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Original Research

Perceived Barriers to and Facilitators of Patient-to-Provider E-Mail in the Management of Diabetes Care

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ABSTRACT

Objectives: 1) to describe current utilization of e-mail in the clinical care of patients with diabetes; and 2) to identify barriers to and facilitators of the adoption of e-mail in diabetes care.
Methods: Participants included diabetes care providers, including 9 physicians and 7 allied health professionals (AHPs). Participation involved, first, completing a self-administered survey to evaluate the use of e-mail within diabetes-related clinical practice. Second, focus group discussions were conducted with diabetes care providers using semistructured interviews to collect data about their perceptions of using e-mail to exchange information with patients diagnosed with diabetes. Patients' perspectives on the use of e-communication with their care providers was also proposed on the basis of the discussions.
Results: Significant differences were found between physicians and AHPs concerning questions that were related to the use of e-mail and the amount of time spent using e-mail to communicate to patients. There was perceived function and value to the use of e-mail among AHPs, while few physicians used e-mail routinely and were uncertain about its potential in improving care. Five themes, including barriers, benefits, risks, safeguards and compensation, were developed from the focus group interviews.
Conclusions: Currently, most of the physicians surveyed do not e-mail patients directly; however, AHPs frequently use e-mail in diabetes care and find this tool valuable. Variation in practices regarding clinical e-mail across care disciplines suggest that appropriate policy with guidelines for e-mail and e-communication within the health care system may improve uptake of clinical e-mail and perhaps, by extension, improve efficiency and access in diabetes care.

Mots clés :
obstacles
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RÉSUMÉ

Objectifs : 1) décrire l'utilisation actuelle du courriel dans les soins cliniques des patients souffrant de diabète; 2) déterminer les obstacles et les facilitateurs de l'adoption du courriel dans les soins aux diabétiques.
Méthodes : Parmi les participants, on comptait les prestataires de soins aux diabétiques, dont 9 médecins et 7 professionnels de la santé associés (PSA). Premièrement, la participation impliquait de remplir une enquête autoadministrée pour évaluer l'utilisation du courriel au sein de la pratique clinique liée au diabète. Deuxièmement, les échanges du groupe de discussion étaient réalisés avec les prestataires de soins aux diabétiques au moyen d'entrevues semi-structurées pour recueillir les données sur leurs perceptions de l'utilisation du courriel pour échanger des informations avec les patients ayant un diagnostic de diabète. Les points de vue des patients sur l'utilisation de la communication électronique avec leurs prestataires de soins étaient également proposés sur la base des discussions.

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Résultats : Des différences significatives étaient observées entre les médecins et les PSA en ce qui concerne les questions liées à l'utilisation du courriel et au temps passé à utiliser le courriel pour communiquer avec les patients. Les PSA percevaient le fonctionnement et la valeur de l'utilisation du courriel, alors que peu de médecins utilisaient habituellement le courriel et demeuraient incertains quant à son potentiel d'amélioration des soins. Cinq thèmes, dont les obstacles, les avantages, les risques, les précautions et la rémunération étaient élaborés à partir des entrevues du groupe de discussion.

Conclusions : Actuellement, la plupart des médecins interrogés n'envoient pas directement de courriels aux patients. Cependant, les PSA utilisent fréquemment le courriel dans le cadre des soins aux diabétiques et trouvent cet outil très utile. Les écarts entre les pratiques concernant le courriel clinique dans l'ensemble des disciplines de soins suggèrent que des politiques appropriées assorties de lignes directrices sur l'usage du courriel et de la communication électronique au sein du système de soins de santé peut favoriser l'adoption du courriel clinique et peut-être, par surcroît, améliorer l'efficacité et l'accès des soins aux diabétiques.

Introduction

Systems developed to promote high-quality diabetes self-management and healthcare have the potential to reduce the significant individual and societal burdens of the complications of diabetes. Canadian Diabetes Association Clinical Practice Guidelines currently recommend that diabetes care should be organized around the Chronic Care Model (1). This recommendation is rooted in a large evidence base that has demonstrated that health systems that include diverse healthcare teams, case management and electronic health information exchange (among other interventions) promote better glycemic, blood pressure and cardiovascular risk-factor control (2) compared to more conventional models of care (2–4). The use of electronic communication technologies has revolutionized the delivery of many commercial services, but health service delivery remains largely unaffected by this e-revolution, despite there being robust evidence to suggest that e-communications (including e-mail) in diabetes care may be associated with improved glycemic control by supporting frequent and timely access to care providers (3,5). The meta-analysis by Tricco et al. (2012), explicitly examined the effects associated with facilitated relay, which was defined as clinical data collected by patients and communicated to providers beyond the traditional medical records or visits. This included electronic and web-based sharing of health data collected from patients. This single component of chronic disease management was associated with significant reductions not only in levels of glycated hemoglobin (A1C) but also in levels of low-density lipoproteins and systolic blood pressures. Further, there have been a number of qualitative studies that suggest electronic communication can increase patients' engagement and satisfaction with care (6,7).

Although guidelines surrounding the use of e-mail in healthcare exist (1), few Canadian physicians use e-mail with patients as part of routine care, despite evidence of its potential to improve care quality. The proposed study served to 1) describe current utilization of e-mail by diabetes care providers (both physicians and allied health professionals [AHPs]) in the clinical care of patients with diabetes; and 2) to identify barriers to and facilitators of the adoption of e-mail by diabetes care providers.

Methods

We conducted a mixed-methods study that involved a quantitative, self-administered questionnaire and focus groups that used thematic analysis.

Participants

Potential participants were identified through the Calgary Zone Diabetes, Hypertension and Cholesterol Centre. This is a centralized diabetes care and education centre that provides care to over 2800 patients per year in Calgary. All identified diabetes care professionals were then solicited by a mass e-mail to participate in this study. We did not specify a minimum time spent in diabetes care to qualify for participation in this study, so we acknowledge that participants may have had clinical interests outside of diabetes. However, we presume that those who decided to participate chose to do so because of a significant interest in diabetes care. Data were collected from 16 diabetes care providers (9 physicians, 7 AHPs) over 5 focus groups held between June 2014 and September 2014. Participants included family physicians, endocrinologists, a psychologist and clinical nurse practitioners who were not registered diabetes educators, as well as registered nurses who were diabetes educators. No incentives were offered to the study participants. All participants provided written consent to participate in both the self-administered survey and the focus group. Ethical approval was granted (REB14-0031).

Focus group procedure

After providing written consent, participants completed a self-administered written survey. A paper-based, self-administered questionnaire was composed of closed-ended, multiple-choice questions and was adapted from a questionnaire (8) previously used to evaluate utilization of e-communication and e-health technology by American and Canadian physicians. Content validity was evaluated using a pilot sample of 5 physicians who are members of our target group. Domains of inquiry included: 1) physician/AHP demographics; 2) description of clinical practice; 3) description of diabetes practice; 4) description of e-communication in clinical practice; 5) description of use of information technology in clinical practice; 6) description of personal use of e-communication; 7) determination of guidelines around e-communication in clinical practice; 8) description of attitudes toward e-communication in clinical practice and 9) identification of barriers to and facilitators of the use of e-communication in clinical practice.

Data collection from each focus group was semistructured, with open-ended questions based on the themes of perceived benefits, perceived risks, potential facilitators of, and barriers to e-mail use (Figure 1). The interview questions were used to guide discussions about the motivational (e.g. fear of increase of workload) and organizational (e.g. lack of remuneration services) barriers to the utilization of e-communication. Follow-up probing questions were also asked until participants provided no additional responses during the interview sessions. Each focus group took place in a professional office, in a treatment centre, or in a primary healthcare centre in Calgary and lasted approximately for 1 hour. The moderator read a prepared script discussing the purpose of the focus group, and another member of the research team took notes. Immediately following the focus groups, the moderator and the research assistant