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The impact of a primary care e-communication intervention on the participation of chronic disease patients who had not reached guideline suggested treatment goals

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ABSTRACT

Objective: To evaluate the efficacy of two web-based educational approaches on doctor-patient communication. The study focused on chronic disease (CD) patients in a lengthy relationship with their family physician (FP) who had not reached guideline suggested treatment goals (off-target) for their CDs.
Methods: 322 hypertensive, diabetic, or dyslipidemic patients of 18 FPs were randomised into three groups: Usual Care (UC), e-Learning (e-L) and e-Learning + Workshop (e-L + W). Interventions were based on Cegala's PACE system: Prepare, Ask questions, Check understanding, Express concerns. Communication was evaluated using the Roter Interaction Analysis System (RIAS), MEDICODE and questionnaires.
Results: Encounter length was similar across groups. RIAS showed that e-L + W group engaged in more socio-emotional talk and PACE-like utterances. MEDICODE showed that interventions increased frequency, initiative and dialogue for selected CD medication themes. Quality of communication was perceived as satisfactory at baseline and did not change.
Conclusion: Following interventions, CD patients were more activated even in well-established doctor-patient relationships.
Practice implications: PACE web-based interventions are accessible and effective at increasing CD patients' participation. They increase legitimacy to express the patient experience. FPs should present this type of training to CD patients as an integral part of their routine practice and consider referring patients to complete it.

1. Introduction

Chronic diseases (CDs) are increasingly prevalent and contribute significantly to the burden of health care costs [1]. Communication studies show that reaching a common understanding of the nature of these conditions and arriving at a mutually agreed upon treatment are associated with better patient outcomes such as recall, adherence and satisfaction [2–4]. Studies have shown improvements for outcomes, such as blood pressure and diabetes control, psychological distress reduction and improved pain control [5–8].

In chronic conditions, patients are in a position to be the main "actors" of their treatment. Lussier and Richard [9] propose that they can engage in a doctor-patient relationship where the physician's role is one of "Partnering" or "Facilitating" in the ongoing management of their diseases. This echoes the notion of *productive interactions* in Wagner's Chronic Care Model (CCM) [10–12]. However, communication studies have shown that patients continue to adopt passive roles in their consultations [13–17].

Many authors have stressed the importance of activating patients [13,18–22]. Cegala's PACE patient education intervention [23] specifically aims to improve patient participation in clinical encounters by building communication skills such as information requests and expressing health concerns. Street's patient participation conceptual model [24] suggests that mastering these skills will improve doctor-patient communication and facilitate patients' adoption of an active role in their care. A recent review of 33 patient activation RCTs [25] showed that most interventions were delivered immediately before consultations or used reminders before encounters. Previous studies with PACE

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interventions have used these techniques [23,26] including face-to-face reminders prior to consultations [27,28]. Evidence from the educational literature on learning communication skills in healthcare indicates that experiential learning, such as observation and practice opportunities with immediate descriptive and detailed feedback on these skills is useful, and that the educational small group workshop format is promising [29], yet the external validity of these strategies is questioned because of the human resources implicated in their delivery.

Web-based interventions allow for resource and cost reduction, whilst increasing user convenience [30]. Computer based interventions have been shown to be effective for behavioural health [31–34] and communication [35] outcomes. Concerns for attrition are evoked [36], yet a meta-analysis comparing web-based to non-web based interventions demonstrated greater effectiveness of the former for various health outcomes [37]. In addition, Internet literacy among seniors is a preoccupation for use of these tools. However, seniors represent the population in which use of Internet is increasing most rapidly [38,39]. For example, 63% of adults aged 55–64 used Internet, citing e-mail and health information seeking as their most frequent uses [40] and a recent study showed similar adoption rates of an internet health record in the 60–69 age group compared to all other age groups [41].

The current study chose an educational approach that builds on Cegala's PACE intervention adapted to a web-based format delivered alone or combined with a workshop as a pathway to better health outcomes. Hypertensive (HBP), type II diabetic (DM) or dyslipidemic (chol) patients who had not achieved guideline consistent treatment goals were entered in the study by participating FPs. This paper is the first and main paper reporting study results, and explores the primary objectives of the study: evaluating the impact, compared to usual care, of two educational approaches on patients' participation in a primary care medical encounter. Observed and perceived doctor-patient communication around their CD and its prescribed pharmacological treatment are reported. Secondary analyses including, but not limited to, impacts on patient recall of information, self reported adherence and CD health outcomes will be reported in subsequent papers.

2. Methods

2.1. Study design

This study was a prospective, randomised, three-arm, parallel group study in multiple centres with the unit of randomisation being the patient. This clinical trial, NCT00879736, was registered with ClinicalTrials.gov. The study protocol received ethics approval from the Institutional Review Board Services (IRB), a central IRB. All physicians and patients completed an informed consent form.

The three groups were: (1) e-Learning training (e-L); (2) combined training (e-Learning followed by a workshop (e-L + W); (3) Usual Care (UC).

2.2. Description of educational intervention

Study interventions, inspired by the PACE system, focus on the communication skills described in Table 1. They were developed and presented in two different ways:

1. e-Learning. The web-based program presented content as audio, stand-alone text, narrated text and presentations. It allowed patients to select and enter information and required 45–75 min for completion. Patients were individually instructed by the research associate (RA) on how to use the website and were provided with written instructions. Notes that patients made using the website could be saved and printed.
2. e-Learning + Worshop. The Internet approach was followed by an interactive nurse-facilitated small patient group workshop. The 90 min workshop, involving between 2 and 3 participants, allowed patients to review, discuss and practice the PACE skills presented in the website. The workshops took place in the community.

Patients who completed questionnaires, visit audio-recording, and training received a $100 gift certificate. Physicians received 225$ for each enrolled patient who completed the trial.

Table 1
Description of PACE communication skills and RIAS codes used to identify them in encounters.

PACE	Communication skills	RIAS codes
P: Prepare	Better preparing patients for their encounter and helping them organize the presentation of their problems in a succinct and focused way	
A: Ask	Formulating and asking questions that they would like the doctor to answer about their condition or treatment	Asks for opinion Asks closed/open question medical condition Asks closed/open question therapeutic regimen Asks closed/open question lifestyle/psychosocial Asks closed/open question other information Requests for services or medication
C: Check	Checking to make sure they understand what the doctor said	Paraphrases, checks for understanding Bid for repetition Asks for understanding
E: Express	Expressing any concerns they have about their health or treatment	Shows approval-direct Gives compliment-general Shows concern or worry Reassures, encourages, shows optimism Shows disapproval-direct Shows criticism-general Asks for reassurance