Abstract:

Information forms one of the main commonalities shared between definitions of health literacy. However, information literacy research, which centres how people become informed within a specific setting, has been almost completely sidelined from health literacy scholarship. This oversight risks limiting understanding of how health literacy is practised as well as narrowing research discourses. It also forms a missed opportunity as the recent sociocultural turn creates a valuable point of synergy between each field. This paper carries out a narrative literature review to identify key areas where information literacy research could help to extend understanding about how people interact with information within health contexts. Centred on exploring theoretical and empirical work, the paper uses examples from literature to suggest that assumptions related to how information, models of information use, social dynamics of information environments, the outcomes of information activity and critical approaches to information practice are understood impact the scope and the reach of health literacy research and practice. The goal of this paper is to establish an initial, shared research agenda that places health and information literacy in dialogue rather than in isolation from each other.

Keywords: Information, Information literacy, health literacy, health promotion, social practice.

The missing link: Towards an integrated health and information literacy research agenda

1. Introduction

By 2016, Malloy Weir et al. had identified over 250 definitions of health literacy (also see Sørenson et al., 2012; Bröder et al., 2017). Each of these definitions resembled each other in distinct ways, with variations in wording and focus being linked, in part, to the assorted methodological approaches that have been used to explore the concept. Differences have also been shaped through the range of disciplinary approaches that have been used to examine health literacy, including literacy studies, medical anthropology, and risk communication, amongst others (Papen, 2008). One commonality that both Malloy Weir et al. (2016), Sørenson et al. (2012) and Bröder et al. (2017) identify as shared between almost every definition in their lists is information, whether this is related to print, spoken or digital material, or the ability to find, use and filter relevant knowledge. However, despite the core role that information plays within these definitions, information literacy research, which emerges from the broader field of information studies and examines how people build "a deep awareness, connection and fluency" within information environments (Lloyd 2006), has been almost completely sidelined from health literacy literature. The failure to engage with this scholarship is problematic because it risks limiting our understanding of the role that information plays within health contexts, including how health literacy is practised, learnt, and theorised. These oversights may also lead to the narrowing of research discourses and opportunities for broader future engagement.

This paper carries out a narrative literature review (Grant & Booth, 2009) to identify and provide a commentary on key areas where information literacy research could help to extend understanding about how people interact with information within health contexts. Focusing on examining published empirical and theoretical research, the review's emphasis on shared concepts and relationships (Aromataris & Pearson, 2014) means that the goal of this paper is to suggest a research agenda that places health and information literacy in dialogue rather than in isolation from each other. The literature search that forms the basis for this review was carried out as part of a series of research projects exploring the relationships between health and information literacy (Author et al., X; Author & Author, X). Centred on an extensive searching of medical, social science and educational databases as well as reference chaining and contact with experts, this research approach was further informed by Papen's 2008 examination of health literacy within four related research fields. At the same time, the emphasis on debate and the value of this topic for future study means that this review does not claim to provide an exhaustive or systematic presentation of the topic (cf. Aromataris & Pearson, 2014).

The need for this review is partially based on the premise that the sociocultural turn, which has been noted within each field (e.g., Tuominen et al., 2005; Samerski, 2019), has created a point of synergy between health and information literacy. Anchored in a shared understanding of social practice, the emphasis on co-produced, socially, and materially situated interactions provides an opportunity for information and health researchers to explore shared goals and establish a common research agenda. The recognition that findings from health studies are sometimes "at odds" with research that emanates from information science (Greyson, 2017, p.779) or that information literacy literature is occasionally seen as inaccessible to the health field (Pitt et al., 2019, p.676) means that the review also emerges from an appreciation of the intersectional value that can be gained from putting these two fields into dialogue (cf. Gonzalez et al., 2020). Lastly, given that research from literacy studies has been credited with advancing the field of health literacy by pushing it further around the sociocultural turn (Chinn, 2011, p.61), the review develops from the similar supposition that an increased focus on information and the ways in which people develop knowing within health contexts will contribute to a more complex theorisation and understanding of health literacy.

2. Information literacy and health literacy: an overview

Somewhat intriguingly, both information literacy and health literacy have been traced back to 1974, albeit emerging from very different contexts. Information literacy has generally been considered to have first developed in relation to the workplace, when Paul Zurkowski (1974) outlined the information skills that workers would need within an information age. In contrast, the concept of health literacy has typically been considered to have arisen within an educational context, when Scott Simonds (1974) called for the improvement of health education standards in the US schooling system (although see Pinheiro, 2021). While there is no suggestion that Simonds and Zurkowski were aware of each other's ideas, it is clear that both men were influenced by the United States' literacy agenda, or the growing connection of literacy to national security and global competition (Brandt, 2004; Huber et al., 2012, p.440). Since this date, however, health literacy and information literacy have diverged considerably, as Lawless, Toronto and Grammatica (2016) point out in their brief overview of the historical origins of each concept. Health literacy moved rapidly away from its formal educational roots to become more firmly entrenched within governmental and social initiatives relating to health and medical care (Huber et al., 2012) while information literacy turned its back on its workplace origins to align with library-centred academic educational initiatives. These origins and subsequent divergences may help to explain the lack of dialogue between the two fields to date.

One of the most prominent ways in which health and information literacy diverge is through their institutionalisation within research and practice. Within health literacy, the important role that health plays "as an index of the success of societies in general" (Green et al., 2007, p.20) means that attention has traditionally been focused on definitional work (Bröder et al., 2017, Malloy Weir et al., 2016; Sørensen et al., 2012) as well as the creation of international standardised tests designed to measure health literacy levels (e.g., Mancuso, 2008). Less emphasis has been placed on the production of conceptual models of health literacy, which tend to take a broad stroke and have been critiqued for being insufficiently grounded in theory (Sørenson et al., 2012, p.8). Most noticeably, the emphasis on literacy means that research has habitually centred on reading and writing, or the language and numeracy demands of healthcare. While this focus has started to dissipate as researchers have continued to engage with the complexity of healthcare, early research has often been dominated by what Nutbeam (2000) labels as functional literacy rather than other aspects of health-related activity (Pleasant et al., 2015). The powerful role that patient messaging plays within research also demonstrates that biomedical models of health literacy still often prevail, although these views are being increasingly challenged (e.g., Papen, 2010; Chinn, 2011; Bröder et al., 2017).

In contrast, definitional work has been kept to a minimum within information literacy (Hicks, 2018), with most energies expended on the establishment of conceptual models of practice. Originally taking inspiration from library orientation and bibliographic instruction programming, early models of information literacy (e.g., ACRL, 2000) tended to centre the access and use of library tools or what Kapitzke (2003) refers to as “print cultures and psychologist discourses.” However, increasing dissatisfaction with the generic shape and the positivist ideals of these documents meant that 2010 marked the introduction of less prescriptive models of practice in the field’s second wave of models (Hicks & Lloyd, 2016). Referencing constructivist epistemologies, which contend that people create new knowledge through reference to past experience, these new models (e.g., ACRL, 2016, Secker & Coonan, 2011) reframed information literacy in terms of core ideas and dispositions rather than skills. The turn towards concepts, which bears some resemblance to the communicative and critical dimensions of Nutbeam’s model of health literacy, perhaps explains why less emphasis has been placed on information literacy tests than in the health literacy field; while tests exist (e.g., SAILS, n.d.; TATIL, n.d.), assessment has tended to focus more upon demonstrating library value rather than meeting educational benchmarks (Seale, 2013). Notwithstanding, the continued association of information literacy models with school and academic settings meant that librarian understandings of practice still prevailed and transferability to everyday contexts remained limited.

The different ways in which health and information literacy have played out since 1974 means that, to date, there have been few points of synergy and collaboration between them. Most recently, however, both fields might be seen as starting to converge through a shared interest in sociocultural theory. Chinn notes growing interest in sociocultural approaches to health literacy in her 2011 literature review, arguing that a focus on reading and writing is "too narrow to capture the wide range of cognitive and social skills that individuals might need to make best use of health systems." Sparking greater interest in the social context of health literacy practices, these developments have played out against the backdrop of Nutbeam's (2000) interactive and critical literacy model. However, while Chinn (2011) sees the focus on sociocultural approaches as the start of health literacy's second wave, empirical work has been limited with research tending to examine social determinants of health rather than social activities (e.g., Okan et al., 2019). Exceptions include Papen (2009) and Samerski (2019) (also see Blue et al., 2016) who draw from New Literacy Studies and practice theory to conceptualise health literacy as a social practice. Focusing attention on the uses and meanings of literacy (Papen, 2008, p.9), a social practices approach positions health literacy as situated and multidimensional, or as embedded within specific contexts and shaped in relation to complex networks. The ensuing emphasis on how people learn about or make decisions about their welfare has ushered in a new emphasis on information, including how becoming informed must be seen as affectively layered as well as entwined with complex power relations.

The sociocultural turn was first embraced within information literacy research in the mid-2000s with the publication of research critiquing the information skills-based agenda that had dominated the field to date. Arguing that “literacies cannot be separated from the domain-specific sociotechnical practices that give rise to them” (Tuominen et al, 2005, p.341), these studies called for an understanding of how a community uses tools to evaluate and create knowledge before attempting to design teaching interventions. The sociocultural focus was subsequently extended by Lloyd (2005), whose empirical research with firefighters jolted the field away from its traditional academic focus to introduce an embodied emphasis into practice. Since then, researchers have drawn upon sociocultural theories to position information literacy as a transformative practice that connects people to the sources and sites of knowledge that facilitate understanding within a specific context (Lloyd, 2011). Focusing attention on the information activities that provide access to a community’s social, corporeal, and material knowledge structures, the conceptualisation of information literacy as a social practice also highlights how the development of understanding must be understood as shaped in relation to situated collective activity. Most recently, empirical work in workplace, everyday, and health domains has led to the creation of the field’s first theory, which reframes information literacy in terms of “a way of knowing” rather than uniquely in terms of finding, evaluating, and using information (Lloyd, 2017). These developments, which hint at commonalities with sociocultural understandings of health literacy, also illustrate the value of examining social interactions through an information lens.

To date, there have been few attempts to study the connections between information literacy and health literacy in detail, despite these sociocultural synergies. The important role that reading and writing has played within original conceptions of health literacy means that a number of studies have examined the associations between literacy studies and health (Green et al., 2007; Nutbeam, 2009; Papen, 2008); research has also explored how allied fields of study, including media literacy (Levin-Zamir & Bertschi, 2019; Peerson & Saunders, 2009; Truman et al., 2020), medical anthropology and linguistics can extend research in the area (Papen, 2008). However, the links between information and health literacy have been largely overlooked, despite the connections that are made by Health Education England (2021) and the prominence of information literacy scholarship when health literacy is studied through bibliometric methods (Massey et al., 2017; Pinto et al., 2013). The few comparative studies that exist tend to rely on traditional or superseded conceptions of information literacy; Abelsson at al.'s (2020) understanding of health literacy as "specialised", for example, positions information literacy as a set of generic skills rather than as a complex social practice (also see Pinto et al., 2013; Lawless et al., 2016; Henwood et al., 2003). Similarly, health literacy research that does centre information often fails to engage with key concepts in detail (e.g., Dalrymple et al., 2014; Diviani, 2019). The lack of clarity that often characterises understanding about information literacy within health contexts provides a further impetus to both the need and the importance of this paper.

3. Applying information literacy research: Key contributions

The paper will now turn to explore several key areas where information literacy research could be useful in understanding how people interact with information within health contexts. These key areas include: information, information models, social dynamics of information environments, the outcomes of information activity and critical approaches to information practice.

3.1 Information

The first area where information literacy research could extend health literacy research is through focusing greater attention on the concept of information. Information forms a key concept within definitional health literacy research (Bröder et al., 2017, p.4; Chinn, 2011, p.61; Malloy Weir et al., 2016; Sørensen, 2012, p.5) and references to ‘information needs’ and ‘information seeking behaviour,’ amongst other concepts, indicate that information forms a major concept within empirical health literacy work, too (e.g., Carolan, 2007; Abelsson et al., 2020). Notwithstanding, the concept of information is not always defined, questioned or problematised within health literacy research, including whose understanding of information is prioritised within any given study. Information forms such an everyday concept that definitional work may seem unnecessary. However, research from the broader field of information studies suggests otherwise; Case and Given (2016), for example, list over 30 definitions of information, which range from viewing information as a positivist-shaped objective and tangible entity to an interpretivist-influenced subjective social construction. The complexity of these ideas, which hint at how the term has been used to refer to related and overlapping phenomena, demonstrate the value of problematising information within health literacy research. The recognition that references to information obscure assumptions about how we become informed provides a further rationale for the integration of a more nuanced understanding of the role that information plays within health contexts.

One of the most problematic issues that arises from the side-lining of information from health literacy research is the obscuring of what is informative. When this has been studied, research demonstrates that health information is often understood as what Buckland (1991) refers to as "information as thing" or an objective entity that can be "sought, exchanged and processed" (Greyson & Johnson, 2016). This is problematic because it ignores "information's more invisible or intangible qualities" (Dalmer, 2018), including the importance of ephemeral forms of information within the development of health knowledge. A failure to interrogate the concept of information also risks concealing power structures, including whose understanding of information is legitimised within health literacy research. From a sociocultural perspective, which emphasises the relationships between people and practices, information must be understood as both personally meaningful and contextually situated for it to be considered consequential; information forms "any difference which makes a difference" (Bateson, 1972, p.453). However, as Nettleton (2004, p.673) points out, simple references to 'health information' often obscure how it is medical knowledge rather than other forms of knowing that is prioritised under this rather neutral term (cf. Henwood, Harris & Spoel, 2011). The sociocultural recognition that information must be seen as shaped through experience rather than something that can merely be discovered and accumulated demonstrates how a failure to probe the concept of information also runs the risk of continuing to reinforce biomedical understandings of health literacy.

Information tended to be unmarked within traditional understandings of information literacy; the field's connections to libraries meant that information was often automatically assumed to refer to books and other physical library materials (Kapitzke, 2003). The adoption of a sociocultural lens, however, has enabled information literacy scholars to grapple with more complex understandings of information. Examination of firefighter information literacy practices, for example, reveals that while formal textual information sources help to build an abstract understanding of practice, firefighters are only able to develop an intersubjective or collective view of their work when they have access to the informal social and embodied sources of information that are produced by more experienced members of the platoon (Lloyd, 2005). From this perspective, social information, which is accessed through activities such as storytelling, forms a vital part of firefighter training because it affords access to tacit forms of knowledge, including the communal beliefs and values that structure the safety of the community. Along the same lines, embodied information, which is accessed through firefighter bodies, forms a way in which platoon members can access 'know-how' that may be hard to explain yet is essential for the enactment of knowledgeable practice (Lloyd, 2005). Illustrating the variety of non-textual information sources that a person may rely on within a specific social setting, the focus on information also provides insight into the numerous dynamic ways in which access to and participation in knowledgeable activity is shaped. It further demonstrates how asking people to describe the information that they feel is important to their practice, as was the case in Lloyd's work, helps us to build a complex picture of how understanding is built within a specific context.

From a health perspective, these ideas demonstrate the importance of focusing attention on the different forms of information that people rely on within health situations; as Bucchi (2008, p.60) writes, "lay knowledge is not an impoverished or quantitatively inferior version of expert knowledge; it is qualitatively different." Samerski (2019, p.6) has started to examine the role that somatic information plays within health literacy, noting that the body forms an "important object, medium and source of knowledge." Reference to sociocultural information literacy research could extend these ideas by focusing in more detail on how bodies make information visible and become an information source in their own right; information literacy research examining chronic health conditions, for example, illustrates how patient bodies facilitate everyday living by serving as a “reference point” for illness as well as any changes in condition (Lloyd, Bonner & Dawson Rose, 2014, p.210). Sociocultural information literacy research could also extend Nutbeam’s (2000) emphasis on communication and recent studies of social networks (e.g., Pitt et al., 2019; Sentell et al., 2020) by facilitating more specific insight into the role that informal social interactions, which are often entwined with emotion work, play in both enabling and constraining the development of health knowledge. Hirvonen et al. (2018), for example, illustrate how the credibility of information is related to the establishment of cognitive authority, while research with refugees establishes the key role that pooling health information plays when working across languages (Lloyd, 2014). Emphasising the wide range of information sources and activities that support health decision-making, the focus on how people become drawn into information environments would also further reinforce the push to move beyond functional understandings of health literacy practice.

3.2 Information Models

A second area where information literacy research could extend health literacy research is through challenging and extending the models of information use that have been employed within the field. As with the concept of information, health literacy research does not always explicitly refer to the model of information use that underlies a particular study. However, the frequent focus on reducing the ‘noise’ that interferes with the understanding of health information, as seen through the emphasis on improving the readability of patient leaflets, (Dixon-Woods, 2001), implies a continued reliance on models of mass communication that were first developed in the US in the 1950s and 1960s (cf. Lupton, 1995, p.107). These mathematical theories, which include Shannon and Weaver's Model of Communication (1949), understand communication to be a mechanical process that centres the movement of information. A reliance on models such as these consequently centres attention upon what Harris et al (2015) refer to as "information giving" or simplistic sequences of information transfer where information flows in a "unidirectional, uncomplicated, and linear flow from information creator to information user" (Lee & Garvin, 2003, p.449). These ideas, which position the acquisition of health knowledge as a simplistic "proxy" for health literacy (Brinkley-Rubinstein et al., 2015), also risk denying patient agency as well as broader understanding about how people access and understand health information.

The positioning of information literacy as a set of steps to be followed means that traditional information literacy research often centred behaviourist or banking models of education, which position people as empty vessels that need to be 'filled' by the all-knowledgeable professional within its definitional and modelling work - a continuation of the information transmission approach. However, more recent engagement with sociocultural theory, which understands learning as participation in shared social activities, has started to reconceptualise information literacy in terms of how people use information to construct meaning within a specific setting (Limberg et al., 2012). These ideas position information activities, which connect people to the tools and interactions that are valued within a community, as the means through which this situated learning takes place. The emphasis on shared practice means that information literacy research has consequently started to focus on the various ways in which people learn how to engage with the forms of knowledge that are legitimised within a specific setting, including everyday or less visible ways of knowing (Lloyd & Wilkinson, 2016). The importance of these activities, which facilitate a shared and embodied understanding of practice, further draw attention to the importance of recognising the various nuanced (and often unexpected) strategies that learners employ to scaffold their participation within a particular context.

Insight into informal learning, which is defined as occurring as part of incidental everyday activity outside of formal instruction (Papen, 2012, p.107), forms a specific example of how sociocultural information literacy research could extend understandings of how information is used within health contexts. Informal learning has often been side-lined in many educational fields, with a number of health literacy studies warning of the perils of self-directed internet usage, amongst other activities (e.g., Schulz & Nakamoto, 2013a). However, these ideas are challenged by recent information literacy research that demonstrates the important role that informal learning plays in supporting the development of expertise within a specific setting. In the recent COVID-19 pandemic, for example, people relied on informal observation rather than uniquely on governmental sources to learn about danger and to confirm regulations related to living in an everyday lockdown situation (Lloyd & Hicks, 2021). Similarly, mediating information to others, including photos and news stories, helped people to learn about what was relevant within the new COVID information environment (Lloyd & Hicks, 2021) rather than forming an irrelevant diversion. While these activities may seem mundane, analysis demonstrates that it is through informal and everyday activities such as these that people are able to connect to the nuanced and contingent forms of knowledge that shape understanding. From a health perspective, these ideas reinforce how information use must be understood as contextual as well as socially shaped and negotiated.

A focus on learning also has implications for the ways in which we understand learners; the recognition that people construct knowledge through an engagement in practice signifies that learners must be seen as actively engaged in the world around them rather than merely passive recipients of information. While these ideas are not new (e.g., Bröder et al., 2017; Papen, 2010) they draw attention to agency and the capacity to act within an information environment. Agency is often "implicit" within health literacy definitions, as evidenced by the emphasis on active and participatory verbs (Hunter at al., 2015, p.38). Yet, these ideas are also complicated through "non-enabling" (Hunter at al., 2015, p.38) interactions, including the profiling of people who avoid information as low-literate or "problem patients". Information literacy research questions these ideas by emphasising how seemingly resistant activities such as information avoidance form a purposeful coping or self-care strategy that people employ to control the flow of information during times of anxiety and stress (Hicks, 2019). Illustrating how, as agentic beings, people have the capacity to reject or ignore information as well as to engage with it, these ideas provide a vivid illustration of how health interactions are referenced corporeally as well as cognitively. Importantly, the focus on "what [people] do not do when compared to a dominant group" (Larson & Marsh, 2014, p.101) raises further questions (e.g., Wills, 2009) about whose ways of being may be silenced when we uniquely position people as lacking health literacy skills.

3.3 Social dynamics of information environments

A third area where information literacy could be useful in extending health literacy research is through drawing attention to the impact that social dynamics have on the ability to access and understand information. Health literacy research has consistently critiqued an overly individualistic focus on health interactions, labelling the emphasis on personal skills that are transferable to a range of contexts as narrow and as drawing attention to extremes (e.g., Bröder et al., 2017; Mårtensson & Hensing, 2012; Pleasant et al., 2016). These critiques have been bolstered by the inclusion of communicative and critical health literacy into Nutbeam's (2000) conceptual work, which is seen to bring a more overt focus on collective understanding into research. However, as Samerski (2019) points out, even critical health literacy does not always completely move away from the personal gaze. A move to design tools that measure health literacy in context (see Nutbeam et al., 2019) could similarly be seen as only peripherally engaging with the ways in which health literacy is constrained and enabled within social environments. These ideas are problematic because they continue to position people as "cognitive agents instead of as emotional, social and embodied beings" (Samerski, 2019, p.2). They also fail to allow for the conditions that impact the performance of health information activities, including how access to information is facilitated and constrained.

There appear to be few health literacy studies that have specifically centred the impact that social dynamics have on information activity to date, but research from related areas of study point to potential issues. One of the most vivid examples is found in research that examines patient-provider interactions. Studies that demonstrate, for example, how GP information sharing is predicated upon a person's appearance, including race (Altman et al., 2019), as well as looking either too "withdrawn" (Hedelund Lausen et al., 2018), or, conversely, too healthy (Werner, 2003), illustrate how it is often social interaction rather than individual endeavour that facilitates access to information. Research that has examined the effort that goes into being seen as a credible rather than a problem patient, which includes the need to tread a fine line between being actively engaged in care (Stacey, Henderson, MacArthur, & Dohan,

2009) and asking too many questions (Lorber, 1975), further illustrate how the ability to engage with information is negotiated rather than forming a singular personal achievement. Another example of the impact that social context has on information activity comes from research that examines how friends and family shape information engagement; studies that demonstrates how children's (Bray et al., 2021; Gonzalez et al., 2020) and dementia patients' (Barnes, Henwood & Smith, 2016) access to information is controlled by "family and societal expectations" (Bray et al., 2021), reinforce the impossibility of seeing health literacy as an individual act (also see Bröder et al., 2017; Pitt et al., 2019; Sentell et al., 2020). Similarly, the recognition that information sharing is shaped through the establishment of trust between HIV-positive clients and caseworkers indicates how information activity must further be seen as inseparable from the sociomaterial arrangements that shape and define practice (Brinkley Rubeinstein et al., 2015). As Mol (2008) points out, it is hard work "disentangling people from their collectives" and a focus on individual information activities only restricts our understanding of the social conditions that shape how people interact and engage with informative objects.

One way in which sociocultural information literacy research could be useful in understanding the impact that social dynamics have upon health information activity is through drawing attention to the information affordances of an environment. The concept of affordance, which originated with Gibson's (1977) work in the physical environment, has most commonly been used within design thinking to refer to the potential uses of an object or tool (Norman, 1988). More recently, however, Billett (2001) has defined affordance in terms of learning, which he positions as shaped through the "invitational opportunities" that a setting provides for participation in its activities. Within information literacy research, these ideas have been used to spotlight how opportunities to connect with information are afforded by a specific context, including being supported by the provision of guided learning strategies such as questioning, and being inhibited through marginalising practices such as perceptions and judgements of competence (Lloyd, 2010; Hicks, 2019). From a health perspective, these ideas extend an understanding of the importance of social context (e.g., Bauer, 2019; Pitt et al., 2019; Sentell et al., 2020) to draw attention to the distribution of information affordances within medical and illness contexts, including asymmetries in opportunities for engagement. More importantly, the connections that sociocultural theory makes between learning and participation means that these ideas also highlight how a person or a group's participation is invited within a specific health setting, particularly in contested or institutionalised contexts (cf. Billett, 2001, p.210).

Another way in which information literacy research could extend understanding about the impact of social dynamics upon health information activity is through underscoring how positioning, which refers to the ways in which a person locates themselves and is located within a specific narrative (Davies & Harré, 1990), shapes the ways in which people are able to access and engage with information. Research that demonstrates how the use of information sources is impacted by the ways in which midwives position young women during contraceptive counselling appointments, for instance, reinforces how the development of health knowledge centres upon the negotiation of information relevance and credibility rather than individual skill (Eckerdal, 2011). The recognition that the information needs of pregnant women are shaped by the ways in which they position themselves as well as how they are positioned provides another example of the complexity of health information interactions (McKenzie, 2004). Stigma forms a further theoretical concept that extends understanding of how information activity is both facilitated and inhibited within health contexts. Research from the related field of information behaviour, for example, notes how young fathers may refrain from seeking information for fear that their activities will incur “judgement rather than assistance” (Mniszak et al., 2020, p.8). Similarly, Greyson (2017, p.787) reports that young parents will often choose to seek information online because, unlike older parents or medical professionals, mobile devices would not “disrespect them for being young.” The use of an information lens could consequently extend health literacy research examining shame (e.g., Parikh et al., 1996) by examining the impact of broader moral surveillance and regulation upon health information activity.

3.4 Outcomes of information activity

A fourth area where information literacy research could contribute to extending health literacy research is through questioning the outcomes of information activity, or what Malloy Weir et al. (2016, p.338) refer to as the “actions associated with, and the implied sources of the value of, health literacy.” A significant number of positive individual and social outcomes have been linked with health literacy, from being able to exert greater control over health (Nutbeam, 2000) and making appropriate health decisions (Ratzan, 2001) to decreased healthcare costs (Hedelund Lausen et al., 2018), and the reduction of inequalities (Sykes & Wills, 2018). The emphasis on the development of abilities and competencies means that these benefits often have the effect of positioning health literacy as an “asset” (Nutbeam, 2008; Chinn, 2011) or a personal resource that will unproblematically help people to gain control over their lives. However, from an information perspective, these ideas are problematic when they assume that the mere addition of information can promote or maintain health (Malloy-Weir et al., 2016; Peerson & Saunders, 2009) over time (Longo et al., 2010). Forming an extension of the information transmission model, these ideas also risk viewing information practices as autonomous, or benign influences that will automatically and independently impact a person’s prospects “regardless of the social and economic conditions that accounted for their "illiteracy" in the first place” (Street, 2003, p.77).

Sociocultural information literacy research has grappled with many of the same issues regarding the outcomes of practice. More recently, assumptions about the results of information engagement have been challenged through the theoretical lens of transition, a complex term that has been most widely studied in the fields of education and nursing. Transition has typically been understood in terms of a unidirectional passage from one life phase or situation to another (Schumacher, Jones & Meleis, 1999, p.2), an idea that has positioned information literacy as an individual competence that would straightforwardly and independently prepare learners to navigate change. However, the recognition that mastery of a situation cannot be separated from a shift in self-identity (Kralik et al., 2006, p.324) challenges these ideas by reframing transition in terms of identity construction or the complex, multiplicitous ways in which people integrate upheaval and disruption into their life (Schumacher & Meleis, 1994, p.121). From this perspective, information literacy has become reimagined as supporting contextual and socioculturally-shaped processes of identity transformation (Hicks, 2019) rather than constituting an individual determinant of action. A focus on transition (also see Bröder et al., 2017) could consequently extend health literacy research by exploring the outcomes of information practice in more detail, including the complex ways in which information helps (or hinders) new ways of being to take hold; as Costello (2015, p.26) points out, health conditions often form a time when people are forced to “redefine themselves… simplify... their lives… and learn... how to pace themselves and juggle tasks.” The suggestion that people may feel dissonance between their subjectivity and how it is presented within official discourses also lends nuance to considerations of information inaction and resistance.

Another important way in which sociocultural information literacy research has attempted to problematise the outcomes of practice is through probing taken for granted assumptions about the benefits of information activity in more detail. One assumption that has most recently been challenged is the idea of empowerment, which, as in health literacy, is frequently positioned as an autonomous outcome of information activity. Within this framing, which emerges from the idea that information literacy will 'empower' people with the skills and understanding that they need to be informed for future endeavour, empowerment is seen to form a self-evident good (McLaughlin, 2016, p.124) that maximises the quality of life. However, the recognition that the field's empowerment narratives are frequently referenced against perceptions of learner deficiency demonstrates that the development of autonomy is more frequently linked to top-down behaviour modification rather than social action and political change, as in the original meaning of the term (cf. Hicks & Lloyd, 2021). From a health literacy perspective, these ideas are important given that the field has been critiqued for focusing on what patients are presumed to lack rather than what they bring to the situation (e.g., Ancker et al., 2020, p.2428; Hunter & Franken, 2012, p.37; Sykes et al., 2013. Also see Schulz & Nakamoto, 2013b). The recognition that patients receive mixed messages about the appropriateness of questioning medical staff also foregrounds what Greyson (2019, p.376) labels as the activated patient paradox wherein empowerment is welcomed "only when it is convenient to our objectives and ideology."

Research has also started to interrogate the assumptions that underscore the perceived benefits of information itself. One way in which these ideas have been explored is through the concept of misinformation, which is generally understood to be minimised for information literate people. However, the recognition that COVID-19 sceptics use a variety of sophisticated media and data literacy competencies to "consolidat[e]... and promulgat[e]... views that fly in the face of scientific orthodoxy" (Lee et al., 2021, p.2), illustrates the flaws in assuming that information literacy skills will automatically 'protect' people from anti-social ideals. Research demonstrating that vaccine hesitant people engage in "intensive (and critical) reading of information from a wide variety of sources" (Hobson-West, 2007, p.209) rather than being the victims of deception further demonstrates how information capacities do not "autonomously" (cf. Street, 2003) impact sociocultural practices; in this case, the framing of literacy as a personal responsibility may actually encourage mistrust of the government rather than desired decision-making. Research with marginalised groups further complements this work; rather than automatically improving life quality, a caregiver's information seeking, for example, may reduce a dementia patient's sense of security if they think their independence is being undermined (Barnes et al., 2016). Belief in the power of information may also obscure a person's more urgent requirements, including essentials that young parents need, such as nappies, formula, and respite (Brand et al., 2014) as well as leading to a decrease in physical care provision (Dalmer, 2018). Illustrating how information must always be seen as entwined with power, this research also demonstrates the vital importance of continuing to interrogate and question taken-for-granted discourses about the impact of becoming informed.

3.5 Critical approaches to information practice

A final way in which information literacy research could extend health literacy research is through extending a critical information lens. Critical health literacy has a long history within health research. Forming one of Nutbeam's (2000) three key dimensions of health literacy, critical health literacy has been the subject of conceptual reviews (Chinn, 2011; Sykes et al.,

2013) and, more recently, empirical research (Sykes & Wills, 2018). Within this framing, criticality is invoked through the ability to interpret and contextualise evolving forms of information (Abel & McQueen, 2020; Sykes et al., 2013) and as a Freirian-inspired call to "individual and collective action" or the development of critical conscientisation and the addressing of health inequalities (Sykes & Wills, 2018). Notwithstanding, the combining of these two broad ideas highlights contradictions; a focus on fixed and measurable health literacy competencies, for example, sits awkwardly with Freire's emancipatory educational ideas, while the equivalence of critical health literacy with 'higher order cognitive skills" (Nutbeam, 2000; Sykes et al., 2013) raises questions about who is and who is not considered as qualified to engage in political and social action. Research also stops short of critically interrogating health literacy discourses, including its key concepts and influences as well as the origins of the term.

Critical perspectives are present within information literacy research and practice but have taken a very different form. Critical information literacy appeared later than critical health literacy, first emerging in the mid-2000s when librarians and researchers started to think more carefully about the need to centre learners within information literacy instruction (e.g., Swanson, 2004). During this phase, the work of Paolo Freire, Henri Giroux and bell hooks, amongst others, influenced the development of a critical pedagogy that was focused on discussion and dialogue as well as inquiry-based learning. More recently, however, researchers and librarians have started to explore information literacy through a broader critical theoretical lens, including neoliberalism and critical race theory, amongst other theoretical perspectives (e.g., Leung & Lopez-McKnight, 2020; Seale, 2016). These ideas have led to a nuanced interrogation of information literacy frameworks and models, including the influence of market models and social, political, or technocratic ideologies upon economies of knowledge and information (e.g., Kapitzke, 2003; Mirza & Seale, 2017; Nicholson, 2016). Research has also drawn upon critical theory to interrogate the structures of domination that are present within many institutional understandings of information literacy, including white supremacy (Leung & Lopez-McKnight, 2020), amongst other issues. While many of the expressions of power that are critiqued within this work emerge from the higher educational structures out of which information literacy has emanated, they also point to the vital importance of challenging how power and agency is represented within prevailing understandings of information practices.

In contrast, less emphasis seems to have been placed on critically interrogating the structures that shape health information interactions (although see Bell & Green, 2016). Researchers have outlined the early origins of health literacy, including its connections to health education and public health, amongst other areas (Nutbeam, 2000). However, although scholars have critiqued the emphasis on morality and personal responsibility that emerged with the shift to new public health in the 1970s and 80s (e.g., Petersen & Lupton, 1996), there seems to have been less examination of the impact of these ideas on health literacy, which emerged within a similar time frame. Critical information literacy research could contribute to this work by extending a focus on the commodification of information and the transformation of information activities "from an attribute of a 'good' individual into an individual 'good,'" (Brandt, 2004), an idea that privileges utilitarian regulation and surveillance. Research in this area also offers a framework from which information discourses that have given shape to health literacy can be traced and interrogated, including the rational administrative structures (Eckerdal, 2017) that lie behind the emphasis on "problem-solving", "self help" and "coping skills" (Nutbeam, 2000) as well as tensions between what has been understood in the information literacy field as a "promethean vision of citizen empowerment and democracy, and… a desire to control "quality" of information” (Pawley, 2003, p.425). Importantly, critical information literacy also promotes an interrogation of its own values and goals, including critique of its institutionalisation as well as reflections on the links between professional attempts to legitimise and claim territory (Seale, 2013; 2016).

Another way in which health literacy could be critically interrogated is through the concept of information work, or the unpaid labour that is involved within managing health and illness conditions. Information work was first introduced by Juliet Corbin and Anselm Strauss (1985) who noted that chronic illness forced patients and their families to engage in information-focused comfort, safety, and biographical work. Since then, information work has been used to emphasise a person’s agency (Valdez et al., 2014). However, the term also draws attention to “unpaid, unnoticed, and marginalized activities” or the affective and emotional labour that is involved in developing knowledge (Dalmer & Huvila, 2019). An information lens could consequently be used to interrogate the impact of this effort, including “the complex, emotional, and time-consuming work that is often needed to find, use, share, organize, make sense of, and deal with the implications of the information needed to manage one’s health (or illness)” (Dalmer & Huvila, 2018). The interrogation of information work could also focus on female labour given that women often form “important intermediaries of health information even though they may have no recognised links or responsibilities to the formal health care system” (Harris, 2009, p.72). Raising important questions about the value of labour, information work has the potential to extend understanding about digital inequities as well as broader forms of power that structure the development of health knowledge and understanding.

4: Towards a research agenda: Health and information literacy in dialogue

The preceding sections have demonstrated how sociocultural information literacy research could extend scholarship examining the wide range of ways in which health literacy is practised, theorised, and learnt. The incorporation of conceptual work related to information and information models could add precision to an under-explored area of study, while research examining the social dynamics of information environments, the outcomes of information activity and a critical information lens could extend existing work by bringing new theoretical tools and perspectives to a field that has been characterised as insufficiently grounded in theory (Sørenson et al. 2012, p.8). Although health literacy has started to employ a more diverse mix of theoretical lenses (e.g., Samerski, 2019), it is clear that there is considerable scope to expand this work, particularly as researchers continue to push for broader understandings of health literacy practices. The examination of health literacy through the lens of information theories will, in turn, encourage a move beyond populations to grapple with the more complex questions that have been presented within this paper, including issues related to information, power and agency. At the same time, information literacy continues to struggle with many of the same gaps as health literacy, and research that examines information literacy in a health context remains far less common in a field that is still dominated by academic models of practice. These ideas indicate that placing health and information literacy in dialogue could contribute to the creation of a richer and more intersectional research agenda.

An area that has been surprisingly underexplored within both information and health literacy research is the concept of risk and the impact it has on mediating information activity. One of the few references to risk within health literacy comes from Nutbeam (2008) who positions low literacy as a “clinical risk” or as a potential risk factor for the effectiveness of health care. From here, it is a small step to label certain categories of people of being “at risk”, an idea that frames health literacy as “the ability to access and understand information on risk factors for health” (Harzheim et al., 2020, p.2) and “high risk” groups as in need of “information-intensive health interventions” (Greyson, 2017, p.778). These ideas understand risk from a cognitive, techno-scientific perspective as a pre-existing and objective hazard that is calculated by experts (Lupton, 2013, p.49). Risk has been alternatively understood from a sociocultural position as a threat that is shaped through “the social, and cultural contexts in which risk is understood, lived, embodied and negotiated” (Lupton, 2013, p.36). While this perspective still recognises the impact of risk, it understands danger as judged by a wide variety of lay concerns rather than forming a neat and probabilistic calculation. These ideas open up the concept of risk to a range of different research questions, including how information literacy brings risk into view (Lloyd & Hicks, 2021) and mitigates it (Hicks, 2019). A shared research agenda could build upon this early work to examine how risk is shaped through and in opposition to scientific information, which serves as a source of knowledge and uncertainty, as well as to explore how risk forms a resource in the construction of subject positions (cf. Armstrong, 2005).

Another topic that has been relatively unexamined in both fields is the role that libraries can play as sponsors of health literacy. Sponsors of literacy is a term that refers to “agents, local or distant, concrete or abstract, who enable or induce” participation in literacy practices (Brandt, 2001). Originally alluding to systems of patronage and commercial relationships that offered literacy instruction, the concept also recognises the important role that people and material objects, amongst other interests, play in shaping access to everyday literacy practices. Public libraries and librarians have been recognised as playing sponsoring roles for reading and writing (e.g., Horning, 2010). However, despite the recognition that knowing is shaped in everyday spaces (Lloyd & Wilkinson, 2016), there has been little examination of how the concept of sponsorship could be extended to health information practices. A shared future research agenda could consequently examine the role that public libraries, amongst other settings (Bröder et al., 2018, p.13), play in facilitating and inhibiting access to healthcare, including in relation to addiction, stress, nutrition, early life and social support (Philbin et al., 2019; HEE, 2021). Research could also interrogate the recent focus within academic libraries on wellbeing initiatives, as well as the potential contributions that community initiatives such as toy libraries could make to health literacy work. At the same time, the recognition that literacy must always be entwined with ideological pressures highlights how research must remain vigilant to the ways in which power flows and is consolidated within community spheres.

A focus on the sponsors of literacy can also be extended to an exploration of the ways in which community health practitioners mediate health literacy practices. Workplace information literacy, which examines processes that "employees go through to seek and use information to complete their work" (Cheuk, 2000, p.178) forms a significant dimension of information literacy research. Originally focused on white collar employment, workplace information literacy has since expanded to examine information activities within a wide variety of professions, including clinical nursing staff (Bonner & Lloyd, 2011; Johannisson & Sundin, 2007). However, while these studies have drawn attention to how knowledge claims are disputed and justified within health contexts, there has been little examination of how health and social care professionals mediate information activities within the context of community work. A research agenda could consequently use workplace information literacy research to extend Rudd's (2015) call to consider the capacity of health professionals to support access to information and examine how non-clinical staff "enable, support, teach, model... recruit, regulate, suppress, or withhold" health information activities- as well as the advantages that they gain in doing so (Brandt, 2001, p.556).

Research could also interrogate how academic information literacy instruction prepares future religious ministers for information mediation and teaching roles, as the ongoing COVID pandemic demonstrates the importance of faith-based groups within vaccine drives (Razai et al., 2021). A critical research agenda could further engage with the broader implications of information mediators, including how marginalised groups may only be "reclaimed as safe and good" through professional, information-focused rehabilitation (Shoveller & Johnson, 2006, p.55) as well as broader questions related to the adjunctification of professional visibility within the context of informed choice (Spoel, 2006, p.205).

A final element of a shared research agenda is research methods, which do not always form the focus of either health or information literacy studies. It is, perhaps, not surprising that Papen, who did so much to push the field of health literacy around the sociocultural turn, was one of the first to employ patient centred methods such as ethnography and autoethnography to study how people participated in healthcare. Since then, the use of qualitative research methods has become more common as researchers have started to recognise how studying the perspectives of patients rather than healthcare professionals provides insight into constructs that either might not be included on the health literacy tests that continue to dominate the field, or might be hard to measure (Jordan et al., 2010). However, there have still been relatively few attempts to examine the affordances of arts-based methods within health literacy research, including the role that these methods can play in continuing to challenge dominant deficit discourses (e.g., Estacio et al., 2020; Gahagan & Colpitts, 2017; Lupton, 2019). Future research could continue to build on this work, as well as drawing from sociocultural information literacy studies that have explored how visual research methods can provide insight into tacit and nuanced forms of knowing (Eckerdal, 2011; Hicks & Lloyd, 2018) to extend understanding about the information activities, objects, and arrangements of health literacy practice. After all, if health literacy is to be understood as a social practice it must be studied as such (Dray & Papen, 2004, p.314).

5. Conclusion

Questions of health and wellbeing afford opportunities for learning as people seek to understand and manage their conditions (Papen, 2012). Information, which comprises both formal and informal sources of knowledge, plays a key role within these transformative and educational processes. However, health literacy's traditional focus on reading and writing means that information has often been sidelined from considerations of health and illness, despite the prominent role that it is accorded within the field's guiding documents (e.g., Malloy Weir et al., 2016). This paper has drawn upon a wide-reaching narrative literature review to argue that placing information literacy and health literacy in dialogue contributes to a far more complex theorisation of the role that information plays within health contexts, including how patients and their support networks access, use, circulate and share relevant knowledge. As a consequence, these ideas also support the IUHPE's recommendation (Bröder et al., 2018, p.20) that greater collaboration between related fields will lead to a stronger health literacy research agenda; while it is beyond the scope of this paper to explore the impact that health literacy research could have on information literacy, it is evident that the benefits stretch both ways. One of Petersen and Lupton's (1996, p.154) most powerful critiques of public health research is that we prefer to talk about the need to train lay people to understand experts rather than "the need to train experts to better understand and accommodate the perspectives of lay people." This paper contends that it is only through centring the multifaceted and sophisticated means through which people access and use information within health contexts, including the ways in which they resist and challenge these ideas, that we can begin to meet this goal.

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