Abstract
Internet use in healthcare has grown quickly, but nursing has not explored its use in ambulatory settings. We developed an innovative internet-based coaching intervention conducted by nurses, aimed at improving patient communication with clinicians about 3 chronic conditions: pain, depression and impaired mobility. The intervention utilized a secure patient portal to deliver coaching and other information. The internet-based coaching was well received by patients to help in preparing for upcoming primary care visits.

Background
The prevalence of chronic diseases has risen in the United States, which means that more patients must daily manage their own health problems. Patients who are involved in their own care and motivated to manage chronic conditions have greater satisfaction with symptom control.1 The advent of internet-based patient portals has provided new opportunities to support patients and promote self management skills. The nurse's role in electronic communication with patients has rarely been explored. Here we describe an intervention to improve patient-doctor communication through a unique strategy combining use of an internet-based patient portal and a nurse coach.

Methods
Patients of consented primary care physicians (PCP) were invited to join a study of a health coaching intervention to improve patient communication regarding chronic conditions. Those with scheduled office visits were recruited and screened through a secure patient portal for the presence of chronic pain, depression or impaired mobility. Of the eligible participants, 121 were randomized to the intervention, and 120 to usual care control. The intervention was designed using principles of self management and shared decision-making. Each intervention participant was sent an automated e-mail about her/his condition(s), with links to a personalized website that included visit planning worksheets and information about the screened condition(s). Patients were invited to correspond through the portal with a nurse coach who would guide them in strategies to enhance communication with their PCP in their upcoming office visit.

Results
Description of Participants: Intervention patients were aged 22 to 82 years with 60% aged 50 or older; 59% were women, 91% were white, and 69% had attended 4 or more years of college. Chronic pain was the most commonly screened condition (88%), followed by impaired mobility (21%) and depression (11%); 17% of patients had more than 1 condition.
Use of Intervention Components: Most participants primarily used the automated and prepared elements of the intervention such as the website and the worksheets rather than emailing the e-coach. Half of patients (n=60) opened the intervention website before their PCP visit. Of these, 71% (n=43) opened the online worksheets a total of 107 times in the days prior to their visits. Of the 121 patients in the intervention group, 42 (35%) sent a total of 62 messages to the nurse coach prior to their appointments. Most patients who sent an email to the coach (37 out of 42) expressed interest in further coaching in preparation for their PCP visit.

Conclusion
The research showed that many patients were interested in engaging in the internet-based intervention designed to improve patient-doctor communication, as well as viewing the variety of online patient education materials that were offered. Internet-based coaching of primary care patients was well received and warrants further study. Ongoing research will determine whether internet-based models of nursing care offer an effective means for promoting collaborative management of chronic conditions in primary care.

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References