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Review article

E-consulting in a medical specialist setting: Medicine of the future?

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ABSTRACT

Objective: Today's technology provides new ways of consulting between patients and medical specialists in health care, such as videoconferencing and web-messaging. In this systematic review we assessed the effects of e-consulting between medical specialists and patients.
Methods: We searched MEDLINE, EMBASE, Psychlit and Cochrane Library for randomized clinical trials assessing the use of e-consulting methods (videoconferencing (VC) or web-messaging (WM)), as compared to conventional care (face-to-face (FF) or telephone consultations (TC)) in a medical specialist setting. We extracted patient-related, physician-related, cost, time and follow-up outcomes.
Results: We included 21 trials, of which 17 addressed VC compared to FF, two compared WM with FF, one VC with TC, and one WM with TC. Physicians appeared to prefer face-to-face consultations over videoconferencing. Patients appeared to be as satisfied with videoconferencing as with face-to-face contacts, but preferred videoconferencing and web-messaging over telephone consultations. Videoconferencing was more expensive regarding equipment, but saved patient-related costs in terms of time, transportation, and missed work. Variable results were found for consult time and follow-up visits.
Conclusions and practice implications: We cautiously conclude that e-consulting seems a feasible alternative to medical specialists' face-to-face follow-up or telephone appointments, but may be less suitable for initial consultations requiring physical examination.

Contents

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1. Introduction

During the last decades, information and communication technology has advanced and expanded greatly [1]. Simultaneously, healthcare has also grown more complex, requiring more and more ICT-support for diagnostic, therapeutic and data management purposes [2]. Moreover, patients, particularly in the developed countries, show an increasing longevity, multi-morbidity [3], immobility and chronic illnesses, resulting in more visits to GPs and hospitals. Specialisation of (high-volume) hospitals tend to further increase travel distances and waiting times [4–6]. This has fuelled the development of e-health facilities, aiming at time- and cost-saving ways of digital consultation between healthcare professional and patient in hospital or out-patient settings, without negatively influencing their experiences with the interaction.

Nowadays various e-consulting possibilities exist [7]. For example in videoconferencing real-time images of a conversation are sent bi-directionally, mimicking a face-to-face consult as close as possible, although precluding physical examination. Web-messaging, in the form of text messages via the Internet, with or without photographs of the patient's lesions, lacks voices and real-time images, but these messages can be sent and replied whenever convenient to patient and healthcare professional [8]. A third option is e-monitoring, transferring information on a patient's blood pressure, glucose levels or body temperature via the Internet to a remote location where a healthcare professional interprets the data.

Despite these promising features, earlier systematic literature reviews on the usefulness of telemedicine showed limited evidence on their clinical benefits and cost-effectiveness [7,9]. Existing studies mostly focus on primary care and dermatology settings and psychotherapy via e-consulting. Patients seemed to be satisfied when e-consulting was applied in some general practices [10,11], but in clinical settings e-consulting is not yet common, apart from dermatology [12]. Available evidence on e-dermatology mainly focused on triage or on the communication between the general practitioner and the medical specialist rather than the patients themselves, while being still inconclusive about its (cost-) effectiveness [12–14]. Available studies about psychotherapy via e-consulting showed no significant differences between a conventional and an e-consult [15].

In this systematic literature review we appreciated the available evidence on the effects of e-consulting between medical specialists and their patients by videoconferencing or web-messaging as compared to usual care, i.e. face-to-face or telephonic consultations, in terms of the associated satisfaction, time, costs, and follow-up.

2. Methods

This systematic review was performed and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) statement [16].

2.1. Eligibility criteria

2.1.1. Types of studies

We only included randomised clinical trials (RCTs) in which patient-healthcare professional e-consulting was compared with a standard consultation group as control. Conference abstracts were excluded.

2.1.2. Types of participants

We included all medical specialists in outpatient settings, also when parents or caregivers of children participated. All types of disorders and patients were eligible, regardless of age, gender and ethnicity. We excluded trials performed solely in a primary care setting and/or with general practitioners as main study participants.

2.1.3. Types of interventions

Eligible e-consulting interventions were (1) videoconferencing: live consultations via a video camera or webcam on the Internet or (2) web-messaging: consultations through typed messages, via e-mail or messages entered into a pro-forma. The standard consultation could either be a face-to-face consultation or a telephone consultation.

We excluded trials in which telemedicine was used for other purposes than clinical consultation, e.g. symptom monitoring, lifestyle support or websites supplying basic information. We also excluded trials in which (psycho) therapy or rehabilitation was given through telemedicine. Furthermore, we excluded trials that only involved inter-professional consultations.

2.1.4. Types of outcomes

We defined the following five types of outcomes:

patient-related outcomes associated with their experience with the consultation (e.g. patient satisfaction with convenience of care, specialist services, or communication), patients' self-management, or patients' health (e.g. quality of life or well-being).

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