curriculum impact social media related incidence of ‘Fitness to practise’: 12-year case review. *Nurse Education in Practice* 50: 102950. <https://doi.org/10.1016/j.nepr.2020.102950>
- Kerwin, A. 1993. None too solid: Medical ignorance. *Knowledge* 15 (2): 166–185. <https://doi.org/10.1177/107554709301500204>
- Killbride, M.K., and S. Joffe. 2018. The new age of patient autonomy: Implications for the patient–physician relationship. *JAMA: The Journal of the American Medical Association* 320 (19): 1973–1974. <https://doi.org/10.1001/jama.2018.14382>
- Larson, H.J. 2018. The biggest pandemic risk? Viral misinformation. *Nature* 562 (7727): 309. <https://doi.org/10.1038/d41586-018-07034-4>

- Laurent-Simpson, A., and C.C. Lo. 2019. Risk society online: Zika virus, social media and distrust in the Centers for Disease Control and Prevention. *Sociology of Health & Illness* 41 (7): 1270–1288. <https://doi.org/10.1111/1467-9566.12924>
- Lupton, D. 2014. The commodification of patient opinion: The digital patient experience economy in the age of big data. *Sociology of Health & Illness* 36 (6): 856–869. <https://doi.org/10.1111/1467-9566.12109>
- Lupton, D. 2018. *Digital health: Critical and cross-disciplinary perspectives*. London: Routledge.
- Manning-Cork, N. 2019. Advancing professionalism, attentive to culture, to improve health systems. *Medical Education* 53 (11): 1069–1071. <https://doi.org/10.1111/medu.13960>
- Marchal, N., and H. Au. 2020. “Coronavirus EXPLAINED”: YouTube, COVID-19, and the socio-technical mediation of expertise. *Social Media + Society* 6 (3): 205630512094815. <https://doi.org/10.1177/2056305120948158>
- Martin, G.P., Currie, G., and R. Finn. 2009. Reconfiguring or reproducing intra-professional boundaries? Specialist expertise, generalist knowledge and the ‘modernization’ of the medical workforce. *Social Science & Medicine* 68 (7): 1191–1198. <https://doi.org/10.1016/j.socscimed.2009.01.006>
- Maslen, S., and D. Lupton. 2019. ‘Keeping it real’: Women’s enactments of lay health knowledges and expertise on Facebook. *Sociology of Health & Illness* 41 (8): 1637–1651. <https://doi.org/10.1111/1467-9566.12982>
- Mather, C.A., and E. Cummings. 2019. Developing and sustaining digital professionalism: A model for assessing readiness of healthcare environments and capability of nurses. *BMJ Health & Care Informatics* 26 (1): e100062. <http://dx.doi.org/10.1136/bmjhci-2019-100062>
- McGoey, L. 2012. The logic of strategic ignorance. *The British Journal of Sociology* 63 (3): 533–576. <https://doi.org/10.1111/j.1468-4446.2012.01424.x>
- McGoey, L. 2020. Micro-ignorance and macro-ignorance in the social sciences. *Social Research* 87 (1): 197–217. <https://doi.org/10.1353/sor.2020.0014>
- McPherson, S., Rost, F., Sidhu, S., and M. Dennis. 2020. Non-strategic ignorance: Considering the potential for a paradigm shift in evidence-based mental health. *Health* 24 (1): 3–20. <https://doi.org/10.1177/1363459318785720>
- Naples, R., Costas-Chavarri, A., Golden, D.W., Gmitter, E., French, J.C., and J.M. Lipman. 2020. Digital professionalism in patient care: A case-based survey of surgery faculty and trainees. *The Journal of Surgical Research* 253: 193–200. <https://doi.org/10.1016/j.jss.2020.03.057>
- Nerland, M., and M. Hasu. 2021. Challenging the belief in simple solutions: The need for epistemic practices in professional work. *Medical Education* 55 (1): 65–71. <https://doi.org/10.1111/medu.14294>
- Nie, J., Cheng, Y., Zou, X., Gong, N., Tucker, J.D., Wong, B., and A. Kleinman. 2018. The vicious circle of patient–physician mistrust in China: Health professionals’ perspectives, institutional conflict of interest, and building trust through medical professionalism. *Developing World Bioethics* 18 (1): 26–36. <https://doi.org/10.1111/dewb.12170>

- Nielsen, R.K., and L. Graves. 2017. “News you don’t believe”: Audience perspectives on fake news. Reuters Institute for the Study of Journalism.
https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2017-10/Nielsen%26Graves_factsheet_1710v3_FINAL_download.pdf. Accessed 21 June 2021.
- Numerato, D., Vochocová, L., Štětka, V., and A. Macková. 2019. The vaccination debate in the “post-truth” era: Social media as sites of multi-layered reflexivity. *Sociology of Health & Illness* 41 (S1): 82–97. <https://doi.org/10.1111/1467-9566.12873>
- Palomino-Gonzales, M.M., Lovón-Cueva, M.A., and R.d.C. Arellanos-Tafur. 2020. The health network and its participation in the dissemination or containment of fake news and hoaxes related to COVID-19: The case of Lima-Peru. *Chasqui: Revista Latinoamericana De Comunicación* 1 (145): 93–118.
<https://revistachasqui.org/index.php/chasqui/article/view/4332>
- Parviainen, J., and J. Aromaa. 2017. Bodily knowledge beyond motor skills and physical fitness: A phenomenological description of knowledge formation in physical training. *Sport, Education and Society* 22 (4): 477–492.
<https://doi.org/10.1080/13573322.2015.1054273>
- Parviainen, J., and A. Koski. 2023. ‘In the future, as robots become more widespread’: A phenomenological approach to imaginary technologies in healthcare organisations. In *The Oxford Handbook of Phenomenologies and Organization Studies*, ed. F.X. De Vaujany, J. Aroles and M. Pérezts, 277–296. Oxford: Oxford University Press.
- Perron, A., Rudge, T., and M. Gagnon. 2020. Hypervisible nurses: Effects of circulating ignorance and knowledge on acts of whistleblowing in health. *Advances in Nursing Science* 43 (2): 114–131. <https://doi.org/10.1097/ANS.0000000000000311>
- Piras, E.M., and F. Miele. 2019. On digital intimacy: Redefining provider–patient relationships in remote monitoring. *Sociology of Health & Illness* 41: 116–131.
<https://doi.org/10.1111/1467-9566.12947>
- Pulido, C.M., Ruiz-Eugenio, L., Redondo-Sama, G., and B. Villarejo-Carballido. 2020. A new application of social impact in social media for overcoming fake news in health. *International Journal of Environmental Research and Public Health* 17 (7): 2430.
<https://doi.org/10.3390/ijerph17072430>
- Ratzan, S.C., Sommariva, S., and L. Rauh. 2020. Enhancing global health communication during a crisis: Lessons from the COVID-19 pandemic. *Public Health Research & Practice* 30 (2): 3022010. <https://doi.org/10.17061/phrp3022010>
- Rayner, S. 2012. Uncomfortable knowledge: The social construction of ignorance in science and environmental policy discourses. *Economy and Society* 41 (1): 107–125.
<https://doi.org/10.1080/03085147.2011.637335>
- Roberts, J. 2013. Organizational ignorance: Towards a managerial perspective on the unknown. *Management Learning* 44 (3): 215–236.
<https://doi.org/10.1177/1350507612443208>
- Rodgers, K., and N. Massac. 2020. Misinformation: A threat to the public’s health and the public health system. *Journal of Public Health Management and Practice* 26 (3): 294–296. <https://doi.org/10.1097/PHH.0000000000001163>

- Rosendal, M., Olde Hartman, T.C., Aamlund, A., Van Der Horst, H., Lucassen, P., Budtz-Lilly, A., and C. Burton. 2017. “Medically unexplained” symptoms and symptom disorders in primary care: Prognosis-based recognition and classification. *BMC Family Practice* 18: 18. <https://doi.org/10.1186/s12875-017-0592-6>
- Ruan, B., Yilmaz, Y., Lu, D., Lee, M., and T.M. Chan. 2020. Defining the digital self: A qualitative study to explore the digital component of professional identity in the health professions. *Journal of Medical Internet Research* 22 (9): e21416. <https://doi.org/10.2196/21416>
- Sendra, A., and J. Farré. 2017. Institutional pain communication via Twitter by Spanish and US pain societies: Analysis of levels of use and engagement. *Catalan Journal of Communication & Cultural Studies* 9 (1): 3–23. https://doi.org/10.1386/cjcs.9.1.3_1
- Sendra, A., and J. Farré. 2020. Communicating the experience of chronic pain through social media: Patients’ narrative practices on Instagram. *Journal of Communication in Healthcare* 13 (1): 46–54. <https://doi.org/10.1080/17538068.2020.1752982>
- Sendra, A., Farré, J., and R.W. Vaagan. 2020. Seeking, sharing and co-creating: A systematic review of the relation between social support theory, social media use and chronic diseases. *Social Theory & Health* 18 (4): 317–339. <https://doi.org/10.1057/s41285-019-00106-z>
- Sismondo, S. 2020. Sociotechnical imaginaries: An accidental themed issue. *Social Studies of Science* 50 (4): 505–507. <https://doi.org/10.1177/0306312720944753>
- Sosnowy, C. 2014. Practicing patienthood online: Social media, chronic illness, and lay expertise. *Societies* 4 (2): 316–329. <https://doi.org/10.3390/soc4020316>
- Stein, F. 2020. Blinded by the slide show: Ignorance and the commodification of expertise. *Critique of Anthropology* 40 (4): 420–437. <https://doi.org/10.1177/0308275X20959409>
- Tempini, N., and L. Del Savio. 2019. Digital orphans: Data closure and openness in patient-powered networks. *BioSocieties* 14 (2): 205–227. <https://doi.org/10.1057/s41292-018-0125-0>
- Timmermann, C. 2020. Epistemic ignorance, poverty and the COVID-19 pandemic. *Asian Bioethics Review* 12 (4): 519–527. <https://doi.org/10.1007/s41649-020-00140-4>
- Tjora, A.H., and G. Scambler. 2009. Square pegs in round holes: Information systems, hospitals and the significance of contextual awareness. *Social Science & Medicine* 68 (3): 519–525. <https://doi.org/10.1016/j.socscimed.2008.11.005>
- Torkkola, S., Vuolanto, P., and J. Parviainen. 2019. *Social media and professional communication in the health care organization*. NordMedia 2019: Communication, Creativity & Imagination – Challenging the Field, 21–23 August, Malmö.
- Usher, N., and Y.M.M. Ng. 2020. Sharing knowledge and “Microbubbles”: Epistemic communities and insularity in US political journalism. *Social Media + Society* 6 (2): 205630512092663. <https://doi.org/10.1177/2056305120926639>
- Van Dijck, J., and D. Alinead. 2020. Social media and trust in scientific expertise: Debating the COVID-19 pandemic in the Netherlands. *Social Media + Society* 6 (4). <https://doi.org/10.1177/2056305120981057>

- Ventola, C.L. 2014. Social media and health care professionals: Benefits, risks, and best practices. *Pharmacy and Therapeutics* 39 (7): 491–520.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4103576/>
- Versteeg, W., Te Molder, H., and P. Sneijder. 2018. “Listen to your body”: Participants’ alternative to science in online health discussions. *Health* 22 (5): 432–450.
<https://doi.org/10.1177/1363459317695632>
- Wagner, A., Polak, P., and M. Świątkiewicz-Mośny. 2019. Who defines – Who decides? Theorising the epistemic communities, communities of practice and interest groups in the healthcare field: A discursive approach. *Social Theory & Health* 17 (2): 192–212.
<https://doi.org/10.1057/s41285-018-0073-6>
- Wagner, A., Polak, P., and M. Świątkiewicz-Mośny. 2021. From community of practice to epistemic community – Law, discipline and security in the battle for the legalisation of medical cannabis in Poland. *Sociology of Health & Illness* 43 (2): 316–335.
<https://doi.org/10.1111/1467-9566.13217>
- Wehling, P. 2015. Fighting a losing battle? The right not to know and the dynamics of biomedical knowledge production. In *Routledge international handbook of ignorance studies*, ed. M. Gross and L. McGoey, 206–214. London and New York: Routledge.
- Whooley, O., and K.K. Barker. 2021. Uncertain and under quarantine: Toward a sociology of medical ignorance. *Journal of Health and Social Behavior* 62 (3): 271–285.
<https://doi.org/10.1177/00221465211009202>
- Wilkesmann, M. 2016. Ignorance management in hospitals. *VINE Journal of Information and Knowledge Management Systems* 46 (4): 430–449.
<https://doi.org/10.1108/VJIKMS-08-2016-0046>
- Will, C.M. 2020. The problem and the productivity of ignorance: Public health campaigns on antibiotic stewardship. *The Sociological Review* 68 (1): 55–76.
<https://doi.org/10.1177/0038026119887330>
- Williams, D. 2021a. Motivated ignorance, rationality, and democratic politics. *Synthese* 198: 7807–7827. <https://doi.org/10.1007/s11229-020-02549-8>
- Williams, D. 2021b. To communicate scientific research, we need to confront motivated ignorance. LSE Impact Blog.
<https://blogs.lse.ac.uk/impactofsocialsciences/2021/01/13/to-communicate-scientific-research-we-need-to-confront-motivated-ignorance/>. Accessed 21 June 2021.
- Wright, K.B. 2016. Communication in health-related online social support groups/communities: A review of research on predictors of participation, applications of social support theory, and health outcomes. *Review of Communication Research* 4: 65–87. <https://doi.org/10.12840/issn.2255-4165.2016.04.01.010>