

FULL PAPER

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in komplexen Entscheidungsprozessen**

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Navigating health communication: The effects of mediatization on responsibility in complex decision-making

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Abstract: This article investigates the mediatization of responsibility in the context of health care decision-making and biological citizenship. The analyzes how Danish parents navigate the pervasiveness, polysemy, and media logic of health communication, and how the authority and legitimacy of certain types of health communication play into their sense of responsibility. The study consists of interviews with 18 Danish parents who were in the process of deciding or had recently decided on whether to give their child the human papillomavirus (HPV) vaccine. This study draws on mediatization theory, sociological theory of responsibility, and research on health communication to illustrate the media-centered conditions that shape parents' decision-making processes. We find that the pervasiveness and polysemic nature of the information available about the vaccine creates an imperative to understand the information while parents also have to navigate the media logic regarding media's motivation for presenting information about HPV vaccines in certain ways. As a consequence, parents' decision-making responsibility as biological citizens is undergoing significant changes that place increasing responsibility on the parents in this study.

Keywords: Mediatization, sociology of responsibility, health communication, vaccination, media logic, biological citizenship.

Zusammenfassung: Dieser Artikel analysiert die Mediatisierung von Verantwortung im Kontext von Entscheidungen bezüglich Gesundheitsvorsorge und biologischer Staatsbürgerschaft. Er untersucht, wie dänische Eltern die Allgegenwärtigkeit, Vieldeutigkeit und Medienbasiertheit der Gesundheitskommunikation bewältigen und wie die Autorität und Legitimität bestimmter Modi der Gesundheitskommunikation ihr Verantwortungsgefühl beeinflussen. Die Studie basiert auf Interviews mit 18 dänischen Eltern, die sich gerade in der Entscheidungsfindung befanden oder kürzlich entschieden hatten, ob sie ihrem Kind den Impfstoff gegen das humane Papillomavirus (HPV) verabreichen lassen. Sie stützt sich auf die Mediatisierungstheorie, die soziologische Verantwortungstheorie sowie auf Forschung zur Gesundheitskommunikation, um die medienzentrierten Voraussetzungen herauszuarbeiten, die den Entscheidungsprozess der Eltern prägen. Zu unseren wesentlichen Befunden zählt, dass die Allgegenwärtigkeit und Vieldeutigkeit der verfügbaren Informationen zum Impfstoff die Erwartung erzeugt, sich mit diesen Informationen auseinanderzusetzen. Zugleich sehen sich Eltern dazu herausgefordert, mit der Motivation von Medien – die Informationen über HPV-Impfstoffe jeweils in spezifischer Weise darstellen – umzuge-

hen. Infolgedessen unterliegt die Entscheidungsverantwortung der Eltern als biologische Bürger erheblichen Wandlungsprozessen, welche die Verantwortung zunehmend auf die im Rahmen der Studie untersuchten Eltern verlagern.

Schlagwörter: Mediatisierung, Soziologie der Verantwortung, Gesundheitskommunikation, Schutzimpfung, Medienlogik, biologische Staatsbürgerschaft.

1. Introduction

Vaccination is an issue that continuously proves contentious. Vaccines have sparked concern among those making the decision since the very beginning of vaccination and continue to be controversial (Gottlieb, 2018; Hausman, 2019). The media's diverse dissemination of health information, in particular in the context of vaccines, became more relevant in the recent context of the COVID-19 pandemic. Parents were again having to navigate the many media spaces that disseminate health information and the media's use of researchers, opinion makers, and politicians as experts on vaccination. The increasing importance of broadcast, printed, and digital media in providing information about vaccines calls for examination of the role of the media in relation to such a complex health issue, as parents have to make decisions on behalf of their children. In this article, we seek to add to knowledge about the role the media plays when individuals are making an informed decision about a complex health topic. Specifically, we wish to understand the role digital media plays in how parents perceive their decision-making responsibility regarding HPV vaccination in Denmark.

This study analyzes interviews with 18 Danish parents who were in the process of deciding whether their child should get the HPV vaccine. HPV vaccination in Denmark is an interesting case: childhood vaccination rates are generally high in Denmark (Sander et al., 2012), and the HPV vaccine was also expected to have high coverage, which it did in the first years after its introduction (Sander et al., 2012; Suppli et al., 2018; Widgren et al., 2011). However, following negative media coverage, in particular one documentary broadcast on national television questioning the HPV vaccine's safety, vaccine uptake declined (Suppli et al., 2018; Gørtz et al., 2020). Specifically, in a study examining the decline Denmark experienced in HPV vaccination, Suppli et al. (2018) find clear indications that the reduced vaccine uptake was related to an increase in negative media attention about HPV vaccination.

In order to expand the knowledge about the role digital media plays in parents' perception of responsibility when making a decision about a vaccine in a context with opposing discourses (Mohr & Frederiksen, 2020), we build on a mediatization framework. Mediatization has become an important framework in the study of media as it conceptualizes how media, culture, and society are mutually influenced and formed by each other, thus becoming increasingly interdependent; Ekström et al., 2016; Hepp et al., 2015; Hjarvard, 2008, 2014; Krotz, 2014; Petersen, 2023). In this article, we explore the mediatization of health, which has previously been studied in, for example, Jülich (2016), who shows how media and medicine were co-produced and interacted in Sweden from the 1940s to the 1970s. However,

media's influence on health has become more profound with time, and different types of mediatized health production are argued to have increased in the last decades (Kamin, 2007). Media are argued to play an influential role in the understanding of the healthy citizen (Kamin, 2007), digital media provide spaces where "alternative interpretations of science and health can be exchanged" (Mak, 2015, p. 561), and, furthermore, presentations of health in media are found to challenge traditional health expertise (Christensen, 2017). Specifically, experts' role in providing health advice has been subsumed into the logic of the media, resulting in a medical expertise focus on medical care being succeeded by lifestyle expertise "focusing on the individual responsibility for prevention" (Christensen, 2016, pp. 214–215). Previous research has shown the different ways laypeople engage with media and why they engage the way they do in relation to vaccines (Nordtug, 2021; Nordtug, 2022a). In this article, we will focus on whether the shifting responsibilities pertaining to vaccination are intertwined with mediatization processes by asking the following question:

How can we understand the role of digital media in parents' perception of decision-making responsibility and understanding of information about the HPV vaccine?

To explore this, we engage in interdisciplinary work, bridging media studies and the sociology of health and illness. Specifically, we engage with Rose's theoretical framework conceptualizing the biological citizen (Rose, 2007). By doing so we meet mediatization studies' ambition to bridge various disciplines (Ekström et al., 2016; Hepp et al., 2015; Petersen, 2023). While the present study is limited to Danish parents and their decision to give their children the HPV vaccine, the issue of parents' sense of responsibility for making health decisions on behalf of their children is more pertinent than ever with the distribution of COVID vaccines to children from the age of five. Equally, the media's vast dissemination of health communication following the spread of COVID and the COVID vaccines means that it is ever more pertinent to understand how media plays into decision-making processes when it comes to individual and family health. Furthermore, the topic of vaccines is not the only health topic subject to inherent tensions. For instance, in the era of responsabilization, women have been found to seek information about pregnancy from various sources including online information that both is and is not grounded in medical expertise in an attempt to 'do their research' (Hinton et al., 2021; Mackintosh et al., 2020). Similarly, mothers have been found to complement information from medical professionals with online information when managing allergy risks in their children's diet (Jurich, 2021). On the topic of mental health, parents have also been found to turn to friends and family for help before seeking professional support (Migliorini et al., 2023). Thus, it is important to understand parents' navigation and sense of responsibility in making health decisions.

2. Mediatization of health

The concept of mediatization is much debated (see for instance Deacon & Stanyer, 2014; Deacon & Stanyer, 2015; Hepp et al., 2015; Lunt & Livingstone, 2016), but there appears to be a consensus among scholars who engage with the theoretical framework of mediatization that mediatization “applies to *long-term transformations* of sociocultural practices and institutions, assumed to be related to an *increase* in the speed and implications of media as technologies, institutions and cultural forms” (Ekström et al., 2016, p. 1093). In other words, mediatization refers to how social spheres undergo long-term transformations as they interact with media (Lundby, 2014). Research on mediatization has considered a range of areas of culture and society, such as politics, religion, war, and fashion (Bolin, 2014; Kopecka-Piech & Bolin, 2023). Mediatization processes are intertwined with other long-term processes (Krotz, 2014) and consequently, it can be argued that mediatization is not only an interesting concept in media studies, but rather a contribution to social theory in a wider sense (Couldry, 2014).

As mentioned, mediatization research is concerned with media’s role in societal transformations (Hepp, 2013, 2020; Hjarvard, 2014) and aims to consider the dual influences of media and other societal spheres; in this study we are interested in the areas of health communication and responsibility connected to decision-making for the HPV vaccine. Mediatization studies thus need to be anchored in a specific cultural context (Ekström et al., 2016; Petersen, 2023) and consider the dynamics of social interaction (Lundby, 2009) and media logic (Hjarvard, 2014). Social interaction, for Lundby, is central to understanding the transformative processes of mediatization, and “how media interfere in patterns of social interaction will be central” (Lundby, 2009, p. 113). In the context of parents making decisions about whether to vaccinate their children with the HPV vaccine, their interaction with media and media content comes into focus in several ways. First, some parents seek out media-based content; whether popular dissemination of health information, information from official health authorities, or user-generated comments and debates when searching for information on and experiences of the efficacy and safety of the vaccine. Second, media programs and the news present stories related to the HPV vaccine that parents may not have sought out, but that become part of the national, cultural discourse and offer specific views to parents in the decision-making-process. Based on the theory of mediatization, we aim to consider the non-linear processes of change and the aim here is thus not to suggest that media’s messaging imposes particular viewpoints on parents (as a direct cause and effect), but rather that parents’ decision-making processes are intertwined with their media use and the health information they obtain from a range of media-based sources. In the contemporary media landscape, parents have to navigate large amounts of information and sort through issues of validity, reliability, and authority on platforms and in programs where these issues are not easily discernible. In a study of the relationship between the health industry and journalism, Morell et al. comment that “[r]eports of health news on television, on radio, and in newspapers are a major source of health information for the public and have been shown to have

significant health impacts, perhaps even beyond those of well-funded government public health initiatives” (2014, p. 233).

In news reporting, popular programming and user-generated health-related content are subsumed into a media logic (Altheide & Snow, 1979), meaning that the communication of these issues is shaped by the logic of the media and their formats. For example, a popular documentary from 2015 produced by the Danish national broadcasting company, TV2, focused on a group of young girls and women who had experienced health issues around the time they had received the HPV vaccine (Suppli et al., 2018). In the documentary, the girls, their families, and health professionals linked the girls’ health issues to the vaccine. In presenting the girls’ and their families’ interpretation of their symptoms, the documentary put forward the notion that these health issues are side-effects of the HPV vaccine. At the time of broadcast, there was a great deal of debate in the Danish press about the reasonableness of airing such a documentary without strong scientific backing for the participants’ claims. Others, however, saw warning parents who were considering having their children vaccinated as potentially crucial, and the creators of the documentary were nominated for a prestigious Cawling award for Danish journalism. This case demonstrates an important point in the context of mediatization of health. A documentary aims to draw in viewers and keep them engaged throughout. As such, the presentation of scientific knowledge of health information will be negotiated against the producers’ ambition to produce ‘good television’ (Petersen, 2017) that creates public debate and keeps viewers hooked. Media content on the HPV vaccine is thus subsumed into a media logic depending on parameters such as platform, genre, and format, and the possibility for interaction. On social media, for example, parents are able to weigh in with their personal, lived experiences, and while they may not be an authority in their own right, the presence of ongoing, active forums and discussion becomes part of the overall health communication about the vaccine. Here, the curation of content is not founded in journalistic principles of accuracy and relevance, but on the digital infrastructure of the platforms, algorithms, and the appeal of heightened emotional content (Petersen, 2022).

This study examines the consequences of these transformative processes where health information is subsumed into a media logic in order to understand how parents’ sense of responsibility is shaped in interaction with multiple and varied media representations. Giddens’ concept of reflexivity of modernity points to consequences in the relationship “between expert knowledge and knowledge applied in lay actions” (Giddens, 1990, p. 45) as being characterized by mutability and instability. Giddens argues, “[t]he point is not that there is no stable social world to know, but that knowledge of that world contributes to its unstable or mutable character” (Giddens, 1990, p. 45). Following this, we are interested in what role the presence of a ubiquitous media landscape plays in this disconnect between what is known and what is decided. Giddens emphasizes: “If our knowledge about the social world simply got better and better, the scope of unintended consequences might become more and more confined and unwanted consequences rare. However, the reflexivity of modern social life blocks off this possibility...” (Giddens, 1990, p. 44ff). Instead, knowledge about health issues and the communication of these

issues in terms of guidelines, recommendations, or descriptions of lived experiences are all filtered through media and subsumed to a media logic. Individuals in modern societies have to navigate decision-making in the context of a “never-to-be-relaxed – monitoring of behaviour and its contexts” (Giddens, 1990, p. 37) including monitoring of media content and its context. Knowledge, then, is not merely a question of knowing ‘what is out there’, but a question of navigating the communicated knowledge against its appropriate setting.

This study investigates how parents navigate the polysemy of health communication from various sources, including health communication produced by the health industry, health communication produced by the media industry, and user-produced health communication. The aim here is not to analyze the media content, but to gain insight into how parents navigate this content and ascribe legitimacy and authority to media-produced content in their decision-making processes.

3. Sociological perspectives on responsibility

Historically, vaccination has been understood as a way to maintain a labor force by ensuring that the children of a state matured in good health (Foucault, 2014; Lupton, 2012). The family, according to Foucault (2014), had the moral responsibility to vaccinate, thus ensuring the health of the population (Foucault & Senellart, 2007). As such, health – and vaccination – became a moral imperative for families (Foucault, 2014; Hausman, 2019). In the twenty-first century, individuals are discursively understood as morally responsible for maintaining their own health including managing the risks of their own (or their children’s) susceptibilities to (not) being vaccinated (Rose, 2007). As such, individuals are expected to consider health-related decisions such as vaccines. Responsibility, in this sense, is thus a moral responsibility to become well-informed, calculate, and make choices to maximize one’s own health or the health of one’s children (Foucault, 2014; Rose, 2007). It is a “moral imperative to become informed” (Hobson-West, 2007, p. 212), and do one’s best to ensure a vital future (Stage, 2015). Consequently, in modern Western societies, individuals are increasingly expected to “engage in a constant work of self-evaluation and the modulation of conduct, diet, lifestyle, and drug regime, in response to the changing requirements of the susceptible body” (Rose, 2007, p. 154). By doing so, individuals behave as active, responsible biological citizens.

Individuals’ moral responsibility to maintain their own health has become key in the twenty-first century, and concerns a wide array of health issues, and, as such, individuals are still urged to take responsibility to avoid illness (Hobson-West, 2007; Lupton, 2012). However, though individuals have a moral imperative to become informed and make calculated decisions, deciding to *reject* a vaccine is considered a bad assessment in mainstream scientific positions. Thus, being morally responsible for making decisions about vaccines appears partially paradoxical. This is, for instance, articulated by Hausman: “Responsibility is necessary and good, therefore, unless the enactment of it leads to behaviors that contravene socially normative expectations” (Hausman, 2019, p. 83).

On the topic of vaccination, individuals have been found to have mixed experiences of being responsible for understanding information about vaccines (Nordtug, 2021; Nordtug, 2022a). Being discursively positioned as responsible can be considered empowering, but it can also, for instance, be considered undesirable, if individuals are unable to comply with the discursive expectations of biological citizenship (Erikainen et al., 2019; Lawless et al., 2018; Nordtug, 2022a). This could for instance be the case if they feel “unable or reluctant to comply with the expectations associated with this responsabilization” (Nordtug, 2022a, p. 691). In a previous article, the first author of this article found that parents’ understanding of themselves and other actors in relation to their responsibility to understand information about vaccination influences how they engage with digital media on the topic (Nordtug, 2022a). As such, parents’ perception of the responsibility to understand information about HPV vaccination is linked to their digital media engagement. By turning this around, we seek in this article to also explore digital media’s role in parents’ perception of responsibility, thus shedding light on how the digital media and perceptions of responsibility mutually influence and form each other.

4. Methodological approach

4.1 Data collection

Our study is based on a qualitative interview study. Qualitative interviews were chosen as the method for this study because this approach can help to illustrate the complexity of a situation (Creswell, 2014). In order to reach an understanding of the various aspects of vaccination and media engagement, qualitative interviews can help to provide a deep understanding of people’s experiences (Tanggaard & Brinkman, 2015). Between January 2018 and June 2019, the first author interviewed 18 Danish parents who were in the process of deciding whether their daughters (aged 10 to 13) should be vaccinated. Parents were interviewed because they play a prominent role in HPV vaccination decisions for their children (e.g., Brabin et al., 2009; Griffioen et al., 2012; Nordtug, 2022a; Virtanen, 2019), and, in this study, the parents interviewed were specifically making a decision about vaccination against human papillomavirus (HPV).

Prior to conducting the interviews, the first author secured approval for the data collection by the Institutional Review Board of the University of Southern Denmark. Parents were included if they had at least one daughter aged 10 to 13 years old, and if they were currently deciding on the vaccine or had recently decided on the vaccine. From the outset of the project, the first author aimed to interview at least twelve parents. This is based on previous research showing that researchers will often reach saturation after this amount of interviews (Guest et al., 2006). All participating parents consented to participate in the study based on information about the aim of the study. Specifically, the parents were told the aim of the study was to explore what it means to make a decision about HPV vaccination on behalf of their children. The interviews lasted between 44 minutes and 1 hour and 59 minutes, and were conducted at a time and place that best suited the parents. The

differences in interview length were partially due to how much time parents were able to spend on the interview, and partially due to how talkative the parents were. Parents were recruited through schools and snowball sampling. This recruitment strategy was chosen in an attempt to reach a variety of parents and not just interview parents with, for instance, one specific educational background. The reason for including parents of various educational backgrounds is that education levels have been found to influence both decisions regarding vaccines (Aharon et al., 2017; Gørtz et al., 2020) and how likely parents are to make use of the internet to obtain information about vaccines (Hughes et al., 2009). Specifically, in the Danish HPV vaccination case, it has been found that parents with a lower level of education and parents who are highly educated were more likely to decline HPV vaccination. Naturally, performing a qualitative study, we cannot use the parents' educational background as a control variable to conclude relations between education and vaccine behavior. However, by including parents of various backgrounds, we make sure to include a variety of parent voices and arguments in our analysis.

During the interviews, the parents were asked various questions, including about finding information about HPV vaccination and how to prepare for making a decision about the vaccine. These questions stemmed from a semi-structured interview guide that for instance included questions such as "How do you feel about the HPV vaccine?"; "In your experience, how do other parents in Denmark gain trust in information about the HPV vaccine? [Following up:] 1) How does this relate to your own way of doing so? 2) How would you characterize the role of digital media in this?"; and "How do you think one best prepares oneself to make a decision about the HPV vaccine?" Furthermore, parents were asked to map everything they found relevant in relation to HPV vaccination and how to find information about it based on open-ended questions including: "If I say HPV vaccination, could you write down everything that somehow matters in relation to that?" and "What opportunities do you have to get information about HPV vaccination?". This method enabled the parents to highlight what mattered on the topic (Nordtug, 2022b). The questions were exploratory and were all related to how to deal with making a decision about HPV vaccination, with some questions mirroring topics that have been found to be of concern in relation to making decisions about vaccines, specifically the issue of trust (Hobson-West, 2007).

The parents who were interviewed had various educational backgrounds, including basic school education, vocational training, as well as short-cycle, further, and higher education. The majority of interviewed participants (16/18) were mothers, which may be an empirical challenge as we wished to explore 'parents'. However, making decisions about vaccines is often the responsibility of mothers (e.g., Albert, 2019; Grandahl et al., 2017; Kemberling et al., 2011; Lindsay et al., 2021), which is why we decided that the overrepresentation of mothers was acceptable in this study.

4.2 Data analysis

All interviews were transcribed prior to analysis. Our study is based on a study inspired by Situational Analysis (Clarke et al., 2018). In Situational Analysis, researchers focus on relationality in a situation and seek “to understand the dense complexities of a particular situation broadly conceived” (Clarke et al., 2018, p. xxiv). In the research project that this article stems from, the entire data material has been analyzed following Situational Analysis’ focus on mapping. This analysis was divided into several processes. First, in the initial analysis, based on the parents’ mapping in the interviews, the first author mapped relations between elements parents considered pertinent in relation to HPV vaccination in the computer-assisted qualitative data analysis software NVivo (see also Nordtug, 2022b). Specifically, the first author conducted queries in NVivo to understand how different elements were related to each other. This is a method to both think through the data and can be a way for researchers “to decide which stories about your situation – *which relations* – to pursue” (Clarke et al., 2018, p. 140). There were many elements that had appeared pertinent to the interviewed parents, including for instance ‘side effects’, ‘illnesses caused by the human papillomavirus’, ‘trust in medical practitioners’, ‘social media’, and ‘the parents’ social circle’. One of the topics that the mapping identified was the relationship between the elements ‘being a responsible parent’ and ‘digital media engagement’, which is an interesting topic to explore from a mediatization framework perspective. In this article, we therefore decided to explore whether and how perception of the responsibility for understanding information about vaccination was transformed by interaction with media content.

The analytical work specifically related to this article included the first author coding the empirical material for transformations linking media and perceptions of responsibility. The transformations were derived inductively, though the coding was conducted with a mediatization framework in mind. During this coding, three overall transformations were identified. Based on the initial coding of the empirical work, both authors subsequently discussed, further developed, and named the categories. The three inductively derived categories, which will be introduced in the analysis, are (1) the pervasiveness of health communication, (2) the polysemy of health communication, and (3) the media logic of health communication. These categories are not mutually exclusive, but overlap in several ways. However, they are also distinct categories that parents navigate in their search for health communication in relation to vaccines. For the purposes of this article, we translated quotes from the interviews from Danish into English. To meet the need for qualitative credibility (Tracy, 2010), we have included multiple voices and a range of opinions to thus show the complexity of the material.

5. Analysis: The displacement of responsibility

In the following sections, we will explore how the changing responsibilities of the biological citizen have fallen into place in interaction with media. The analysis is based on an understanding that health has been transformed in interaction with media, thereby constituting the identity of the modern healthy citizen (Kamin,

2007), shifted towards a focus on the individual's responsibility for their health (Christensen, 2016), and challenged traditional expertise (Mak, 2015). In the following, we explore transformations linking media and perceptions of responsibility. The analysis points to three different transformations that contribute to displacing the responsibility for understanding information about HPV vaccination. Specifically, through our inductive analysis, we find that *the pervasiveness of health communication*, *the polysemy of health communication*, and *the media logic of health communication* all contribute to parents' perception of responsibility for understanding information about HPV vaccination. Other transformations occur in the material as well. However, it is not clear from the analysis whether these transformations contribute to displacing the responsibility, and they will not be elaborated on here.

5.1 The pervasiveness of health communication

Referring to quantitative aspects of mediatization, Hepp (2012) describes "the increasing number of technologically mediated communication" as becoming more accessible temporally and spatially (Hepp, 2012, p. 13, see also Hepp 2020). The internet provides many sources of information about health topics such as vaccination, and, in Denmark, the internet is a commonly used and important source of health information (Tassy et al., 2018). This *pervasiveness of health communication* through the internet is a transformation that can contribute to displacing decision-making responsibility. The pervasiveness of information available creates a complex media landscape, as a mother with a bachelor's degree commented:

Well, because you're bombarded with knowledge and you can search for everything, you know. You can search for English articles, American articles, I mean, you can basically search around the globe on the same topic, right? And again, you have different outlooks on the world depending on where you're from. So, I think, the information is huge. (Ruth)

Furthermore, the parents do not necessarily remember where they found different pieces of information. For instance, when talking about finding information about HPV vaccination, one mother with a short-cycle education said:

But the next time I come across an HPV vaccine case, it'll come up again and there's so much on it and I won't remember... I have to google it again. Like, when you ask where and which sites I've read about it – I don't know. (Naomi)

To a great extent, this transformation entails a displacement of responsibility onto parents in the sense that parents feel a responsibility to search for the relevant information in order to make a decision about the HPV vaccine. The amount of information available makes demands of some parents' information gathering process, as they feel responsible for seeking out the information available about the vaccine, which makes the decision more difficult. The many opportunities digital media provides to find a large amount of information creates a responsibility to read and sort through much of the information, though the parents might not

understand all the information available. As such, media transforms how parents feel they should engage with health communication (Lundby, 2009). Finding a great deal of qualified information might be considered a matter of course, as expressed by a father with a master's degree: "Well, for example, when I – in the context of the HPV vaccine, I have of course searched for side effects and I have followed the debate, but also read conclusions on reports that have been made on the topic" (James). When parents meet the call for a complex information gathering process, as seen in James' quote, it can be argued that they satisfy the expectations of biological citizenship (Rose, 2007). Parents may thus use the many sources of health information available to meet the moral imperative to become informed by trying to find out about their children's susceptibilities to both HPV and the HPV vaccine (Hobson-West, 2007; Rose, 2007). The many opportunities, however, can also be considered confusing. As one mother said: "One could become more confused than enlightened" (Sienna). Nevertheless, these parents make demands of themselves to find information and be source-critical when doing so. Some parents try to circumvent the potential responsibility for addressing the large amount of information. They might experience or expect consulting digital information sources to be confusing. Consequently, they prefer to get their information from other sources such as television news, health professionals, or health authorities, potentially putting into dispute the idea of parents meeting the moral imperative as they are reluctant to be responsible for understanding information about the vaccine (Nordtug, 2022a; Rose, 2007).

5.2 The polysemy of health communication

In Denmark, the HPV vaccination program was subject to discursive struggles, meaning that "opposing discourses of risk" were presented (Mohr & Frederiksen, 2020). The TV documentary referred to above presented the vaccine risk differently than the information texts from the Danish Health Authority and the Health Board, thus creating ambivalence among parents. Jansson (2018) ties mediatization to the polysemic nature of media content in contemporary society shaped by transmedial media use: "polymedia represents environments where there are sometimes too many options to handle; and the culture of connectivity normalizes expectations of staying online, connected and tuned in most of the time" (Jansson, 2018, p. 16). This *polysemy* of the health information available through digital media appears to be a transformation that contributes to the displacement of parents' responsibility in the decision-making process. In the context of his theory on deep mediatization, Hepp (2020) pinpoints exactly "the differentiation of highly connected digital media" (p. 5) as consequential in transformations of societal domains.

Some parents believe that the internet provides a wide range of information compared to information sources such as a leaflet. The polysemy of available information to a large extent displaces the responsibility onto parents. The wide range of information on the internet may lead parents to think they should consult it to find further information: "That's why it might be good to go and look on the internet" (Ivy). The parents might not actually get around to looking up the wider

range of information, but the obligation to do so lingers with them. They thus feel responsible for becoming well-informed (Foucault, 2014; Rose, 2007). To live up to this responsibility, some parents feel a need to consult as many sources as possible: “*So as many sources as possible, I think, that gets you the best basis for a decision, the more people you can ask who could potentially know something about it*” (Sienna). The wide range of information, however, also means parents need to take a critical stance to the information they come across. As suggested by Mak (2015), alternative interpretations of health can be found through digital media, and parents need to navigate the information available. Access to a wide range of digital information sources means finding out “*which filter to put on, who you want to trust*” (James), when you want to find out something about the HPV vaccination. Also, information found on one website might need to be validated on other websites:

I think, it's whether, I mean, if I experience that, I think that's probably also why I visit three websites. Because I have to make sure that what I read on the first site is right (...). Then I go to another site to critically check what they've written. Have they roughly written the same, or yeah, with the same side effects and such, well, then I think, well, then I can start trusting it. I mean, then I trust that it's correct. And then there's the thing with me going onto the Danish Health Authority site, and I go onto [an institute under the Danish Ministry of Health], and check, yeah. (Lauren)

The availability of information thus transforms the understanding of which tasks that need to be done to make a good decision about health (Hjarvard, 2014; Lundby, 2009).

The experience of finding contradictory information and ‘evidence’ on the internet, may lead to parents expressing a mistrust in research, as “*you can find what you are looking for*” (Ruth), thus displacing the responsibility away from research, as explained by this mother with a bachelor’s degree:

And we know that researchers are paid by some bloc or another to show something, right? Then you might get a little, oh, but, then what? That report, who paid for it and what is it, what has it been paid to show? So if you, if you get someone to study those who are on the yes-side, then they definitely have to sound like someone who is hysterical, so that they can get it out to us in the public that it's the best, the best parent is the one who chooses yes [to the vaccine], right? (Ella)

Though university professors and scientific references can also be presented as sources that make information seem trustworthy, the possibility of economic factors being involved is mentioned as well. However, this does not necessarily cause a mistrust in research, as explained by a mother with a bachelor’s degree:

But as long as you can prove that the side effects have nothing to do with the HPV vaccine, then we have to trust that those who developed it and those who researched it, that they do it for a good cause, I mean, that it's not, hopefully not, to make money. But I can't know that. (Sienna)

As well as displacing the responsibility from researchers, responsibility can also be displaced from health professionals and societal authorities. Health professionals are explained as being at war with each other, and the health authorities are presented as having an agenda:

It could also be the Ministry of Health, because they try to nudge us consumers to say yes, right? That's why their materials should point towards yes. Present the good argument for that. (Ella)

The so-called nudging and being able to find anything on the internet points to parents' need to find out what information is available and also to be source critical of what they find.

The sheer range of information available thus means that to meet the moral imperative to become informed and to ensure a vital future (Hobson-West, 2007; Stage, 2015), parents cannot necessarily rely on information from one source alone, but must assess information from many sources. Consequently, the polysemy of information makes demands of parents regarding how they are to become informed about their children's susceptibilities (Rose, 2007). The polysemy of health communication in the media contributes to parents' "sense of simultaneously gaining and losing control" (Jansson, 2018: 16). We might understand this as a consequence of the reflexive modern individual itself, as Giddens (1990) emphasizes, but also as a process which is intensified as a result of a highly mediatized culture. The mutable and unstable distribution of knowledge from experts to laymen (Giddens, 1990) is challenged, not only by the reflexive nature of the modern individual, but by the polysemy of media content and media consumption in the context of health communication.

5.3 The media logic of health communication

Finally, *the media logic of health communication* shapes the way in which media disseminates health communication and, as such, contributes to transformations of responsibility. For Hjarvard, media logic is a central concept for understanding mediatization, and it is linked to political communication: "The logic of the media influences the nature and function of interaction and communication, such as how political communication is performed in the media" (Hjarvard, 2014, p. 17). We suggest extending this understanding of the role of media logic to health communication in that media logic shapes how health communication is *performed* in the media. Hjarvard continues: "... media logic also influences the nature and function of social relations, as well as the relationships between sender, content, and recipient of communication" (Hjarvard, 2014, p. 17). The implications of media logic are that the underlying rules and resources (Hjarvard, 2014) of media production shape the content it disseminates in order to fit into media formats, programs, and platforms. However, in the interviews, we found that a general understanding of media's *modus operandi* in return shapes how parents navigate media content on health issues and negotiate its validity. In the interviews, we found that some parents perceive journalists as being more interested in getting a good story, which challenges their trust in news and factual content. As one mother with a master's degree

suggested, “[c]atastrophes always sell better than sunshine” (Grace), referring to how a certain angle to a story might be preferred as a strategy for selling news stories to the public. Parents’ awareness of an underlying media logic, then, places a responsibility on them to not only estimate the quality and reliability of the health communication, but also to decipher the underlying motives of journalists and documentarists as explained by a mother with a bachelor’s degree:

There are some things that would make me say, eh, well, if it’s some journalist who wrote it, then I would think, well, (...) where does he get that information from? Is it something he mixed up to get a good story or what? (Lauren)

The parents articulate a duty to be aware of how media content is shaping health communication. The media logic of health communication might not displace the responsibility onto parents, but to some extent it is displacing it *from* the media, as explained by this mother with a short-cycle education: “*you have to remember: What angle are they taking?*” (Abigail). As such, parents fear that news media’s goal of selling good stories to increase their readership or viewership will prioritize this aim at the expense of writing a story based on trustworthy information. Thus, they fear that the logic of the media (Altheide & Snow, 1979) may compromise the reliability of the information available about the vaccine. As one mother with a short-cycle education explained:

But then again, that’s the worst thing about the media. When they put their mind to something, that they’re going to show the negative [...] if they want 21 Sunday [i.e., a weekly Sunday news show on the Danish Broadcasting Channel] to come out saying it [the vaccine] is not safe, well then that’s the only direction they’re going to go (Hailey)

One of the fathers also points to researchers contributing to this displacement. This is the case, as researchers, according to this father, need their research to be seen just like newspapers need good headlines: “*Because researchers need their research to be seen, and newspapers need some good headlines that can give some, some clicks. Such a shared interest in putting forward a conclusion that at best is very questionable in the study*” (James).

Thus, the media logic of health communication calls for parents to be aware of how health information is communicated and to look at the motivation of the media as institutions, individual journalists, and researchers. In other words, parents must understand the media’s logic to make good decisions about vaccines (Rose, 2007; Altheide & Snow, 1979). Their evaluations may or may not hold some truth, but regardless it becomes apparent that navigating their understanding of the logic of the media becomes yet another hurdle for parents when making decisions about the HPV vaccine. As most of the information available about the HPV vaccine may follow the media logic, becoming properly informed and managing the health of one’s children means parents have to consider what information is actually valid and can help them to make a well-calculated decision about the vaccine (Rose, 2007). Other parents in this study would prefer to avoid having to navigate media content as a whole, as explained by this mother with a basic school education:

But the best thing would be to have a rack of pamphlets in the GP's waiting room, where they have information about how to quit smoking and all these other things. They could have something on the [HPV] vaccine. (Arianna)

We understand this to be an expression of a desire to avoid having to navigate the validity of information that comes up in a Google search or that appears in a television program, while also ascribing validity and reliability to pamphlets in a doctor's office. In this sense, parents who use the media actively to search for health information, and those who wish to avoid it, are trying to cope with the displacement of responsibility for their decisions in different ways.

In research on mediatization of politics, Hjarvard points out how political actors “have to take into consideration such factors as the news values of journalism, generic conventions of expression, and the typical forms of relationship that the various media constitute vis-à-vis their audiences and users” (Hjarvard, 2014, p. 44). This study shows that a similar dynamic applies to some of the parents here in that they have to take into consideration how media operates in society. In addition, while it might be difficult for parents to discern the validity of information about health, they can evaluate media practices more easily, because media is so deeply integrated into all aspects of their everyday social and cultural lives.

6. Discussion and conclusion

In the book *Anti/Vax: Reframing the Vaccination Controversy*, Hausman shows that vaccine skepticism should be understood as something that makes sense rather than being treated “as a fundamental irrationality” (Hausman, 2019, p. 14). According to Hausman, individuals who are skeptical of vaccines are not necessarily scientifically illiterate, nor do they necessarily lack “a proper sense of community responsibility” (Hausman, 2019, p. 12). She further argues that “[b]oth of these characterizations exemplify what scholars call the *deficit approach to scientific knowledge*, which is shorthand for how scientists and bureaucrats see members of the public as ignorant when they disagree with mainstream scientific positions” (Hausman, 2019, pp. 12–13). The notion of individuals as ignorant, gullible, misinformed, or ‘antivaxxers’, Hausman argues, leads to a lack of focus on the social context for the vaccine skepticism. In this study, we have provided insights that may help to further illustrate why making a decision about a vaccine can be difficult. In our analysis, we also show that being unsure of whether or not to vaccinate is not necessarily based on a fundamental irrationality. Rather, it may be based on having been ‘bombarded’ with a large amount of diverse and sometimes contradictory information that, at times, follows a certain media logic. We found that (digital) media play a role in how parents perceive their responsibility to become well-informed in relation to making a decision about HPV vaccination, which is likely to also be the case for other complex health decisions. The parents’ awareness of the amount of information available about the vaccine as well as the polysemic nature of the information can create an imperative for parents to engage in a complex and comprehensive information-gathering process. As such, parents may feel impelled to become well-informed about their children’s susceptibilities to health issues – both

potentially caused and prevented by HPV vaccination (Rose, 2007). Thus, parents' perception of responsibility does not only influence their digital media engagement (Nordtug, 2022a), rather their perception of responsibility and their media engagement influence each other mutually.

However, vaccination is a complex health issue, and though some parents may feel responsible for understanding information about the vaccine, it may prove too confusing, and parents may have difficulty meeting the imperative to understand information about the vaccine. Though parents are often used to this navigating process, navigating the media's logic may make demands of parents. Thus, a potentially unintended consequence of being met with a complex media landscape is that parents find themselves in a situation in which they have a responsibility they are neither necessarily comfortable with nor competent at. This may particularly be the case for mothers, who are often considered to be responsible for making decisions about vaccines (e.g., Albert, 2019; Grandahl et al., 2017; Kemberling et al., 2011; Lindsay et al., 2021). This was also the case in the Danish HPV vaccination case (SST.dk, 2017), which may explain why the majority of parents who volunteered to participate in the study as informants were mothers. However, being met with a similar media landscape can create the same issues on a variety of similar topics irrespective of gender, including other health issues such as pandemics, spread of (new) illnesses, other vaccines, and so on. As with the HPV vaccination issue, we must look more closely at the role media plays when individuals struggle to decide how to act, and move beyond the simplified notion of the ignorant person unable to understand information on a topic. A digital, networked media landscape increases the potential for spreading misunderstandings, opposing points of view, or scientific results, since health information is spread by a range of actors from journalists, health professionals, and governmental agencies to everyday media users. Morrell et al. (2014) express concern about media's influence on health. With reference to the role of health news in public health literacy, they point to potential ulterior motives as not being in the public's interest, as the interests of the media may "inappropriately influence the information that industry makes available via the media" (Morrell et al., 2014, p. 241). Parents do not only have to navigate the information provided, but also the motivation of each actor and the digital affordances of the information communicated, which leaves them with a sense of responsibility for sorting through all the available data including seeing through motivations and interests before making a decision.

The findings of this study may have implications for various actors. First, previous research has suggested that health professionals should adjust communication with people deciding on vaccines based on their social needs (Bachl & Link, 2022). Based on the findings of our article, we add that practitioners, health authorities, and others who communicate about vaccination and other complex health issues need to acknowledge the complexities of deciding on health issues like vaccines, and not take the default approach that being skeptical towards vaccines is based on a lack of scientific literacy or that people are "ignorant when they disagree with mainstream scientific positions" (Hausman, 2019, p. 13). Rather, as we show in this article, the mediatization of health can influence parents' sense of responsibility for understanding information about vaccines. This is true irrespective of parents'

education level. In this article, we have included the voices of parents with various educational backgrounds. Even though we cannot generalize based on the parents' education level, previous research has found that the role of education is complex in relation to vaccine uptake (Gørtz et al., 2020), and we found the parents' experiences with navigating the polysemy of health communication from various sources to be voiced across educational levels. As such, vaccine skepticism can be a comprehensible response and should not be understood as view that can be remedied merely by heightening scientific literacy amongst those deciding about vaccines. Acknowledging this finding should guide how public health agencies share information about vaccines. Second, in developing research about vaccine skepticism or doubt, researchers similarly need to acknowledge the messiness of vaccine decisions when asking research questions and not take a “*deficit approach to scientific knowledge*” (Hausman, 2019, p. 12-13) in which they understand parents or other decision-makers as ignorant for not following mainstream guidance on vaccination.

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