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Health on the Internet: implications for health promotion

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Abstract

The aim of this article is to discuss the implications of health on the Internet for health promotion, focusing in particular on the concept of empowerment. Empowering aspects of health on the Internet include the enabling of advanced information and knowledge retrieval, anonymity and convenience in accessing information, creation of social contacts and support independent of time and space, and challenging the expert–lay actor relationship. The disempowering aspects of health on the Internet are that it involves a shift towards the expert control and evaluation of sources of health information, that it widens the gap between 'information-rich' and 'information-poor' users, thus reproducing existing social divisions, and that the increase in medicalization and healthism results in increased anxiety and poorer health. The health promotive and empowering strategies presented in this article are directed at strengthening people's ability to evaluate different information sources in relation to their own interests and needs rather than in relation to scientific and/or professional standards.

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Introduction

Interest in the Internet as a tool for health-related information and communication has grown immensely in recent years. Today, not only is there an extensive amount of medical information and interactive services available through the Internet, but also an increasing number of health sites focusing on 'healthy lifestyle' issues. Such general health sites appeal to the public in general, providing a wide range of information on different health topics, 'Ask an Expert' services, tests, discussion boards, etc.

Only recently has the debate started on the implications of the expanding universe of 'health on the Internet' (or e-health) for health care and health promotion. Most commentators seem to adopt a positive, or even Utopian, perspective, focusing on the future possibilities that information technology can offer in the fields of health care and health promotion [e.g. (Bernhardt and Hubley, 2001; Eysenbach and Jadad, 2001)]. Some have called the impact of information technology a paradigm shift [e.g. (Kahn, 1997; Chin, 2000)], others refer to a revolution (Fox and Rainie, 2000; Bernhardt and Hubley, 2001). However, warnings have also been raised, concerning primarily the quality of the information available on the Internet. These concerns have led to concerted efforts to assess the quality of e-health information and to create quality standards for Internet health sites [e.g. (Ambre *et al*., 1997; Eysenbach *et al*., 2000; Risk and Dzenowagis, 2001; Eysenbach, 2002)].

Still, the main argument is that the Internet is a valuable tool for health care and health promotion, and that the initial problems that have been

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encountered will, in due course, be both properly addressed and resolved. From such a perspective, health on the Internet is fundamentally a good thing. However, this is a contestable assumption; health on the Internet is a fact but, rather than simply and unproblematically taking its value in a health promotion context for granted, its implications need to be thoroughly analyzed.

The purpose of this article is to discuss the implications of the phenomenon 'health on the Internet' for health promotion. This discussion is based on a review of research in the area of health on the Internet (e-health). A number of recurring themes in the debate on health on the Internet will be presented and analyzed in relation to the concept of empowerment.

In an earlier review of the accessing of health information on the Internet, Cline and Haynes (Cline and Haynes, 2001) found both benefits and pitfalls associated with health advice on the Internet. They found that widespread access to health information, interactivity, information tailoring and anonymity where all obvious benefits. Conversely, inequity in access, navigational challenges, poor quality of online health information and poorly developed navigational skills among consumers were found to detract from the value of the Internet as a health promotional tool. The authors also stress the lack of empirical research on health information and the Internet. Several of Cline and Haynes' findings will be replicated here; however, while their review has, primarily, a communication perspective, the analysis presented here has its focus on health promotion and empowerment.

Concepts and definitions

Empowerment

Empowerment is often said to be a 'key principle' of health promotion [e.g. (Tones, 1996; Rootman *et al*., 2001) and it is also a frequently used concept in the debate on health on the Internet [e.g. (Chin, 2000; Eysenbach, 2001; Metcalf *et al*., 2001)]. The basis of the common definition of empowerment within health promotion is derived from the Ottawa Charter [(WHO 1986), p. 1] and replicates the idea of a process that enables people to 'increase control over, and to improve, their health'.

It could, therefore, be argued that one importa common denominator is the ambition to strengthen the knowledge and skills of the lay actor. This could, in turn, be said to entail an increase in power for the lay actor. This argument rests on the idea that the fundamental concern for health promotion is to change the power structures in society that impose limits on the ability of individuals and groups to control and manage their lives in accordance with the needs and interests that they themselves have defined. This, in turn, entails an analysis of the concept of power.

On a general level, power can be viewed from both zero-sum and non-zero-sum perspectives [(Laverack, 2004), p. 34]. In the former case, an increase of one actor's power entails a decrease in the power of another actor. In the later case, an increase in the power of one actor does not necessarily result in the decrease of another actor's power. The former understanding of power, as a matter of conflict, produces questions concerning domination and emancipation, while a non-zero-sum understanding of power foregrounds questions about how people can gain a degree of control over their lives. As Laverack (Laverack, 2004) argues, both a zero-sum and a non-zero-sum understanding of power may be relevant for the practice of health promotion. The task of health promotion may thus be both to 'increase feelings of value and sense of mastery' [(Laverack, 2004), p. 37] among individuals and groups, and to challenge hegemonic power relationships that shut down 'critical thinking, public debate and the possibility of change' [(Laverack, 2004), p. 38].

In this article, the main question is whether or n the Internet can function as an empowering resource for knowledge acquisition, communication and support. The focus is therefore on empowerment both as a means of strengthening the individual's sense of mastery and control, and as a means for community building and a possible challenge to hegemonic power structures.

Internet

The focus of this article is directed at the Internet as an interactive medium for information and communication. The main feature of the Internet is said to be its accessibility and interactivity (Jensen, 1997). The Internet makes a universe of information and knowledge easily accessible for anyone with a computer and an Internet connection. It also makes possible interactivity in the shape of direct feedback and real-time communication, and, not the least, contact between people independent of time and space.

An important aspect of the Internet is its potential to empower by putting more control in the hands of the user, as compared with other media [e.g. (Walch, 1999)]. It is argued that the Internet could challenge traditional one-way information delivery by the development of interactive environments 'with the potential for independent action and discovery' [(Manning, 1997), p. 73]. It is, however, important to remember that the Internet is in itself not a neutral technology to be used on equal terms by everybody; it is highly commercialized and tends, as other media do, to mediate prevailing ideas and values in society (Pitts, 2004).

Accessibility, anonymity and support

Perhaps the most important aspect of health on the Internet is the advanced information and knowledge seeking it enables [(Street and Rimal, 1997), p. 3]. Most people do in fact find the health information they are looking for when they search the Internet; according to a study by the Pew Internet and American Life Project, roughly 80% of the health seekers find the information they need [(Fox and Rainie, 2002), p. 23].

Frequent users of health sites on the Internet are patients (especially those who have long-term illnesses) who are searching for reliable information about their specific diseases [(Poensgen and Larsson, 2001), p. 11]. The likelihood of patients seeking information and advice on the Internet increases with the specificity and severity of their diagnosis (Houston and Allison, 2002). It seems that patients and/or their care-givers tend to seek specific answers to specific questions—they want to know as much as possible about the disease and the diagnosis.

The information and knowledge that is accessed can have a significant impact on the way that a patient comes to terms with a disease, possibly increasing control over the illness and in coping with everyday life following the onset of the disease. This can be a matter of finding better ways of handling concrete problems and/or a way towards the patient becoming more involved in engaging with his/her illness. In a study conducted by the Boston Consulting Group (von Knoop *et al.*, 2003), the influence of the Internet, on a general level, is regarded as increasing steadily for both patients and doctors alike. In particular, the advent of the Internet as a source of health care advice has enhanced the opportunities for patients to be more actively engaged in their own treatment and care. It also seems that patients using the Internet for health information are more engaged and active in coping with their problems and in communication with their doctor, compared to those who do not seek advice from the Internet (Lovich *et al.*, 2001).

If patients become better informed and knowledgeable as a result of accessing information from health sites and health communities, they may be better prepared and likely to ask more relevant and critical questions when they meet their doctors. This also implies that they will not always take their doctor's opinion for granted. Health on the Internet might, in the long term, affect the doctor–patient relationship, moving power and initiative from the former to the latter. This is a Utopian idea often presented and discussed in the debate on health on the Internet [e.g. (Chin, 2000); (Kahn, 1997), p. 191; (Rice, 2001), p. 19]. Whether this will be borne out by practice or not remains to be seen. However, there is a possibility that the use of the Internet as a source of health information will challenge the traditional doctor–patient relationships and, as a possible extension of this, the expert–lay actor relationships on a more general level. The other side of this is a strengthening of the position of the patient, and the public

in general, in relation to experts and public institutions.

Another aspect of the Internet as a source of health information is the possibility of looking for information and answers to questions in an individual way and at each individual's own pace [(Fox and Rainie, 2000), p. 10; (Metcalf *et al*., 2001)]. Each individual can take the time needed to figure out what questions to ask and how to ask them. In a face-to-face situation with a doctor or health consultant, many people feel uneasy and experience stress, often forgetting to ask all the questions they had planned to ask. Another important factor is the anonymity of the Internet—you can ask questions to an online doctor or health consultant without him/her ever getting to see you or know who you are [(Fox and Rainie, 2000), p. 10]. An additional aspect of health on the Internet is related to convenience—people can search, find and review information independent of time and space (Rimal and Flora, 1997).

The Internet can also make it easier for people to make contacts with others. This could, again, be especially valuable for people with a specific diagnosis and/or disease, but also for people in need of support in relation to other health issues. There is no doubt that there is great potential for health communities on the Internet to work as online support or self-help groups (Brennan and Fink, 1997; Preece and Ghozati, 2001; Nettleton *et al*., 2002). The Internet might thus give a new dimension to people's lives in that it 'gives an opportunity to meet other people and to establish social networks' [(Nettleton *et al*., 2002), p. 182]. This, of course, also implies opportunities for knowledge sharing and community building (Walch, 1999).

Another aspect of online communities is that they have the possibility to function as arenas for mobilization and collective action for disempowered groups in society (Mele, 2000). The need for a computer and Internet access in order to take part in an online community might, however, restrict the possibilities for certain disempowered groups to take part in online communication. As Mele [(Mele, 2000), p. 304] points out, such a political project also requires vast investments in time, dedication and will in order to overcome the type of obstacles that are likely to be encountered.

Quality, credibility and trust

The debate on health on the Internet has, so far, been strongly focused on the question of the quality and credibility of the information given on different health sites [e.g. (Ambre *et al*., 1997; Risk and Dzenowagis, 2001; Eysenbach, 2002; Eysenbach *et al*., 2000). In this debate, quality assessment and quality grading is seen as an empowering endeavor, strengthening the online health consumer's ability to find authoritative and reliable information. When it comes to questions within the domain of clinical medicine, it is no doubt important for an information seeker to be confident in the knowledge that the respondent is a qualified medical doctor, and that the advice given is reliable and correct.

However, given the focus on empowerment in this article, the introduction of quality controls and the setting of quality standards for general health sites are problematic issues; the implication is clearly that the power of judgment is solely in the hands of the expert. Medical science has a tendency to colonize the whole health domain, leaving little room for alternatives or for the lay actor to explore different ways to achieve health and well-being other than those recommended from a medical point of view (Ernst, 2002).

Using scientifically based quality criteria, many health sites prove to have significant shortcomings; as Katz and Rice [(Katz and Rice, 2001), p. 426] have pointed out, there is 'a lot of everything' on the Internet when it comes to health. Any quality assessment of health information on the Internet is likely to be fraught with difficulty. For instance, a recent study of experts' ratings of health information on the Internet displayed a low level of consensus between the different experts (Craigie *et al*., 2002).

An important factor influencing people's willingness to look for health information on the Internet is the trust, or lack of it, that they experience in relation to different information

providers (Kemper, 2001). This is, in turn, conditioned, to a not inconsiderable extent, by concerns about privacy and confidentiality, and the credibility of the information found. The quality of Internet health information is, of course, closely linked to the trust that people place in it. However, quality (according to scientific standards) and trust are by no means identical issues. More often than not the discussion focuses on quality assessment and quality grading rather than the difficult question of how to define 'good-quality' health information. The distinction between good and bad health information, and between serious health actors and the advice of quacks, is often taken for granted, but this is not necessarily the case from a lay perspective. The legitimacy of knowledge claims in the field of health is a complex issue, and it is important to realize that any distinction between 'healthy' and 'unhealthy' therapies and programmes is intrinsically problematic (Vankevich, 2002).

In health promotion, lay knowledge and lay perspectives have, or should have, an important value. Health is said not only to be a matter of the absence of disease, but also a matter of well-being—thus implying a subjective dimension and a reference to the 'everyday experience of people' [(Raeburn and Rootman, 1998), p. 16]. It is therefore desirable that the individual's views and experiences can find a means of expression in matters concerning personal health. A truly health promotive strategy ought, according to Lupton [(Lupton, 1995), p. 155], to 'recognize that health-maintaining practices do not stand alone or above other practices of everyday life'.

The digital divide

A general problem with the Internet as a resource for social development is the so-called digital divide. The well-educated and well-off have access to and use the Internet to a much greater extent than those who are less well educated and who are less well off. This can be accounted for by the fact that better-educated groups in society have online access to a far greater extent than those who are less well educated (Loader, 1998). However, it also applies to health on the Internet—education levels are a determining factor for the use of the Internet for health purposes (Andreassen *et al*., 2002). Another factor is income; higher-income groups tend to use the Internet for health purposes more often than lower-income groups (Kalichman *et al*., 2003).

Most likely this also applies to patients looking for specific types of information, as discussed above. The fact is that the likelihood is much greater that information-rich users looking for yet more information in a qualified and systematic way will be the predominant users of health sites, as opposed to those who have only limited information and who struggle to cope with cyberspace [(Fox and Rainie, 2002), p. 11].

For professionals involved in general health interventions, the recurring problem of reaching those most in need of support seems to be the same when it comes to Internet-supported health information and communication [(Schneider *et al*., 2001), pp. 174–175]. The digital divide and the general user characteristics of people visiting health sites on the Internet suggest that there is little reason to believe that Internet health initiatives would have any significant impact on this problem. Moreover, apart from the problem of access, there is also reason to believe that different groups in society have different interests and needs when it comes to health issues, as well as different capacities for searching for, accessing and evaluating information, i.e. different levels of health literacy [(Baur *et al*., 2001), p. 375].

Medicalization and healthism

While the Internet is a valuable source of health information and communication, it is also a possible source of medicalization and healthism. The concepts of medicalization and healthism highlight the process whereby areas of everyday life are, ever increasingly, defined as problematic in relation to health and therefore fall under the jurisdiction of professional health expertise [(O'Brien, 1995),

p. 196]. The concept of healthism is today frequently used in the criticism of health promotion strategies which have a narrow focus on the individual's responsibility for his/her own health [(Lupton, 1995), p. 70]. Medicalization and healthism are, in this context, understood as processes whereby experts, whether they be doctors, health promoters or some other 'lifestyle expert', define different areas of the lay person's everyday life as problematic and suggest remedial solutions that involve individual behavioral change in order to promote health.

Recent developments towards a holistic approach to health run the risk of strengthening the healthism in society (Fitzpatrick, 2001). An ever-increasing number of aspects of our everyday reality have become health topics, and, as such, possible areas of control and improvement. This has been debated at some length [e.g. (Armstrong, 1993; Lupton, 1995; Fitzpatrick, 2001).

There is good reason to believe that health on the Internet, at least to some extent, promotes healthism. Health sites on the Internet have an abundance of general health information, including, amongst other things, information on specific health topics, 'read more' functions, advice for staying healthy, information about health risks and dangers, interactive tests, and online doctors.

In Sweden the marketing of online 'weight-watching' programs by the most popular tabloid papers is a conspicuous development in this area (e.g. the 'weight club' at www.aftonbladet.se and the 'weight coach' at www.expressen.se). The tabloids carry extensive advertising of their own specific programs as well as regularly featuring articles on the 'success stories' of people who have managed to loose weight using the program that the paper has initiated. In a survey of 35 Swedish health websites, the National Board of Health and Welfare (National Board of Health and Welfare, 2002) found that some kind of 'Ask the Doctor' service featured on 24 of the sites. Other prevalent forms of interactivity were discussion forums, chat rooms, notice boards, quizzes and self-testing instruments. Advertising in terms of positive descriptions of specific products appeared on 23 sites, while 11 sites featured sales of health products. A brief review of eight prominent Swedish health sites (www.apoteket.se, www.halsolinjen.nu, www.halsomalet.se, www.hjart-lungfonden.se, www.infomedica.se, www.netdoktor.se, www.primavi.se and www.suntliv.nu) reveals that the most common topics featured on these sites are the promotion of physical activity, good eating habits and weight control, smoking, and drug and alcohol use. However, there are also other topics, such as stress, sex, sleeping habits, mental health, natural/alternative medicine, parenting, humor and beauty. Taken together, the contents of these sites form a finely meshed net encompassing the vast majority of health concerns that individuals might have.

Common to all of the sites reviewed is a primary focus on health risks and healthy habits, as well as on actions, therapies and available products that can enhance the individual's health. All health sites try to be authoritative and attempt to legitimize their advice by means of references made to experts and expert knowledge. However, a recent study of the information presented on Internet health sites has revealed that this type of referencing tends to be rather superficial (Lamminen *et al*., 2002). It seems justified to ask whether this excessive focus on health promotes health or whether it is in fact more likely to promote anxiety.

Discussion

In some respects, the Internet, as an unlimited and uncontrollable source of information, is a good thing. It provides opportunities for people to search for and to access valuable—as well as useless—information in a convenient and individually tailored way. It also provides opportunities for people to make contacts and communicate with others in matters of importance for their health and well-being. In this respect, health on the Internet is empowering—it puts more control and power in the hands of lay people. It may also function as a medium for shared experiences and knowledge between users, as well as for recognition and emotional support for people in need of support and guidance.

Health on the Internet also has the potential to challenge institutionalized and professional interests. On the other hand, efforts are being made to put the power back in the hands of the experts; this is done by attempts to control the sources of health information on the Internet by means of evaluation and quality grading. This whole issue raises questions of paramount importance for health promotion, such as what kind of knowledge and knowledge interests should health promotion give prominence to? Another is: how does expert versus lay knowledge relate to each other from a health promotional point of view?

Health on the Internet also opens up avenues for the exploitation of people's health anxieties and risk consciousness. However, it is important to realize that such forms of exploitation may be derived from different sources and it makes little difference whether it is a 'lose weight without effort' site or a certified doctor-online site that makes the individual start to think or worry about his/her health. It is, rather, the total sum of all health topics, questions, tests and sources of advice readily available at each and every health site that is entered that is the problem. There is a multitude of powerful vested interests in people's health worries and it might be persuasively argued that a relevant task for health promotion would be to emancipate people from the power of such interests.

The Internet, as such, also tends to widen the gap between the well off and the less well off in society, thus limiting the value of health on the Internet for health promotion strategies that focus on equity in health. Health on the Internet might function as an additional resource for people already in possession of knowledge and information skills, but less so for people with few such resources. The disempowering aspects of health on the Internet, from a health promotion perspective, are thus problematic and challenging.

In order to capitalize on the positive aspects of health on the Internet, a health promotive and empowering strategy should be directed towards strengthening the ability of individuals to evaluate different information sources in relation to their own interests and needs, and not in relation to scientific and/or professional standards. This requires a strategy aimed at developing in the individual, a critical consciousness in relation to different sources of information and an ability to select from competing sources of knowledge, rather than a strategy aimed at safeguarding specific forms of expert knowledge. The primary focus of such a strategy would be to develop knowledge and skills in media criticism. What is needed are educational initiatives aimed at providing skills in navigating, evaluating and applying information and knowledge in the information overflow of late-modern society [(Kickbush, 2001), p. 294].

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References

Ambre, J., Guard, R., Perveiler, F.M., Renner, J. and Rippen, H. (1997) *Criteria for Assessing the Quality of Health Information on the Internet.* Health Summit Working Group, McLean, VA.

Andreassen, H., Sandaune, A.-G., Gammon, D. and Hjortdahl, P. (2002) Use of Internet health services in Norway. *Tidskrift for Norsk Laegeforening*, **17**, 1640–1644.

Armstrong, D. (1993) Public health spaces and the fabrication of identity. *Sociology*, **27**, 393–410.

Baur, C., Deering, M.J. and Hsu, L. (2001) ehealth: federal issues and approaches. In Rice, R.E. and Katz, J.E. (eds), *The Internet and Health Communication. Experiences and Expectations.* Sage, Thousand Oaks, CA, pp. 355–383.

Bernhardt, J.M. and Hubley, J. (2001) Health education and the Internet: the beginning of a revolution. *Health Education Research*, **16**, 643–645.

Brennan, P.F. and Fink, S.V. (1997) Health promotion, social support, and computer networks. In Street, R.L., Gold, W.R. and Manning, T. (eds), *Health Promotion and Interactive Technology: Theoretical Applications and Future Directions.* Erlbaum, Mahwah, NJ, pp. 157–169.

Chin, R. (2000) The Internet: another facet to the paradigm shift in healthcare. *Singapore Medical Journal*, **41**, 426–429.

Cline, R.J.W. and Haynes, K.M. (2001) Consumer health information seeking on the Internet: the state of the art, *Health Education Research*, **16**, 671–692.

Craigie, M., Loader, B., Burrows, R. and Muncer, S. (2002) Reliability of health information in the internet: an examination of experts' ratings. *Journal of Medical Internet Research*, **4**, e2.

Ernst, W. (2002) Plural medicine, tradition and modernity. Historical and contemporary perspectives: views from below and from above. In Ernst, W. (ed.), *Plural Medicine, Tradition and Modernity, 1800-2000*. Routledge, London.

Eysenbach, G. (2001) What is e-health? *Journal of Medical Internet Research*, **3**, e20.

Eysenbach, G. (2002) Infodemiology: the epidemiology of (mis)information. *The American Journal of Medicine*, **113**, 763–765.

Eysenbach, G. and Jadad, A.-R. (2001) Evidence-based patient choice and consumer health informatics in the Internet age. *Journal of Medical Internet Research*, **3**, e19.

Eysenbach, G., Diepgen, T., Lampe, K. and Brickley, D. (2000) EU-project medCERTAIN: certification and rating of trustworthy and assessed health information on the net. *Studies in Health Technology and Informatics*, **77**, 279–283.

Fitzpatrick, M. (2001) *The Tyranny of Health: Doctors and the Regulation of Lifestyles*. Routledge, London.

Fox, S. and Rainie, L. (2000) *The Online Health Care Revolution: How the Web helps Americans take Better Care of Themselves*. Pew Internet and American Life Project, Washington, DC.

Houston, T.-K. and Allison, J.J. (2002) Users of Internet health information: differences by health status. *Journal of Medical Internet Research*, **4**(2).

Jensen, J.F. (1998) 'Interactivity' tracking a new concept in media and communication studies. *Nordicom Review*, **19**, 185–204.

Kahn, G. (1997) Digital interactive media and the health care balance of power. In Street, R.L., Gold, W.R. and Manning, T. (eds), *Health Promotion and Interactive Technology: Theoretical Applications and Future Directions*. Erlbaum, Mahwah, NJ, pp. 187–208.

Kalichman, S.C., Benotsch, E.G., Weinhardt, L., Austin, J., Luke, W. and Cherry, C. (2003) Health-related internet use, coping, social support, and health indicators in people living with HIV/AIDS: preliminary results from a community survey. *Health Psychology*, **22**, 111–116.

Katz, J.E. and Rice, R.E. (2001) Concluding thoughts. In Rice, R.E. and Katz, J.E. (eds), *The Internet and Health Communication. Experiences and Expectations*. Sage, Thousand Oaks, CA, pp. 417–429.

Kemper, D.-W. (2001) Trust on the health Internet. *Managed Care Quarterly*, **9**, 9–18.

Kickbush, I. (2001) Health literacy: addressing the health and education divide. *Health Promotion International*, **16**, 289–297.

Lamminen, H., Niiranen, S., Niemi, K., Mattila, H. and Kalli, S. (2002) Health related services on the internet. *Medical Informatics and the Internet in Medicine*, **27**, 13–20.

Laverack, G. (2004) *Health Promotion Practice. Power and Empowerment*. Sage, London.

Loader, B.D. (1998) *Cyberspace Divide: Equality, Agency and Policy in the Information Society*. Routledge, London.

Lovich, D., Silverstein, M.B. and Lesser, R. (2001) *Vital Signs Update: The E-Health Patient Paradox*. Boston Consulting Group, Boston, MA.

Lupton, D. (1995) *The Imperative of Health: Public Health and the Regulated Body*. Sage, London.

Manning, T. (1997) Interactive environments for promoting health. In Street, R.L., Gold, W.R. and Manning, T. (eds), *Health Promotion and Interactive Technology: Theoretical Applications and Future Directions*. Erlbaum, Mahwah, NJ, pp. 67–78.

Mele, C. (2000) Cyberspace and disadvantaged communities: the Internet as a tool for collective action. In Smith, M.A. and Kollock, P. (eds), *Communities in Cyberspace*. Routledge, London, pp. 290–310.

Metcalf, M.P., Tanner, T.B. and Coulehan, M.B. (2001) Empowered decision making. Using the Internet for health care information—and beyond. *Caring*, **20**, 42–44.

National Board of Health and Welfare (2002) *Health on the Internet. A Survey of Swedish Web Sites 2002*. National Board of Health and Welfare, Stockholm.

Nettleton, S., Pleace, N., Burrows, R., Muncer, S. and Loader, B. (2002) The reality of virtual social support. In Woolgar, S. (ed.), *Virtual Society? Technology, Cyberbole, Reality*. Oxford University Press, Oxford, pp. 176–188.

O'Brien, M. (1995) Health and lifestyle: a critical mess? Notes on the dedifferentiation of health. In Bunton, R., Nettleton, S. and Burrows, R. (eds), *The Sociology of Health Promotion: Critical Analyses of Consumption, Lifestyle and Risk*. Routledge, London, pp. 191–205.

Pitts, V. (2004) Illness and Internet empowerment: writing and reading breast cancer in cyberspace. *Health*, **8**(1).

Poensgen, A. and Larsson, S. (2001) *Patients, Physicians, and the Internet: Myth, Reality, and Implications*. Boston Consulting Group, Boston, MA.

Preece, J.J. and Ghozati, K. (2001) Experiencing empathy online. In Rice, R.E. and Katz, J.E. (eds), *The Internet and Health Communication. Experiences and Expectations*. Sage, Thousand Oaks, CA, pp. 237–260.

Raeburn, J. and Rootman, I. (1998) *People-Centered Health Promotion*. Wiley, Chichester.

Rice, R.E. (2001) The Internet and health communication: a framework of experiences. In Rice, R.E. and Katz, J.E. (eds), *The Internet and Health Communication. Experiences and Expectations*. Sage, Thousand Oaks, CA, pp. 5–46.

Risk, A. and Dzenowagis, J. (2001) Review of Internet health information quality initiatives. *Journal of Medical Internet Research*, **3**, e28.

Rootman, I., Goodstadt, M., Potvin, L. and Springett, J. (2001) A framework for health promotion evaluation. In Rootman, I. (ed.), *Evaluation in Health Promotion: Principles and Perspectives*. WHO, Regional Office for Europe, Copenhagen.

Schneider, S.J., Frechtling, J., Edgar, T., Crawley, B. and Goldstein, E. (2001) Evaluating a federal health-related web site: a multimethod perspective on medicare.gov. In Rice, R.E. and Katz, J.E. (eds), *The Internet and Health Communication. Experiences and Expectations*. Sage, Thousand Oaks, CA, pp. 167–185.

Street, R.L. and Rimal, R.N. (1997) Health promotion and interactive technology: a conceptual foundation. In Street, R.L., Gold, W.R. and Manning, T. (eds), *Health Promotion*

and Interactive Technology: Theoretical Applications and Future Directions. Erlbaum, Mahwah, NJ, pp. 1–18.
Street, R.L., Gold, W.R. and Manning, T. (1997) Preface. In Street, R.L., Gold, W.R. and Manning, T. (eds), *Health Promotion and Interactive Technology: Theoretical Applications and Future Directions*. Erlbaum, Mahwah, NJ, pp. xi–xvii.
Tones, K. (1996) The anatomy and ideology of health promotion: empowerment in context. In Scriven, A. and Orme, J. (eds), *Health Promotion: Professional Perspectives*. Macmillan, Basingstoke, pp. 9–21.
Vankevich, N. (2002) Limiting pluralism: medical scientism, quackery, and the internet. In Ernst, W. (ed.), *Plural Medicine, Tradition and Modernity, 1800–2000*. Routledge, London.
von Knoop, C., Lovich, D., Silverstein, M.B. and Tutty, M. (2003) *Vital Signs: E-Health in the United States*. Boston Consulting Group, Boston, MA.
Walch, J. (1999) *In the Net: An Internet Guide for Activists*. Zed Books, London.
WHO (1986) *The Ottawa Charter for Health Promotion*. WHO, Geneva.

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