EDITORIAL

Health education and the Internet: the beginning of a revolution

At the time of this writing, it is estimated that nearly 500 million people throughout the world use the Internet and growth among new users shows no sign of slowing (Telcordia, 2001). One of the main reasons people report using the Internet is to obtain information. Health information is one of most researched topics online. (Harris Interactive, 2001). People now have access to more health information than was ever previously available with the number of existing health-related web sites estimated to far exceed 20 000 (Eng, 2001).

There is wide consensus that the Internet is revolutionizing the way that many people access, share and communicate information on any every conceivable topic to people and places throughout the world. It is not surprising, therefore, that the Internet is starting to also revolutionize health education research and practice. After all, as health education and health promotion researchers and professionals, we are largely in the business of compiling, facilitating, developing, packaging and delivering health information to and between individuals and communities. The Internet offers a plethora of communication channels—including the World Wide Web (WWW), E-mail, news-groups, chat rooms, instant messaging, file exchange services and many more to come—that have the potential to improve the effectiveness, efficiency, and reach of almost all aspects of health education.

Although the impact of the Internet on health education is still a work in progress, the Editors and Editorial Board of *Health Education Research* decided that a Special Issue devoted to the early research in this area would provide both a milestone for the research conducted to date, and a stepping off point to help facilitate future research and innovations. Many health education researchers and practitioners already have embraced the Internet as an area of inquiry and application, as evidenced by the high number of submissions we received for consideration in this theme issue.

Overall, 48 manuscripts were submitted from authors in more than 10 countries. Of these submissions, 20 were peer reviewed by guest reviewers specifically identified for this theme issue and eight papers were selected for publication. The articles that appear were selected because they represent innovative and diverse applications of the Internet to health education research and practice. The Guest Editors wish to thank all of the authors who submitted their work, and especially thank the guest reviewers for their time and critical contributions to the Special Issue.

In the first article, Oenema and colleagues report on one of the first studies to apply the technique of tailoring to the WWW. There have been numerous studies to date, including many published in *Health Education Research*, that have demonstrated the efficacy of computer-tailored messages for health promotion compared to non-tailored messages. Because of its reach and its ability to rapidly present interactive, customizable and multi-media information, the web can offer many advantages for tailoring over interventions that deliver messages via paper, laptop computer or kiosk. In this randomized controlled trial, significant differences were found at post-test on personal nutrition awareness and intentions to change fat, fruit and vegetable intake between those who received the tailored web-based message and those who received general nutrition information. The authors conclude that web-based tailoring has great potential and that future research should focus on longer-term behavioral outcomes.

In the second article, Bull and colleagues address an important practical concern related to developing Internet-based health education interventions: people's willingness to participate in these types of interventions. Although the Internet is a relatively discreet vehicle for presenting information on sensitive topics to vulnerable or at-risk populations, a number of studies have found that many users remain concerned about their anonymity, privacy, and security when online (Eng, 2001). This study reports the results from an online survey of more than 4000 people about their willingness to receive STD or HIV prevention information from various

Internet channels. The authors found that levels of acceptance for messages differed by channels and by groups, and that the Internet may be a useful approach for reaching certain at-risk groups, either alone or as an adjunct to information presented through other non-Internet channels.

In the third article, Cline and Haynes provide a useful and thorough review of the literature related to online health-information seeking. Also known as *consumer health informatics*, this activity is one of the most common activities of Internet users and is directly related to health education and promotion. Taking a 'communication perspective', the authors explore the great potential and the significant challenges related to providing and receiving online health information. They also address the challenging task of evaluating the quality of this information. The authors conclude that future research should be cognizant of health communication concepts including the inherently transactional quality of Internet use.

In the fourth article, White and Dorman explore the process and practice of receiving social support via the Internet. While the Internet was still in its infancy, support groups and communities of shared interests and experiences were among the first interpersonal uses of the Internet to proliferate and take hold. This article describes development of these support networks, compares online social support to traditional support groups and provides a thoughtful discussion about the health education implications of this approach.

In the fifth article, Reeves also discovered the importance of online social networks. She conducted a descriptive, qualitative study using in-depth, semi-structured, face-to-face interviews with people living with HIV/AIDS to investigate how they use the Internet in coping with their illness. The author found that participants actively used the Internet for four primary reasons: researching information, making social connections, advocating and escaping. These reasons are explored and discussed in the context of possible avenues for health education interventions.

In the sixth article, Stout and colleagues explore the concept of interactivity and examine its use within health-related web sites. One of the greatest strengths of the web as a channel for presenting health information is its ability to be interactive. Interactive web pages allow users to actively engage the information by asking questions, following links, and experiencing a real sense and degree of control over the information exchange process. The article describes the process of conducting a content analysis of 30 websites. This research methodology can be a useful tool for future Internet-based health education research. The authors found that many health-related web sites do use interactive tools, albeit at low levels, and they discuss how the presence of these tools can impact learning.

In the seventh article, Steckler and colleagues report on the feasibility and effects of using the web for a distance learning course for public health professionals. Web-based distance learning already has become commonplace in the areas of higher education and professional preparation, yet there have been few articles published to date that have explored this approach for public health or health education courses. The article describes a web-based course on qualitative research and evaluation methods, and discusses the methods by which it was evaluated. Although the authors found no significant changes in knowledge or beliefs about qualitative methods, they did find an increase in participant's self-efficacy and skill levels. The authors conclude that a great deal of additional research is needed to evaluate the effects of web-based instruction for health education and to explore its effects relative to traditional educational approaches.

In the eighth and final article, Atkinson and Gold demonstrate another way that the Internet can be a valuable tool for health education professionals. Their article describes the process and results of implementing a three-round web-based Delphi study with important stakeholders and key informants on the topic of prevention research, practice and policy. This innovative Internet application is but one example of how the Internet will become an even more valuable tool for the work of health education and promotion

professionals. The authors conclude that the Internet can foster and ensure collaboration and participation in the design and use of a knowledge management system on prevention.

Whether the Internet is being used as channel for delivering or exchanging information, bringing people together, or instructing students, it is clear from these articles that the Internet can have a significant impact on the way that health education research and practice are conducted. The first generation of Internet-based studies that follow represents the first small steps of this revolution. The many studies and projects currently underway will expand and surpass the studies chronicled here in their outcomes, effects and innovations.

We caution, however, that despite the promise and potential, many significant obstacles remain to be overcome including, but not limited to, the vast digital divide that exists between those with access to Internet technologies and those who are unlikely to ever have such access. In addition, it must be acknowledged and remembered that the Internet and other technology-based approaches are simply tools to be used and applied, when appropriate, within the context of our theories, models, principles and values. Nevertheless, we hope this Special Issue on health education and

the Internet demonstrates many of the early accomplishments of this area of research and practice, and that it paves the way for more breakthroughs and innovations.

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