



PROJECT MUSE®

Exploring Health Information Use by Older Australians within Everyday Life

Christine Yates
Ian Stoodley
Helen Partridge
Christine Bruce

Library Trends, Volume 60, Number 3, Winter 2012, pp. 460-478 (Article)

Published by The Johns Hopkins University Press
DOI: 10.1353/lib.2012.0004



➔ For additional information about this article
<http://muse.jhu.edu/journals/lib/summary/v060/60.3.yates.html>

Exploring Health Information Use by Older Australians within Everyday Life

CHRISTINE YATES, IAN STOODLEY, HELEN PARTRIDGE,
CHRISTINE BRUCE, HELEN COOPER, GARY DAY, AND
SYLVIA L. EDWARDS

ABSTRACT

Exploring information use within everyday or community contexts is a recent area of interest for information literacy research endeavors. Within this domain, health information literacy (HIL) has emerged as a focus of interest due to identified synergies between information use and health status. However, while HIL has been acknowledged as a core ingredient that can assist people to take responsibility for managing and improving their own health, limited research has explored how HIL is experienced in everyday community life. This article will present the findings of ongoing research undertaken using phenomenography to explore how HIL is experienced among older Australians within everyday contexts. It will also discuss how these findings may be used to inform policy formulation in health communication and as an evidence base for the design and delivery of consumer health information resources and services.

INTRODUCTION

The importance of information literacy as a key to empowerment and survival in the information age has been widely acknowledged and discussed within the discipline of library and information science (Bruce, 2002; Candy 2005; United States National Commission on Library and Information Science, 2003). In 2002, O'Sullivan asserted the relevance of information literacy in the real world, posing it as "critical for social and professional empowerment in a knowledge-based economy" (p. 8). Likewise, Todd (2000) promoted information literacy's importance in present day society stating that "information makes a difference to the everyday lives of people and that having the knowledge and skills to connect with and interact with this information can enable people to solve real world problems and address life concerns" (p. 30).

Yet despite widespread appreciation of the importance of information literacy for everyday life in the information society, research into information literacy to date has predominantly focused on its application in educational settings (Harding, 2008; Lloyd & Williamson, 2008). In more recent years the research territory for information literacy has broadened, extending to investigations of information literacy in workplace or professional environments (Gasteen & O'Sullivan, 2000; Kirton & Barham, 2005; Kirton, Barham, & Brady, 2008; Lloyd, 2005, 2009). However, research into information literacy within everyday life or community settings remains an emerging field of study, and has been identified by several authors as a significant gap for investigation (Lloyd & Williamson, 2008; Partridge, 2008; Partridge, Bruce, & Tilley, 2008).

Within everyday life, health is one particular context where the importance and relevance of information literacy has been emphasized. For instance Cullen (2005) proposed the importance of information literacy maintaining it is "not just a library issue, but a broadly based education and learning issue, and a health issue" (p. 6). In the same way, Grant (2002) acknowledged the value of information literacy and health stating, "Information literacy and consumer health are natural allies, both contributing to health and quality of life for all citizens." It is perhaps no surprise therefore that discussion about the concept of health information literacy has emerged in both professional and scholarly literature in recent years.

This article presents the findings of ongoing research exploring how health information literacy is experienced by older Australians in everyday life, and where health information literacy is understood as using information to learn about health. The article also discusses how health information literacy research can be used to inform the development of public health policy, and enhance health information design and delivery.

HEALTH INFORMATION LITERACY

The first definition of health information literacy was provided by the Medical Library Association (MLA) in 2003 and was developed by the Health Information Literacy (HIL) Task Force, a working party established by the MLA to assist with addressing issues concerning health information literacy in America (Shipman, Kurtz-Rossi, & Funk, 2009). The description arose out of collective consideration of the term "health literacy" as defined by the U.S. Department of Health and Human Services and the American Library Association's definition of "information literacy" to produce a working definition of health information literacy as "the set of abilities needed to: recognize a health information need; identify likely information sources and use them to retrieve relevant information; assess the quality of the information and its applicability to a specific situation; and analyze, understand, and use the information to make good health decisions (MLA, 2003, para. 5).

Since this definition first emerged, interest in health information literacy has received rising attention in information and library science literature, among scholars, researchers, and practitioners alike. Published literature to date concerning health information literacy has largely been limited to areas of interest such as discussion about its importance and relevance (e.g., Candy, 2005; Grant, 2002; Horton, 2008), and roles for libraries and librarians in developing and promoting health information literacy in various contexts (e.g., Barrett, 2009; Burnham & Peterson, 2005; Cullen, 2005; Grant, 2002; Shipman, Kurtz-Rossi, & Funk, 2009; Wessel, Wozar, & Epstein, 2003).

Interest in health information literacy among health professionals has also been a focus of research and discussion. This includes health care providers' use of health information sources to undertake their professional responsibilities (e.g., patient care) and assisting patients with personal health information needs (e.g., Craig, 2009; Shipman, Kurtz-Rossi, & Funk, 2009). Within community settings, initiatives aimed at developing information skills are another focus within the existing body of literature. Examples include workshops or classes to help older adults navigate the Internet for health information and strategies to assist people with evaluating information quality (e.g., Burnham & Peterson, 2005; Gross, Famiglio, & Babish, 2007; Hammond, 2005; Susic, 2009; Werner & Chimato, 2005). However, despite growing interest surrounding health information literacy there is limited understanding regarding how health information literacy is experienced within everyday life. The research reported in this article begins to meet this need.

This research also builds upon and complements existing related research that has examined information in the context of consumer health. Termed "consumer health information research" two distinct lines of inquiry presently exist: health information behavior and health literacy. The area of health information behavior and health consumers has received considerable research attention in recent years. It has examined a range of behaviors through which individuals acquire health information such as seeking, scanning, and sharing. Health information seeking has received the most extensive research attention to date in this field. Health literacy is an area of inquiry that has emanated from research that has explored relationships between low literacy, health status, and health outcomes. Research in this area has primarily been concerned with instruments to measure an individual's level of health literacy in a health information context; risk factors that may affect health literacy and the impact of low literacy levels on health and health outcomes. While existing research in this domain has been framed by the lenses of behavior and literacy, the research this article describes has explored information as it is experienced by the health consumer. It examines consumers' engagement with information in a more holistic and collective sense and through

the adoption of a phenomenographic research approach variation in this experience is revealed.

THE RESEARCH PROJECT

This section presents the findings of ongoing research exploring how health information literacy is experienced by older Australians in everyday life. The primary aim of this project was to explore variation in how older Australians use information to learn about their health.

Research for this project has been undertaken in a staged manner, with two phases undertaken to date. This article presents the findings from Phase Two. Phase One was a pilot study for the project involving interviews with four participants aged between fifty-seven to seventy years. The findings from Phase One were reported in 2009 (Yates, Partridge, & Bruce, 2009). Phase Two has involved interviews with twenty participants aged between fifty-seven and eighty-one years. The final phase (i.e., Phase Three) will be expanded into two age-based substudies: (a) persons aged forty-five to sixty-four years and (b) persons aged sixty-five to seventy-nine years.

In this research, HIL is understood as experiencing different ways of using information to learn about health, an approach that allows a wide interpretation of information literacy. The interpretation of information literacy as using information to learn (Bruce 2008; Bruce & Hughes, 2010) stems from the relational model to information literacy, where information literacy is interpreted as a complex of way of experiencing information use (Bruce, 1997). The relational model approaches information literacy from the position of experience, depicting interactions between the user and his/her environment, and seeking to understand the relationship between users and what they constitute as information. The relational approach to information literacy research is concerned with engagement with information when learning in different contexts, instead of a discrete set of skills or attributes that an individual must possess or exhibit (Bruce, 2008, Bruce & Hughes, 2010).

Approach

The chosen methodology for this research was phenomenography, a qualitative research approach (Marton & Booth, 1997). Phenomenography seeks to explore differences and variations in the way people think or experience particular phenomena (Marton, 1986), and is underpinned by the notion that individuals collectively experience and understand phenomena in a number of qualitatively different but interrelated ways (Marton). Therefore, the focus of phenomenographic research is directed toward identifying "variation" in the collective experience and to understand the broad spectrum of experience as opposed to the "typical" or the "norm."

Phenomenography is considered to be a relational approach to research because the research object (the phenomenon under investigation) and the research subject (the person experiencing the phenomenon) are not viewed or treated separately. Instead, phenomenographic research focuses on exploring the relations formed between the research subject and the way they experience the phenomenon under investigation (Marton & Booth, 1997). Research questions for a phenomenographic study are thus oriented toward how a particular phenomenon appears to people, instead of investigating their particular behaviors or actions (Marton & Booth, 1997).

Phenomenography has been used to explore a range of phenomena in the spheres of health and information literacy. In the area of health phenomenography has been used to explore how people experience health education (Abrahamsson, Springett, Karlsson, & Ottosson, 2005; Ringsberg, Lepp, & Finnström, 2002), how people conceive health (Fagerlind, Ring, Brülde, Feltelius, & Lindblad, 2010; Hsu, 2007) and the experience of caregiving for health (Wang, Barnard, & McCosker, 2004). Phenomenography has similarly been used in information literacy research for a range of investigations including students' experiences of Web-based information searching (Edwards, 2006), the relationship between approaches to information seeking and learning outcomes (Limberg, 1999), senior managers' experiences of information use (Kirk, 2002), the experience of information literacy among higher educators (Bruce, 1997), and the relationship between information literacy and learning (Lupton 2008). Furthermore, the value of phenomenography as an approach for undertaking research in each of these fields has been recognized by various authors, for example Barnard, McCosker, and Gerber (1999) in health, and Bruce (2000) and Limberg (2005) in information literacy.

Participants

Participants in the study reported here included twenty males and females aged between fifty-seven and eighty-one years of age (61.2 years average). All participants were residents from the Greater Brisbane area of Queensland, Australia. Participants were recruited via e-mail messages distributed to organizations targeted toward older persons (e.g., seniors' clubs). Community organizations supporting adult leisure or hobby interests (e.g., music, gardening) where persons of the desired age range were deemed likely to be found were approached in a similar manner.

Data Collection and Analysis

Semi-structured interviews were used for data collection and this is the most common technique utilized in phenomenographic research (Limberg, 2000). Interview questions are designed in such a way so as to reveal different aspects of the particular phenomenon of interest. The questions

posed are typically open-ended and divergent in nature in order to allow participants to describe their own experience of the phenomenon under investigation (Marton, 1986; Marton & Booth, 1997).

Participants were asked a standard set of questions that were designed to orient them toward their experience of using information to learn about their health:

- Can you describe a time when you used information to learn about your health?
- What kinds of information have you used to learn about your health?
- Describe your experience of being a health information user.

Each participant was given a copy of the questions prior to the interview, to provide an opportunity to reflect on the questions and to minimize potential stress or discomfort in the interview itself.

A range of general probe questions were also utilized to elicit further information from participants about responses they had provided. These questions were typical for a phenomenographic study (Bowden et al., 1992; Bowden, 2000; Patton, 1990):

- Can you tell me more about that?
- Could you explain that further?
- Could you please give me an example?

Each interview was recorded with the consent of the participants. Interview duration ranged from twenty-four to fifty-seven minutes. Audio recordings were transcribed and transcripts used as the primary source for data analysis.

The objective of data analysis in phenomenographic studies is to uncover variation in how the phenomenon under investigation is experienced (Bruce, 2000; Limberg, 2005), in this case using information to learn about health. The process involves an iterative cycle of reviewing written transcripts in order to identify significant variation in what participants have said with regard to the specific phenomenon under investigation. The intended outcome from this process is a group of categories that reflect the various ways in which the phenomenon is experienced (Marton & Booth, 1997). Taken together, the categories depict the collective experience of the phenomenon rather than that of individual participants. Quotes from interview transcripts are typically used in phenomenographic studies to illustrate each category and how each one differs from other categories (Bowden, 2000; Marton, 1986).

OLDER AUSTRALIANS' EXPERIENCE OF HEALTH INFORMATION LITERACY

For this research study, analysis of interview data revealed a number of different categories that represent variation in how older Australians ex-

perience using information to learn about their health. The findings presented here include a description of each category and an explanation of the meaning of each experience. While the categories are based on a specific cohort, given the breadth of the sample, these experiences are likely to be present in the wider population of older Australians.

Older Australians experience health information literacy (HIL) as

- storing information;
- managing information;
- tuning in to personal information;
- making a difference with information;
- participating in an informed community.

The source of the illustrative quotes is indicated in parentheses, for example (1) indicates the quote is from Interview 1.

Storing Information

When older Australians experience HIL as storing information, they focus on stocking their storehouse with potentially useful information. In this experience learning is intuitive and is about committing information to memory in order to recall it at a future point of need. They are aware of external information, which is potentially useful to their own context. They let information come to them spontaneously and trust they will remember what's important. Typically, this means reading about a health condition or solution that is not immediately relevant to them but which they consider could become relevant in the future. Usually they rely on their memory to be triggered by a future event, at which time the deposited information will be recalled in sufficient detail to follow up on it. Thus, they consider information to be stable across time; learning is about memorizing; and they are not yet looking to apply the information in a specific context.

You pick up something and it goes into your hard drive (points to head). I might not use it immediately, I might not ever use it. But then something may pop up and I'll think, "Oh yeah, George said something about that, what was that?" And that might trigger seeking some further information, so I might give George a call or go and look it up. (18)

If I come across something that I think I could use later on well then I will store it up here [points to head]. (20)

Managing Information

When older Australians experience HIL as managing information, they focus on organizing information that is immediately relevant to them. In this experience, learning is strategically procedural, and about compiling particular information and controlling its use. They are aware of external information that may be useful in a specific personal context. This experience may be subdivided into two subcategories: organizing complexity and leveraging knowledge.

Organizing Complexity. When managing information is about organizing complexity, older Australians group similar information together, and keep records of their health history and questions that they have. These records are referred to from time to time, when an issue arises or in preparation for consultations with doctors. The emphasis is on having a reliable information procedure in place that informs their health needs. Thus, information is an object in itself, complex and needing to be governed; learning is about the logistics of organization; and they are looking to apply the information in a specific context.

We had one (file) for each child, and one for myself and my husband combined. Now that they have all gone my husband and I have a separate file each. I have one for optical and dental and doctor. My husband has the same. And we put our bills in there and any sort of information we get from them. Even things like test results. (12)

The first thing I do before I go to the doctor is get out my notebook and see if there is anything I have written . . . since I last went to see him that I want to ask him about. So that can be things like scripts that I need to refill or questions. (20)

Leveraging Knowledge. When controlling information is about leveraging knowledge, older Australians use the information they have to formulate questions for their practitioner, assess further input on a topic, and confirm evidence for a particular point of view. The accuracy of the information is considered carefully, including questioning the reliability of its source. The emphasis is on using information strategically to respond to their health needs. Thus, information is an object in itself, a tool potentially useful to manipulate other information; learning is about multiplying the effectiveness of information; and they are looking to apply the information in a specific context.

In my experience, you don't get a lot of information from doctors . . . they spend 10 minutes with you and say "Here, take this" or "Do that," and you get some mysterious pill that's supposed to do something for you but nobody really tells you what it will do. So, you've got to go and look it up on the Internet or something like that. (8)

There is so much information there [on the Internet] and as a lay person I really don't have the ability to diagnose. But it will lead me in certain directions and give me ideas on questions to ask. So I'll use that information to help me ask questions. (17)

Tuning in to Personal Information

When older Australians experience health information literacy as tuning into personal information, they focus on themselves as a source of knowledge. In this experience learning is personal and is about being aware of and taking seriously your own experience. They are aware of external and internal information that may be useful in a specific personal context.

This experience may be subdivided into two subcategories: embodied knowledge and accumulated experience.

Embodied Knowledge. When tuning in to personal information is about embodied knowledge, older Australians observe their own symptoms, in order to adjust their lifestyle or treatment plan. They may be assisted in this by a medical device that monitors a particular aspect of their health such as a glucometer for calculating and monitoring blood glucose level. Thus, they consider information to be internal; learning is about listening to your own body; and they are looking to apply the information in a specific context.

Last week I was feeling a bit nauseous in the stomach. So I took a reading (of my blood sugar level) and it was down to about 3.7. So I took the jelly beans and within half an hour I was feeling well again. (10)

I went back to the doctor and said "I'll take the weekly one, but you can stuff your daily one." And he said "why" and I said "because I'm constipated with it." . . . And I said "I've already tried, I've stopped." And it's working fine. So mostly I'm listening to how I am feeling within myself. My own body . . . that's my real guiding line, is how I feel myself against other information that I gather. I weigh them out but truly it has to be how you feel internally. (19)

Accumulated Experience. When tuning into personal information is about accumulated experience, older Australians rely on their ability to make sensible decisions based on their health history. They remain open to life's informal lessons and apply them to future needs. This means living a varied life and taking on new ideas. Thus, they consider information to be internal; learning is about recalling your experience; and they are looking to apply the information in a specific context.

I'm a person who uses common sense, so therefore I think my basic nursing training helped me. . . . It was just natural, I didn't do any great reading or anything like that . . . I just used common sense . . . I'm very highly critical of all the information that's put out there, you can read so much and get so confused with it all, you don't know what's what—so I don't read it! . . . Life is a journey and it's not a straight road. . . . But when you deviate, it's in the deviation that you gain that experience. . . . So, you've got to deviate and it's in that journey of deviation that your lifestyle comes and in that journey you learn how to lead a healthy life. (1)

Eat well, play well, drink well! Just as long as you are feeling good. You know you are hearing bits and bobs all the time and I suppose some of it must be assimilated. But I don't particularly go out on the hunt. (19)

Making a Difference with Information

When older Australians experience health information literacy as making a positive difference, they focus on their influence over their own health. Learning is entrepreneurial and is about becoming able to apply knowledge in order to bring about a change in their life. They are aware of

both external and internal information, and that these are powerful and may be useful in changing a specific personal context. They are enabled by information to act more freely and independently. They may supplement information provided to them by medical professionals, for example searching for the ramifications of having a condition or details of a procedure they are to undergo. They may take a critical approach, questioning their practitioner's advice and trusting their own decision making. Thus, information is liberating, helping them to take control; learning is about applying information to change your own life; and they are looking to apply the information in a specific context.

The more information you have about anything, the more empowered you are. . . . Ignorance is not bliss when you have something wrong with you. The more you can know, the more you can know what that treatment is for, the outcomes from that treatment. . . . The more you know, then there's less chance of something coming out of left field and knocking you for six. (14)

You get diagnosed and you sort of go into shock. . . . I think it is more important to know things rather than stick your head in the sand. You know what to expect, you are not frightened. . . . If you don't know that your disease is progressing and something happens that scares you . . . if you knew it was coming you would think, "Okay, that has gone to that stage." (16)

Participating in an Informed Community

When older Australians experience health information literacy as participating in an informed community, they seek information about health in community with others. Learning is collaborative and is about connecting with other people. They are aware of both external and internal information, and that these are powerful and may be useful in changing the community's specific contexts. They may gain information relevant to their own health needs or provide information relevant to the health needs of others, through relating to their spouse, a friend, or a member of their community. Thus, information is powerful in changing the community and meaningful across contexts; learning is about participating in a community of fellow learners; and they are looking to apply the information in a specific context.

I have looked up information for other people on the internet. My neighbour had a very painful condition . . . and she wasn't finding any help from various health professionals she went to. So I did a bit of research on the internet about that and gave it to her. . . . And my mum, she gets cramps. So I looked up information about how to prevent cramps or how to treat them. (7)

When you get a bunch of friends together and you'll be sitting and talking about everything in the world. And that was where we heard about the CSIRO cookbook . . . I had a look. . . . They looked like nice recipes, they were easy to . . . cook. It makes sense, it was good food.

And I've seen others that it's worked on . . . I could see the physical changes, the weight change. And I also saw how much healthier they were looking. (19)

Overview of Older Australians' Experience of Health Information Literacy

Table 1 presents an overview of how older Australians experience health information literacy. The content is drawn from the preceding prose descriptions. A phenomenographic description of experience includes the differing meanings (called the *referential aspect*) and the differing constituent elements (called the *structural aspect*) of the experience. In the table, the referential aspect of the categories is in the meaning column. Selected elements of the structural aspect of the categories are in the focus, expanding awareness, and dimensions (information and learning) columns. The focus is the center of attention of the categories. The expanding awareness is the progressively larger view taken in the categories. The dimensions are aspects of the experience that are represented across all categories but which are qualitatively different in each category.

Health Information as Experienced by Older Australians

Older Australians use the following kinds of information to learn about their health:

- Print – brochures, magazines, books, newspapers
- Multimedia – TV, radio, YouTube, Internet searches, medical videos, photos
- Test results – laboratory tests, blood sugar machine
- Meetings – seminars, support groups, health expos
- People – family, friends, childhood elders, colleagues, medical practitioners, group members
- Own body – symptoms, feelings, reaction to treatments, personal experience

The information is usually prioritized by such criteria as authoritative-ness, contextualization to the patient's circumstances, interactivity, and focus on the specific problem at hand:

- Medical practitioners are trusted most highly. They have the knowledge and skill to diagnose, they know your specific situation and medical history, and you choose a practitioner you can relate to. Practitioners are typically considered to be the primary source of information about health.
- People known personally (friends, support groups) are typically considered trustworthy. The advantage of people is you are able to ask questions face-to-face and obtain the viewpoint of patients who have faced similar situations.
- Text is considered relatively useful, especially if composed with your area of interest in view. Such impersonal sources are considered good for general background insights.

Table 1. Older Australians' Experience of Health Information Literacy

Category	Meaning HIL is...	Focus	Expanding awareness	Dimensions	
				Information	Learning
1. Storing information	intuitive, stockpiling information for possible future use	Stocking a storehouse	External information for potential contexts	Information is stable and meaningful across time, and useful independent of its context.	Learning is about memory and recall.
2. Managing information	strategically procedural, organizing information	Using information to manage information	External information <i>in context</i>	Information is complex and needs to be governed according to the context, in order for it to be useful.	Learning is about assembling and managing information.
3. Tuning in to personal information	personal, listening to your own experience	Trusting own health experience	External and <i>internal information</i> in context	Information is internal as well as external.	Learning is about taking your own experience seriously.
4. Making a difference with information	entrepreneurial, influencing my health positively	Changing my health	External and internal information <i>changing context</i>	Information is powerful. It helps change my life.	Learning is about becoming able to carry out change for the better.
5. Participating in an informed community	collaborative, influencing each others' health	Changing the health of the whole community	External and internal information <i>changing the wider context</i>	Information is powerful. It changes the community and is relevant across contexts.	Learning is about connecting with fellow learners.

Online information is readily accessible but needs to be tested for reliability and accuracy against other sources of information. The quantity of information available through this avenue is daunting. Some gain enough confidence in their own embodied knowledge to use it as a yardstick against which to measure even the usually highly esteemed doctor's advice.

HEALTH INFORMATION LITERACY: IMPLICATIONS FOR POLICY IN PUBLIC HEALTH

In Australia, "public health" is the branch of health care that investigates, researches, and analyzes the determinants of health, and the contexts in which these determinants operate. Public health policy, interventions, and initiatives are activities that are focused on understanding and managing determinants (National Public Health Partnership, 1998).

Health determinants are an internationally recognized concept and are defined as factors that individually or in combination affect the health of individuals and communities. The determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviors (WHO, n.d). This research clearly sits in the area of understanding individual characteristics and behaviors by exploring the various ways that people experience using health information through their engagement with the health information landscape.

A key challenge for health care policy makers at federal, state, and local government levels is facilitating health promotion messages and avenues to deliver messages that positively impact identified health determinants. These messages range from healthier lifestyle choices, to critical health care choices. As HIL research informs us about peoples' ways of engaging with health information (how, where, when, why, what), the challenge to public health policy is to ensure that health messages are designed and delivered in different and constantly changing ways in order to meet the diverse needs of a multifaceted community. Policy makers may need to consider funding further research into understanding message design and delivery experiences that differ for age groups, social settings, and level of education. Public health policy has been active in primary and secondary schools in the delivery of healthy lifestyle information to children and adolescents, however this HIL research indicates that for older Australians the motivations to seek, engage, and use health information operate on different drivers and require different communication channels.

Further, how health information is presented and communicated is not just about reading about a topic. Instead what people experience as information takes different forms, and their different experiences reveal critical points of focus for developing understanding, knowledge, decision making, and positive action. Effective and efficient communication of health information includes thinking more broadly about what con-

stitutes information and the means of transmitting that information. The research findings challenge the traditional public health message strategies to consider how people engage with health information beyond the traditional transmissive and tangible approaches, in other words understanding how people “experience information” and respond to that experience.

Research highlights more directly challenge health care professionals in their interactions with patients and carers. Both content and context are relevant in the communication and assimilation of health information requiring access to quality, timely, and relevant information. As highlighted by the participants, ten minutes with the GP is hardly enough time for the transmission of important information, let alone adequate time for the individual to engage in a meaningful information exchange.

Focusing on public health policy, the following initiatives are emerging as potential opportunities to enhance the design and delivery of health information:

- First, health information designers should consider the intent of a health message (for example, tobacco smoking cessation campaigns such as *QUIT Smoking*), relate this to the stimulus for an individual to respond to this message, and then design communication channels that respond to that stimulus.
- Second, funding research is necessary to investigate the various critical points for individuals seeking health information in order to develop understanding, knowledge, decision making, and positive action.
- Third, we need to adapt health information in ways that promote responses beyond understanding (that is promote positive health action/choices) and seek to appreciate how individuals respond to information experiences.
- Fourth, federal policymakers might increase funding for research into health information literacy in order to improve the channels for the provision of health information, particularly for populations at increased risk for preventable diseases and for those groups with known health disparities.
- Fifth, health information design skills might become a basic component of the health professions’ education and training programs, particularly programs that train professionals in the fields of public health, medicine, nursing, pharmacy, and allied health. Health discipline educators must understand that information literacy is not a homogenous set of skills; rather it reflects a person’s experience of using information, an experience that is likely to vary across cultural and contextual boundaries, across time, and across a lifetime.
- Finally, the final frontier for HIL research will be to support the design of individually controlled (personal) electronic health records (PEHR). PEHR are purported to bring great benefits to both individuals and the health system, with timely access to relevant and accurate personal

health information. The value of PEHRs may in fact be greater if they are designed to collect, store, and present health information to individuals in ways that people seek to access such information. PEHR design must not just focus on the collection of personal health events/issues but also the timely linking of relevant/quality information about a condition or with a preventative health message.

Whether the challenges are new or enhanced use of electronic media or using community/social situations the very real opportunity is to enable and support people interacting with information to support lifelong health choices and improve their health status. Research into people's experiences of using information across all ages to learn about their health can support policy makers in influencing the design, use, and accessibility of health information in terms of the resources, places, processes, and the way people make use of health information. As we better understand people's experiences of health information use, we can modify and design better health information delivery mechanisms and environments which support people to effectively experience and use health information.

CONCLUSION

Health information literacy is an emergent topic in the information literacy research agenda, and an issue attracting rising attention in the library and information science profession. This article has focused on three aspects of health information literacy research.

First, it has examined the emergence of health information literacy in the professional discourse, and provided an overview of discussion and research that has been conducted to date in this sphere. Second, it has presented findings of ongoing research into how health information literacy is experienced by older Australians in everyday life, where health information literacy is understood as experiencing different ways of using information to learn about health. Research into the experience of health information literacy among Australian older adults will continue in the coming years as part of a three-year project funded by the Australian Research Council (ARC) entitled *Understanding Health Information Literacy in Australia's Ageing Population: A Qualitative Study*. Finally, it has illustrated how information literacy research can be used to inform public health policy, and the design and delivery of consumer health information.

The work also contributes to the field of information literacy research more generally. Through adopting a broader interpretation of information literacy and expanding the research territory into a community setting, new insights into the contextual nature of information literacy have been provided. These insights further reveal the complexity of information literacy as a phenomenon and focus of study.

Furthermore, considering the synergies between information use and health status, enhanced understandings about how people engage with

information for health purposes is also of great interest and significance to the areas of health communication and education. We anticipate that ongoing research exploring the ways in which people experience health information literacy, and what they perceive as knowledge or information for health will continue to yield new understandings about consumer health information. This knowledge can then be applied to inform the design, development, and dissemination of more effective health information programs, services, and education for present and future generations.

ACKNOWLEDGMENTS

This research forms part of a three year Australian Research Council (ARC) Linkage Project entitled Understanding Health Information Literacy in Australia's Ageing Population: A Qualitative Study (ARC LP 100100292). Ethical clearance for this research program was obtained from the Research Ethics Unit of the Queensland University of Technology (Ethics Approval Number 0800000684).

REFERENCES

- Abrahamsson, A., Springett, J., Karlsson, L., & Ottosson, T. (2005). Making sense of the challenge of smoking cessation during pregnancy: A phenomenographic approach. *Health Education Research, 20*(3), 367–378.
- Barnard, A., McCosker, H., & Gerber, R. (1999). Phenomenography: A qualitative research approach for exploring understanding in health care. *Qualitative Health Research, 9*(2), 212–226.
- Barrett, F. A. (2009). Connecting older adults to quality health information on the Internet: A selective annotated bibliography. *Reference Services Review, 37*(4), 451–462.
- Bowden, J., Dall'Alba, G., Martin, E., Laurillard, D., Marton, F., Masters, G., et al. (1992). Displacement, velocity, and frames of reference: Phenomenographic studies of students' understanding and some implications for teaching and assessment. *American Journal of Physics, 60*(3), 262–269.
- Bowden, J. A. (2000). The nature of phenomenographic research. In J. A. Bowden & E. Walsh (Eds.), *Phenomenography* (pp. 1–18). Melbourne, Australia: RMIT University.
- Bruce, C. (1997). *The seven faces of information literacy*. Adelaide: Auslib Press.
- Bruce, C. (2000). Information literacy research: Dimensions of the emerging collective consciousness. *Australian Academic and Research Libraries, 31*(2), 91–109.
- Bruce, C. (2002). *Information literacy as a catalyst for educational change: A background paper*. White Paper prepared for UNESCO, the U.S. National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy Meeting of Experts, Prague, The Czech Republic.
- Bruce, C. (2008). *Informed learning*. Chicago: Association of College and Research Libraries.
- Bruce, C., & Hughes, H. (2010). Informed learning: A pedagogical construct attending simultaneously to information use and learning. *Library & Information Science Research, 32*(4), A2–A8.
- Burnham, E., & Peterson, E. B. (2005). Health information literacy: A library case study. *Library Trends, 53*(3), 422–433.
- Candy, P. (2005, November 6–9). *Health & human services and information literacy*. In S. Garner (Ed.), High-level colloquium on information literacy and lifelong learning, Bibliotheca Alexandrina, Alexandria, Egypt. Retrieved January 15, 2011, from <http://www.ifla.org/III/wsis/High-Level-Colloquium.pdf>
- Craig, E. (2009). Better informed for better health and better care: An information literacy framework to support health care in Scotland. *Health Information & Libraries Journal, 26*(1), 77–80.

- Cullen, R. (2005). Empowering patients through health information literacy training. *Library Review*, 54(4), 231–244.
- Edwards, S. (2006). *Panning for gold: Information literacy and the net lenses model*. Adelaide: Auslib Press.
- Fagerlind, H., Ring, L., Brülde, B., Feltelius, N., & Lindblad, Å. K. (2010). Patients' understanding of the concepts of health and quality of life. *Patient education and counseling*, 78(1), 104–110.
- Gasteen, G., & O'Sullivan, C. (2000). Working towards an information literate law firm. In C. Bruce & P. Candy (Eds.), *Information literacy around the world: Advances in programs and research* (pp. 109–120). Wagga Wagga, NSW: Charles Sturt University.
- Grant, S. (2002). *Information literacy and consumer health*. White paper prepared for UNESCO, the U.S. National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy Meeting of Experts, Prague, The Czech Republic.
- Gross, V. A., Famiglio, L. M., & Babish, J. (2007). Senior citizen access to trusted stroke information: A blended approach. *Journal of Consumer Health on the Internet*, 11(2), 1–11.
- Hammond, P. A. (2005). Consumer health librarian. *Reference Services Review*, 33(1), 38–43.
- Harding, J. (2008). Information literacy and the public library: We've talked the talk, but are we walking the walk? *Australian Library Journal*, 57(3), 274–294.
- Horton, F. W. (2008). *Understanding information literacy: A primer*. Edited by the Information Society Division, Communication and Information Sector. Paris, France: UNESCO. Retrieved December 1, 2011, from <http://unesdoc.unesco.org/images/0015/001570/157020e.pdf>
- Hsu, T. H. (2007). *Understanding the health experiences of Taiwanese workers*. Unpublished doctoral dissertation, Queensland University of Technology. Retrieved December 1, 2011, from <http://adt.caul.edu.au/>
- Kirk, J. (2002). *Theorising information use: Managers and their work*. Unpublished doctoral dissertation, University of Technology, Sydney. Retrieved December 1, 2011, from <http://hdl.handle.net/2100/309>
- Kirton, J., & Barham, L. (2005). Information literacy in the workplace. *Australian Library Journal*, 54(4), 365–376.
- Kirton, J., Barham, L., & Brady, S. (2008). Understanding and practice of information literacy in Australian government libraries. *Australian Library Journal*, 57(3), 237–256.
- Limberg, L. (1999). Experiencing information seeking and learning. *Information Research: An International Electronic Journal*, 5(1). Retrieved December 1, 2011, from <http://informationr.net/ir/>
- Limberg, L. (2000). Phenomenography: A relational approach to research on information needs, seeking and use. *The New Review of Information Behaviour Research*, 1, 51–67.
- Limberg, L. (2005). Phenomenography. In K. E. Fisher, S. Erdelez, & L. McKechnie (Eds.), *Theories of information behaviour* (pp. 280–283). Medford, NJ: Information Today.
- Lloyd, A. (2005). No man (or woman) is an island: Information literacy, affordances and communities of practice. *Australian Library Journal*, 54(3), 230–237.
- Lloyd, A. (2009). Informing practice: Information experiences of ambulance officers in training and on-road practice. *Journal of Documentation*, 65(3), 396–419.
- Lloyd, A., & Williamson, K. (2008). Towards an understanding of information literacy in context: Implications for research. *Journal of Librarianship and Information Science*, 40(1), 3–12.
- Lupton, M. (2008). *Information literacy and learning*. Adelaide: Auslib Press.
- Marton, F. (1986). Phenomenography—A research approach to investigating different understandings of reality. *Journal of Thought*, 21(3), 28–49.
- Marton, F., & Booth, S. (1997). *Learning and awareness*. Mahwah, NJ: L. Erlbaum Associates.
- Medical Library Association (MLA). (2003). *Health information literacy: Definitions*. Retrieved December 1, 2011, from <http://www.mlanet.org/resources/healthlit/define.html>
- National Public Health Partnership. (1998). *National Public Health Partnership background paper: National directions for research and development in public health 16 March 1998*. Retrieved December 1, 2011, from <http://www.nphp.gov.au>
- O'Sullivan, C. (2002). Is information literacy relevant in the real world? *Reference Services Review*, 30(1), 7–14.
- Partridge, H. (2008). Community and workplace information literacy: Guest editorial. *Australian Library Journal*, 57(3), 20–210.
- Partridge, H., Bruce, C., & Tilley, C. (2008). Community information literacy: Developing an Australian research agenda. *Libri*, 58, 110–122.

- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Ringsberg, K., Lepp, M., & Finnström, B. (2002). Experiences by patients with asthma-like symptoms of a problem-based learning health education programme. *Family Practice, 19*(3), 290–293.
- Shipman, J. P., Kurtz-Rossi, S., & Funk, C. J. (2009). The health information literacy research project. *Journal of the Medical Library Association, 97*(4), 293–301.
- Susic, J. (2009). NIH senior health classes for senior citizens at a public library in Louisiana. *Journal of Consumer Health on the Internet, 13*(4), 417–419.
- Todd, R. (2000). Information literacy: Concept, conundrum and challenge: In D. Brooker (Ed.) *Concept, challenge, conundrum: From library skills to information literacy* (pp. 25–34). Proceedings of the Fourth National Information Literacy Conference, December 3–5, 1999, University of South Australia. Adelaide, South Australia: University of South Australia Library.
- United States National Commission on Library and Information Science. (2003). The Prague Declaration: “Towards an information literate society.” Retrieved February 10, 2011, from <http://portal.unesco.org/ci/en/files/19636/11228863531PragueDeclaration.pdf/PragueDeclaration.pdf>
- Wang, K., Barnard, A. G., & McCosker, H. (2004). *The experiences of primary caregivers of an in-home ventilator-dependent child: a phenomenographic study*. Unpublished manuscript, Queensland University of Technology. Retrieved December 1, 2011, from http://eprints.qut.edu.au/view/person/Wang_Katherine.html
- Werner, S. E., & Chimento, M. C. (2005). Creating a more informed health care consumer: How one medical library participates in mini medical school. *Journal of Consumer Health On the Internet, 9*(4), 27–33.
- Wessel, C., B. Wozar, J. A., & Epstein, B., A. (2003). The role of the academic medical center library in training public librarians. *Journal of the Medical Library Association, 91*(3), 352–360.
- World Health Organization (WHO). (n.d.). *The determinants of health*. Retrieved December 1, 2011 from, <http://www.who.int/hia/evidence/doh/en/>
- Yates, C., Partridge, H., & Bruce, C. (2009). Learning wellness: How ageing Australians experience health information literacy. *Australian Library Journal, 58*(3), 269–285.

Christine Yates is a doctoral candidate in Information Studies at Queensland University of Technology. Her research investigates how health information literacy is experienced among Australians aged forty-five to sixty-four years and forms part of a three-year Australian Research Council (ARC) Linkage Project entitled Understanding Health Information Literacy in Australia's Ageing Population: A Qualitative Study. Christine's qualifications include master of information technology (library and information studies) and a bachelor of business (international business). Within the library and information science profession, Christine has worked as a research assistant and various positions in academic, special, and school library environments. Her experience outside of the profession has included working in social housing management, project management, and community education roles in government and community sectors. Christine has a strong research interest in the area of community information literacy.

Ian Stoodley has extensive experience in qualitative research, in particular phenomenography. He has engaged with undergraduates, postgraduates, academics, and industry researchers in the areas of higher education teaching and learning, meta-research, and professional ethics. He is joint editor and author of *Transforming IT Education*. His principal academic interest is in the ethical formation and support of technology professionals, and he was awarded a QUT Faculty of Science and Technology Deans Award for Academic Excellence for his doctoral work, “IT Professionals’ Experience of Ethics and Its Implications for IT Education.” He was recently part of an Australian Learning and Teaching Fellowship that investigated the supervision of higher degree technology students. He is a qualified librarian who has worked in Australia, Europe, Africa, and Central Asia. He has spent time in the developing world passing on his librarianship skills and is instigating a Librarians Without Borders, Australia to support such ventures.

Helen Partridge is based in the Faculty of Science and Technology at the Queensland University of Technology (QUT), Brisbane, Australia. She is the coordinator of QUT's library and information science education program. Partridge's research interests include a focus on the way people use information in their everyday life. She is the lead investigator for an Australian Research Council Linkage grant (\$269,000) exploring how aging Australians use information to learn about their health. The three-year study is being conducted with the Queensland State Department of Health. Partridge's research draws on, and brings together, her interest in learning, information, and technology.

Christine Bruce is a professor in the Faculty of Science and Technology, Queensland University of Technology (QUT), Brisbane, Australia. She researches information literacy, information technology learning, graduate capabilities, and research study and supervision. Christine is best known for her development of the relational approach to information literacy and information literacy education, based on the *Seven Faces of Information Literacy* (Auslib Press, 1997). Her most recent extension of that concept is published in *Informed Learning* (ACRL and ALA, 2008). Christine conducts seminars and workshops internationally and is regularly sought as a conference keynote speaker. Her thinking is informed by her research and various professional roles over twenty-five years, including user education librarian, LIS educator, academic developer, and assistant dean for teaching and learning. In 2008 Christine was appointed a fellow of the Australian Learning and Teaching Council. In 2010 she received a State Library Board of Queensland Award for contribution to information literacy, information literacy education, and research.

Helen Cooper has over twenty-five years experience in the public and private health sectors. She has extensive experience in the management of small and large health information projects and services, casemix information and management systems, health services planning, and data analysis and interpretation. Helen also has experience in the tertiary education sector teaching into both undergraduate and postgraduate programs. Helen has a particular interest in health data quality and electronic health records. Helen has qualifications in health information management, business, education, and a masters in technology management. Helen's diverse range of qualifications and extensive experience brings a broad base of knowledge and skills to the research team.

Gary Day is currently the director of Organisational Development and Learning for SA Health. Gary also holds an adjunct associate professorship with Griffith University. Previously, he held the position of senior lecturer in Health Services Management and Convenor of the Health Services Management Portfolio at Griffith University. He has also held an academic position at the University of New England and Queensland University of Technology. Gary has worked in the not-for-profit and for-profit health care industry for over twenty-five years, including roles such as director of nursing, director of clinical services, director of finance, and chief executive officer. Over the last four years, Gary has had a pivotal role in the development and delivery of an innovative approach to developing leadership capacity and culture change among middle and executive-level health service leaders. Gary's qualifications include doctor of health services management, master of health management, bachelor of nursing, diploma of applied science (nursing management), registered nurse, and midwifery certificate.

Sylvia Lauretta Edwards is assistant dean of teaching and learning with the Faculty of Science & Technology at Queensland University of Technology (QUT), Brisbane, Australia. She is the recipient of a prestigious Australian Award for University Teaching in 2006. Since commencing with QUT in 1995, Sylvia has taught over 4,000 postgraduate and undergraduate students in the fields of Web content management, information management, Web design, and information systems. Sylvia researches information searching behavior, higher education leadership, and information literacy. She specializes in applying her research findings in practice, and her work has significantly contributed to the graduate capability agenda at QUT.