D. Gammon

Synopsis

Norwegian Centre for Telemedicine
University Hospital of North-Norway
Tromsø, Norway

Education and Consumer Informatics – patient involvement and health outcomes

In differing ways, each of the articles in this section show how technology can facilitate patients' involvement in their health care in ways that can potentially improve health outcomes. While the first article addresses the education needs of medical doctors, the remaining three articles describe supportive tools for patients in their efforts to cope with various health issues.

In her title, Bearman asks a provocative, philosophical question; "Is virtual the same as real?." She approaches this question by examining medical students' experiences of a virtual patient. Using qualitative methods, students' experiences with a virtual patient's case are examined. While Bearman doesn't provide us with a *direct* answer to the question raised in the title, the study supports the assumptions of those using virtual patients to teach communication skills; that these tools elicit real-life emotions that are relevant to real-life patient-physician encounters.

In line with the phenomenological tradition upon which Bearman's study builds, context issues are discussed. She argues that although removed from the context of real-life patient-physician encounters, students' bring their educational context and life experiences into the virtual patient encounter - just as they do with real life patients. As students stepped into the role of the general practitioner, they made assumptions about doctors and patients based on their preconceptions and implicit belief systems. As follows, Bearman offers the radical - but justifiable - suggestion that students assume the role of the patient, thus being forced to contend with a (virtual) doctor's agenda. The real-life emotions that this virtual encounter can elicit, may provide powerful and useful insights for future physicians.

Chien-Tsai Li et al (2004) provided hospital patients with tailored information about their current medications. Based on links between the patients own medication profile and information about the drugs, subjects could learn about how to use the drugs, their side effects and potential effects of combining certain drugs. Subjects reported significant improvements in their knowledge and understanding of these issues following use. The authors suggest that future developments include integration of tailored medication information with health maintenance management systems. They further argue that by providing patients with tailored information about their medications, patients can improve both the safety and effectiveness of their treatment. Clearly, studies that can confirm these types of outcomes should be an important priority for future studies.

Hofmann et al's (2003) study shows the feasibility of an interactive computer-based cognitive training program for patients with Alzheimer disease (AD). The program provides exercise tasks reflecting aspects of the patients' everyday life. Digital photographs of a shopping route, including social competence tasks, were integrated into a presentation-software program that displayed the pictures on a screen. Following the 4 week training session, patients with AD showed significant reductions in mistakes while performing the tasks. Patients also reported satisfaction with system use. The study does not address the crucial question of whether the AD patients are able to transfer acquired skills into real life situations. Nevertheless, it provides important insights into how technology and

learning conditions can be designed in order to enhance this patient group's participation in society.

Palermo, Valenzuela & Stork (2004) provided PDA-based electronic diaries (e-diaries) to children suffering from pain. They report from a randomized control trail, comparing paper-based dairies (p-dairies) with e-dairies. The e-diary proved superior relative to compliancy, accuracy and acceptability. Technical and feasibility issues were focused upon in this article. However, the study is a good example of how e-tools can enable the externalization of patients' subjective experiences, particularly for groups who may be less articulate in describing how they feel, both at the immediate moment and over time. This type of data may thus serve as a valuable tool for improving the quality of patient-provider communication and thus also provider's ability to better tailor their help to patients needs.

These articles exemplify the newly emerging field of Consumer Health Informatics. As technology becomes more accessible and user-friendly - also for those also with severe cognitive impairments – these technologies can ultimately facilitate greater patient participation, not only in their own health care, but also system design. Technologies that enable monitoring how users respond while interacting with these systems can provide important insights into user needs and preferences. These methods can in turn supplement other approaches (e.g. questionnaires or interviews) in ways that can significantly improve our understanding of how to design systems that ultimately improve health and quality of life outcomes.

References

1. Bearman M. Is virtual the same as real? Medical students' experiences of a virtual patient. Academic Medicine. 2004;78: 538-45.
2. Liu C-T, Yeh Y-T, Chiang I-J, Chen H-Y, Lee T-I, Chiu W-T. Development and evaluation of an integrated pharmaceutical education system. International Journal of Medical Informatics. 2004; 73: 383-389.
3. Hofman M, Rosler A, Schwarz W, Muller-Spahn F, Krauchi K, Hock C, Seifritz E. Interactive computer-training as a therapeutic tool in Alzheimer's Disease. Comprehensive Psychiatry. 2003; 44: 213-219.
4. Palermo T M, Valenzuela D, Stork P P. A randomized trial of electronic versus paper pain diaries in children: impact on compliance, accuracy, and acceptability. Pain. 2004; 107:213-19.

Address of the author:
Deede Gammon
Head of eHealth Consumer Program
Norwegian Centre for Telemedicine
University Hospital of North-Norway
9038 Tromsø, Norway
E-Mail: Deede.Gammon@telemed.no