

# **The Medium and the Message in Health Communication: Control in New Media Environments**

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## **Introduction**

The proliferation of communication channels available for use in health promotion seems to offer a wealth of opportunities to improve the effectiveness of health promotion. In this paper we look at the use of social media as a possible resource in health promotion. We do this through a framework of medium theory – which allows us to consider the social and power relations that circulate through and are generated by different mediums. Medium theory holds a great deal of potential for communications literature and this paper attempts to refine it by indicating how it may be pertinent in a health communication context. Rather than slipping into the very unhelpful frame of technological determinism, we want to explore how the affordances and constraints of particular mediums are constructed in the context of existing social structures and institutional forms. The many-to-many affordances of social, networked media are in some ways antithetical to the one-to-many structures of much current health information delivery that embodies a particular understanding of expertise as residing with the health professions.

The research we are conducting is based in a project called Health-e Baby, a health promotion/communication project that is jointly funded by SA Health and the Australian Research Council. The aim of the project is to explore the information needs and media uses of pregnant women who are cared for by staff at the Lyell McEwin Hospital. To date, the research has explored the media access, use and literacy of both clients and staff in the hospital through interviews (54) and surveys (39). This research will inform the design of a tailored health information intervention. This paper firstly explores how medium theory is useful for framing the choices

available. It then summarises a review of academic literature on using social media for health promotion, assessing the discourses that frame our understanding so far of what the possibilities might be. We finish by outlining some of the options available to this particular project, and what the social and institutional constraints of utilising different mediums are.

### **Medium Theory and power relations**

An aspect of health communication that seems to be glossed over in most discussions is that mediums can both generate and reflect social power relations. In the hype and fear that surrounds the use of 'social media' in health communication there is little reflection upon the ways in which using a new medium for communication may disrupt conventional power relations between health professionals and their clients. Medium theory is a theory which considers issues of power that surround different communication systems. This can be at the macro level, where the broad sweep of history is considered through the lens of dominant mediums – classically these analyses consider the shift from oral culture to print to electronic and the ways in which the introduction of a new medium ultimately affected the dominant institutional power arrangements in societies. For instance, the advent of the printing press, in European cultures at least, with its capacity to mass produce texts and disseminate them widely, and the concomitant rise of literacy among a broader population than the priestly classes, ultimately led to the undermining of the power of the church and facilitated the rise of scientific knowledge. Obviously there are very nuanced accounts and studies of these shifts (see Eisenstein, 1979; Innis, 1951; McLuhan, Marshall 1962; McLuhan, Marshall 1964a, 1964b; Meyrowitz, 1994; Ong, 2002), and there is not the space within this article to cover them in depth, but they point to the ways in which the introduction of a new form or medium of communication can disrupt settled and institutionalised power relations.

Medium theory also considers questions of the influence of mediums at the micro-level. We can make observations about the ways in which the affordances of the new communications technologies may be disrupting some solid twentieth-century conventions and institutional practices, and consider the ways in which this can be pertinent to health communication practices.

Meyrowitz suggests medium theorists ask questions such as "...whether the communication is bi-directional or uni-directional, how quickly messages can be disseminated, whether learning to encode and decode the medium is difficult or simple, how many people can attend to the message at the same moment, and so forth" (Meyrowitz, 1994: 50). Further orientations are around questions of time and space (Innis, 1951). Does a medium enable rapid dissemination or slow, to how many people, across what distances? Does the medium enable long-lasting or ephemeral messages? Who has access to the communication and can they respond? Are messages received simultaneously with many other people, or asynchronously? Can people respond to everyone else who received a message or only to the sender, or not at all? We can see how books and television and networked digital media generate different answers to some of these questions.

Beyond the descriptiveness of the initial answers to these questions, what medium theory then seeks to do is analyse the kinds of power relations that are reflected through the different systems of communications. Bordewijk and van Kaam (2003) attempted to trace this through developing a matrix that examined the locus of control in interactions in a variety of media systems.

Their first category, allocution, is typically a one-to-many system where the central agent controls both the information content and the time and reach of dissemination. Television broadcasts are typical of this mode. Receivers have little chance to either choose content, represent themselves, or enter into dialogue with the generators of programs or with other recipients of the programs. The second mode, consultation, also sees the control of content rest with a central authority. Consumers, however, can choose when and sometimes where they engage with the predefined content. Thus, consulting books and other written materials like newspapers falls into this category. These first two modes, where there is tight control of the content and where expertise lies with the generators of the content (and hence also where much power resides) are typical of many health promotion strategies. The third mode, registration, is where the control still lies with a central authority, but the (predefined) content is harvested by that authority from the consumer. This is an important mode that is seen in many internet media which monitor and capture information from consumers and then datamine it (Spurgeon, 2010: 6). While consumers are interacting with the central authority in ways not possible in the previous two modes,

they are not necessarily choosing, or in control of, the 'topic' or content. We can also see this as typical of many interactions between health professionals and clients, where clients are asked specific questions about themselves. They give the information, but along predetermined lines of inquiry generated by the health professionals. The final mode suggested by Bordewijk and van Kaam is the one-to-one mode of conversation, typified by the telephone. In this mode the control of topic and timing is distributed between the users of the system. It is obviously dialogic and this has the effect of allowing the possibility of a spread of power in the communication.

With the advent of the internet, theorists and commentators have suggested that there are multi-modal possibilities including all of the above but adding the many-to-many mode of mass conversation and 'intercreativity' (where participants create content in a collaborative partnership). In this participatory mode the control is again distributed and the consequent power to determine content, timing and spatial distribution are all more decentralised. The salience of this in a health communication context should be obvious. Typically health communication proceeds in either consultative or allocutionary modes of interaction. The health communication professionals are concerned to transmit information on a one-to-many basis where the content is tightly controlled. Clients or patients are often given pamphlets that provide information. They may consult a pamphlet when they choose, but this is not a dialogic process, and the feedback loop in this system is minimal or non-existent. Can digital networked social media, which more resemble mass conversation than allocution or consultation, be the silver bullet many in health communications are searching for? It is possible some of these mediums threaten to disrupt the authority, control and power relations of the current institutional practices. As such, the reluctance of health professionals to engage with new mediums may represent a lost opportunity (and one quickly taken up by commercial providers of sometimes dubious provenance).

In considering the practices of health communication we must consider both the form, or medium, chosen, and the types of power and control typically enabled through that form. We can consider the likely effectiveness of a strategy in light of the goals of the communication. If the goal is to continue to provide information in a unidirectional manner, maintaining the authority of the source and not seeking to

engage in a feedback loop, then there are many ways in which the networked digital environments of the internet and mobile phones offer particular channels for this. Written texts can be provided on static websites, podcasts can be made, and YouTube videos can be developed and offered without a comments function. The provision of information through this multiplication of channels may engage clients differently from a pamphlet and yet maintain the power relations and authority of the health professional. It is a strategy that caters to differing literacies of clients and may increase the accessibility of information. The media richness made available through the expansion or extension from print materials to audiovisual offers up one potential avenue for more effective information delivery.

However, the digital-networked and social media offer many other forms. These modes may tap into the one-to-one conversational mode, the multi-directional mass conversational modes and the registration modes, with a variety of implications and possibilities for disruption. A discussion board where clients can post freely, a YouTube video with the comments turned on, and a blog with the comments turned on are a few examples of a communication system where control is distributed across both health professionals and clients, in terms of content and in relation to timing and space. What we see here may be more akin to a one-to-one conversation or a group discussion, and yet there are significant differences. The mode of registration may also be in play here and become, for many, a source of risk. Where a face-to-face or telephone conversation between a health professional and client is ephemeral, the mediums mostly instantiated in social media are not. The dialogue may be captured and stored, archived, data-mined or searched. This raises a number of issues. Once information is stored and searchable it is also possible to decontextualise it. Segments of longer conversations or discussions may be found through a search algorithm that ignores the context of the information. Privacy concerns loom large for many health professionals and clients alike. Health professionals also fear loss of control over the information, which they want to be accurate. There is also concern about their liability in the event that information they gave in a particular context is used out of context.

These are certainly risks that are valid and need attention. Many of them may be addressed through technological means. But there is something else at play in these new possibilities for interaction. In any interaction between health professionals and

clients there are institutional power relations which traditionally accord the health professional most of the power. Similarly the information pamphlet and the YouTube video and podcast, while using new media platforms, retain control over content and the authority to speak. A bit like the traditional lecture mode in educational settings, this is a transmission model that treats knowledge as content to be delivered. The effectiveness of this mode of delivery in education is questionable. Most pedagogical theory these days would lean more towards the constructivist model of acknowledging that all students come to a learning situation with a body of knowledge and expertise already in place. Facilitating learning by doing, learning through exploration and dialogue with others (social learning) and working with a student's existing knowledge and expertise are all seen to be more effective ways for achieving learning outcomes.

Social media may offer great opportunities for aligning health communication with these more effective models for learning and teaching, but this implies a major shift in the mechanisms of control. If we are to understand the settings in which it will become possible to use more dialogic media for effective health communication we need to consider the expertise that a client brings to any medical situation. It would require a willingness to work with what clients already know – about their own bodies and health – and to facilitate change through dialogue and exploration rather than information transmission. Bi-directional and multi-directional communication through mediated environments that offer multiple modes of access in time and space (synchronous, asynchronous, closed, local communities, open global communities, open searchable data retained over time, or secure, private data with restricted access, and so on), obviously distribute control and, to some extent, authority and power. However, these may be far more effective tools for engaging with and changing clients' knowledge and behaviour around health issues.

Implementing such programs would require more than the resources needed to produce a pamphlet, or even a YouTube video. The ongoing maintenance, engagement and attention of the health professionals needed implies far greater resourcing. Commitment to such a program is not technological, it is a social and political one, subject to all the politics of power seen in other areas of decision making about the allocation of resources. Historically it is rare for those in power to decide to reallocate resources in such a way as to diminish their own authority and

power. The disruptions of social media and the kinds of relationships they may generate between participants may do exactly this. Commentary about networked digital media in other fields has dubbed this the 'crisis of expertise', and the health profession would not be alone in confronting such a challenge, nor would it be alone in resisting it.

## **Literature Review**

In March 2013 we conducted a literature review designed to identify common narratives surrounding the use of Web 2.0 technologies for health promotion and communication. In particular, we explored if the tenets of medium theory were represented in the literature; namely, by focusing on whether or not authors examined how Web 2.0 mediums might re-shape existing power relationships between health professionals and patients and/or contribute to the generation of new power dynamics. The aim of our review was not to assess the methodological quality of articles or to produce an exhaustive overview of the field. Rather, we aimed to gain an understanding of the extent to which the characteristics of different mediums, and the social relations enabled by them, are considered in health promotion theory and practice. In the following section we explore some of the common concerns of researchers who have examined how Web 2.0 technologies can be used to improve health communication. We identified two broad discourses in the literature found about the potential for Web 2.0 technologies to generate and shape power relationships between health professionals and patients; firstly as a risk and secondly as an opportunity.

### **Risks and Opportunities: Web 2.0 as Threat or Silver Bullet**

In their review of how developments in the field of e-health may influence the relationship between health professionals and patients, Dedding et. al (2011) found that while 'e-health is thought to have diverse and potentially contradictory effects on the patient-professional relationship in healthcare' most of the literature tends to focus 'on the extremes: the possibility to disturb or to enhance' (Dedding et al. 2011: 52). Similarly, our analysis of the health communication literature found that the effects of Web 2.0 technologies on the health professional/patient relationship were frequently cast in terms of risks and opportunities. This is a trend that is not necessarily unique to Web 2.0 mediums, with new technological advancements from

email to electronic health records being met by health practitioners with 'both celebration and apprehension' (Boucher, 2010: 142). Boucher states that technological developments are shifting knowledge, power and decision-making abilities from health professionals towards patients. He notes that these shifts are often negatively perceived; in particular, citing fears about the reliability of the health information that is available online. Our literature review found that the accuracy of online health information was a common concern. In their content analysis of YouTube videos relating to burn first aid, Butler et al. (2012) and the HPV vaccine (Briones et al., 2012) concluded that the educational content and quality of information available on this platform was unsatisfactory.

These studies suggest that the participatory, accessible and interactive nature of Web 2.0 technologies may pose risks as users are exposed to inaccurate health messages that may lead to self-diagnosis, mismanagement of health conditions, or failure to take preventative health measures, which can all contribute to poor health outcomes. From this perspective, Web 2.0 technologies are viewed as decentralising or destabilising the role that health professionals have typically played in health information provision, as health messages are increasingly exchanged 'without the involvement of traditional gatekeepers such as health professionals and organizations' (Witteaman and Zikmund-Fisher, 2012: 3735). It is unsurprising that the reliability of information shared through mediums such as Facebook and Twitter was cited by attending paediatric physicians as a barrier that would need to be overcome if they were to use social media for asthma management in adolescents (Martinasek et al., 2011: 217). Martinasek et al's and Kata's (2012: 3779) studies both note that the use of Web 2.0 for collaboration has many benefits, including patient empowerment and supportive communities, but it has drawbacks as well. These perspectives illustrate how new technologies can change the dynamics of relationships between patients and health professionals and, importantly, that these transformations are understood as having both negative and positive implications. Thus, while many of the above authors were cautious about the potential impacts of these mediums on the authority of health professionals, others were enthusiastic about the prospects that they may afford for innovative and effective health promotion.

For example, Boucher (2010: 143) goes on to argue that, rather than 'fearing that patients will find misinformation on the Internet', health professionals should 'be thankful that patients are searching to find information to proactively take care of their health and guide them to the best possible resources'. While this quote still centres the health professional as the curator and disseminator of health knowledge, it recognises the positive benefits that may stem from increased patient access to information. Bernhardt et al. (2009: 9) suggest that Web 2.0 applications are 'empowering consumers to shift away from expert-based advice through vertical, top-down transmission of information through traditional channels ... today's consumers are turning to their peers offering experience-based advice in "pull" or peer-to-peer horizontal flow of information between users of these new channels'. Our review found that peer-to-peer support was an important component of Web 2.0 for healthcare (Rains and Keating, 2011; West et al., 2011). As Lee and Hawkins (2010) discuss, the Internet is used by patients to gratify both their unmet needs for medical information *and* emotional support. Mediums like YouTube and Facebook are forums where people with the same illness can connect and share their stories. In their content analysis of user comments posted on YouTube videos about irritable bowel syndrome and ostomies, Frohlich and Zmyslinski-Seelig (2012) found that 90% of the comments could be classified as providing social support.

Likewise, Greene et al. (2010: 291) demonstrate that Facebook groups can play an important role in facilitating interpersonal and community support between diabetes sufferers and their significant others. Contrary to the fears outlined above regarding misinformation, they found very little evidence that dangerous or inaccurate information was supported by these groups. However, they did ascertain that these groups were used by advertisers to market their products and services and to gather data. Distinguishing these promotional posts from actual user experiences was often difficult. Thus, Greene et al. conclude that social networking offers: 'the promise of a community to support and educate others with similar conditions as well as the perils of an unregulated environment supporting substantial promotional and data-gathering activities' (ibid).

The final risk/opportunity that we identified in the literature was the ability of health promoters and communicators to utilise these new mediums to address old problems in new ways. Korda and Itani (2013: 15) note that social media interventions “require careful application and may not always achieve their desired outcomes”. Simply transferring existing health messages to new mediums will not automatically result in benefits. We need to be careful that we do not confuse the potential reach of these new technologies (i.e. their high access rates) with their ability to be effectively harnessed for health promotion. For example, Fleisher et al. (2012, 48) found that only one in four participants logged into the website used for their research. They state that: “[t]hese findings of considerable Web underuse are surprising...Easy access to the highly interactive, multimedia driven Web has created a perception that if we build inviting websites the public will come”. This ‘surprise’ at the lack of user engagement with their online materials is reflective of a discourse throughout many of the articles, that the online world is somehow inherently ‘engaging’ and ‘interactive’ – often terms that are not well defined. Little consideration is given to how this is so, what makes a site engaging, why people like it, if they will use it, what their specific information needs might be, and so on.

Their research illustrates that we have much to learn regarding how new communication mediums are actually used for health and by whom (Fleisher et al., 2012: 50). While current research suggests that social media can be utilised to achieve behaviour change and improved health outcomes, further studies are needed to evaluate the effectiveness of different social media forms as health promotion tools (c.f. Thackeray et al., 2008; Ancker et al., 2009; Adams, 2010; Fisher and Clayton, 2011; Royne and Levy, 2011). Therefore, we need to carefully consider if current health promotion methodologies can work online. We cannot simply supplant existing health promotion practices onto new mediums (Atkinson et al., 2011). Medium theory encourages us to pay attention to the subtleties of different mediums and the needs of various stake holders: “the goal here should be to understand the needs and realities of providers, health care systems, patients and caregivers and then identify and develop appropriate Web 2.0 tools that match the new applications with the correct user populations...” (Gibbons et al., 2011: 87). This is a goal that the Health e-Baby project aims to address.

## **The Health E-Baby project**

The research project the authors are involved with seeks to firstly identify the information practices and needs of pregnant women serviced by the Lyell McEwin Hospital and secondly to design an intervention to improve health communication with these women, ultimately with the goal of improving health outcomes for both the mothers and the babies. The first phase of the project has mapped the current antenatal education strategies used by the hospital and examined the information needs and media preferences of pregnant women. We have also explored how health professionals who care for pregnant women in this context view the use of networked and online social media.

The current health promotion strategies from the antenatal clinics consist mostly of face-to-face communication with midwives and other health professionals and the provision of written material (i.e. informational brochures). In terms of medium and communication strategy, we can see the conversational mode and the unidirectional consultation mode are employed in these main forms of communication. The hospital website currently has no information about either the obstetric services provided at the hospital or information relating to pregnancy and health. A phone number for the department of Obstetrics and Gynaecology is the only information available on the site and this is difficult to locate.

Our research has established that a large percentage of pregnant women have access to the internet, and many use mobile phones as their primary mode of internet engagement. Although the levels of access and the kinds of uses are not uniform, use levels were high enough to make it worthwhile considering communication through these channels as a supplementary/complementary form of communication that enhances existing hospital communication strategies. In deciding whether this will be exclusionary or create a further 'digital divide' it seems clear that if existing channels are maintained, the integration of further communication mediums could reduce some of the gaps that exist through low literacy, and deliver material more accessibly, for those who respond better to information in video, pictures and diagrams, or through listening (eg., podcasts).

Of course, content delivery is not the whole of what is possible. As discussed in the opening section of this paper, the new networked digital mediums can also offer interactive participatory opportunities. As found in the literature review, implementing strategies that involve multi-directional communication through venues such as bulletin boards and email lists, Facebook groups, blogs and YouTube channels with comment functions, and any other venue that allows for discussion, community building and peer support, is perceived as highly risky as well as potentially beneficial. The risks are about loss of control of the information and the concern that incorrect information will be shared under the auspices of the institution. The intersections, too, of the cultural institutions of law and health, are evident. Risk and liability are measured in monetary terms as well as health terms, meaning that the concern is not just for the health outcomes for patients and clients.

If we frame health promotion as a pedagogical project – one where we hope that people learn more about their health and how to generate better health outcomes for themselves and others – then we need to think about the pedagogical models being employed to try and effect that learning. As discussed earlier the unidirectional transmission model of communication is no longer seen as optimal. It assumes a passive and receptive audience of learners who have no prior knowledge or expertise of their own. The power relations involved are also stark. Constructivist learning models, on the other hand, acknowledge that students always come to a learning situation with prior knowledge and expertise and try to work with that existing knowledge and build on the students' understanding. It is also a model that can encompass group and social learning – where people also learn from their peers and through engagement with each other.

In the health communication context, we can liken the delivery of pamphlets, the YouTube video and the static website to the unidirectional transmission model of learning that is not particularly effective. Providing information does not ensure that information is integrated and acted upon. If we seriously want behavioural change that results in better health outcomes, then we have to start considering models of learning that include interaction, social scaffolding, peer support, acknowledgement of existing expertise and other constructivist concepts. The one-to-one interactions of midwives with clients is often a good start for this process. Face-to-face encounters with health practitioners are a dialogic and interactive source of information, and

valuable for interrogating specific areas important to either the client or the professional.

However, these encounters are not the only source of information that clients use, and are often limited in number due to constraints on resources within the health system. If clients already turn to the internet for information, and the cohort of this research project do, then there is room for developing communication tools that use the social, constructivist kind of scaffolding that leads to better learning outcomes. While many of our participants use commercial websites for pregnancy-related information, some reported feeling overwhelmed by the amount of information available and the frequently contradictory nature of this information. Furthermore, they were often uncertain about the reliability of this information. Conversely, women placed a high level of trust in health information provided by the hospital. We argue that health professionals and organisations need to capitalise on this trust by providing health information in formats that address their clients' content preferences.

#### UP TO HERE

The first step in our project plan for intervention will attempt to cater to the basic information needs that are not currently being met through the hospital website. This will be a combination of delivering existing information and curating useful and reliable information from elsewhere. This will result in a diversification of the forms of information – into video, image and diagrams as well as the currently available written text. This material will be made compatible for mobile phone interfaces – one of the flaws in many sites we have visited being their incompatibility with mobile platforms. If low SES cohorts access the internet through their smart phones, then any website not compatible with these new platforms is excluding a portion of their target audience and feeding the digital divide so often spoken of. But this first step is the most basic step.

The following phases will involve the integration of more interactive engagements in an effort to harness the positive aspects of social learning through many-to-many mediums. However this entails overcoming a number of institutional barriers and working with a cultural shift in the profession that entails some disruption to the current power relations. Thus while we state above that the pedagogical focus is for

the clients, actually the learning goals also need to be focused on the staff involved in implementing new strategies. Many of the health professionals we interviewed in the course of the research have been resistant to the idea of social media being part of their communication strategies. This reluctance comes from a number of sources, ranging from the perception of heightened risk associated with loss of control of the information; concern about client privacy issues; low staff literacy with social media; to objections about the extra workload it will likely create in an already overburdened workforce.

There is no point in embarking on a new strategy employing a more social medium if the people responsible for implementing and running it are resistant and have legitimate concerns as well as skill issues. Thus the learning starts with the staff, and the identified risks need to be managed in a way that doesn't make the participation process become so onerous for the clients that they don't join in. It is quite a balancing act. Discussion boards and Facebook groups could be made less risky through moderation and facilitation, but these things require resourcing – much more resourcing than delivering static information in the one-to-many model of the pamphlet or static website. There are also institutional barriers within the hospital system, that may take some major restructuring of systems, social, technical and legal.

Ultimately, achieving an effective health communication strategy that is scalable, systemic and useful to clients and staff, requires both resources and institutional buy-in that seem currently unlikely, given the strained circumstances of health funding. The argument needs to be made that the positive health outcomes derived from the behavioural change that comes from creating and facilitating effective learning environments will mean economic investment now is paid for in savings to the health system in the long term.

## **Conclusion**

Medium theory is useful for framing the social and power relations of a communication act using particular mediums. As we endeavour to improve communication in the health field, medium theory enables us to move beyond the technological determinism that often accompanies a change of strategies. It enables us to look at the technological affordances and constraints of a medium in its social

and cultural contexts. In this particular research project, where the ultimate aim is to improve the health of mothers and babies, we have been able to identify the social structures that need to be worked with alongside any implementation of technological 'fixes'. This includes helping health professionals learn about using social media, overcoming some of the very legitimate concerns about reliability of information and protection of privacy, identifying and using existing patient or client expertise through peer support networks, and facilitating better understanding of healthy practices among clients as well as supporting them to act on those understandings. All of these aspects are social, and many of them require a shifting understanding of the location of expertise, and a renegotiation of current power relations between health professionals and clients.

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