

# Chapter 10

## Modelling Factors Affecting Patient–Doctor–Computer Communication in Primary Care

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### ABSTRACT

*This work presents a conceptual model aimed at explaining factors affecting the formation of effective patient-doctor-computer communication at the primary care clinic. The authors define a new construct – patient-doctor-computer communication (PDCC), aimed to replace the traditional concept of dyad patient-doctor communication (PDC). PDC has been characterized as one of the most significant factors affecting healthcare outcomes. To better understand PDCC and its antecedents, the authors integrate theories from the patient-centered care and the Information Systems domains and suggest that the characteristics of the EMR, the user (doctor) and the task determine the doctor's perception of fit between the EMR and the medical task, which in turn positively affects PDCC. The suggested conceptual model contributes to both theory and practice. On the theoretical side, it opens several new research trajectories. For practice, the model implies that there is a need for a tighter collaboration between experts from both the information systems and medicine domains in designing EMR systems that are aligned with and support the medical task at hand.*

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## **INTRODUCTION**

The goal of this paper is to develop a conceptual model that explains how the doctor's perception of fit between the Electronic Medical Record (EMR) system and the medical task affects the formation of effective patient-doctor communication (PDC) at the primary care clinic.

To this end, we first explore the role of the physician-patient relationship in patient care and highlight findings of how this relationship is affected by the introduction of the EMR into the doctor's workflow. While it may appear that the EMR provides an opportunity to improve patient-doctor communication (PDC) as part of the clinical practice (Haluza & Jungwirth, 2014), and hence medical outcomes, there is evidence that the introduction of ICT into the clinic significantly affects the physician-patient relationship (Haluza & Jungwirth, 2014; Pearce, Arnold, Phillips, Trumble, & Dwan, 2009). Surprisingly, there is scant literature suggesting how to address adverse implications of EMR use during the medical encounter on PDC (Shachak & Reis, 2009). This existing gap is particularly unsettling since communication has been characterized as one of the most powerful, encompassing, and versatile instruments available to the physician (Weiner, 2012). Furthermore, patient-centered care, which is nowadays the leading paradigm in primary care, emphasizes the need to build rapport between doctor and patient through undivided attention and communication (Assis-Hassid, Heart, Reyach, Pliskin, & Reis, 2013), yet studies imply negative effects of EMR use on PDC and patient-centered aspects (Shachak & Reis, 2009). As will be shown, the patient-centered care approach assumes that good communication can improve healthcare outcomes from better treatment adherence and fewer interactions leading to malpractice suits (Frankel et al., 2005; Lorig, 2012).

This work focuses on the effects of using the EMR system on patient-doctor communication at the primary care clinic. We explore the behavioral aspects of the EMR's introduction in the clinic as well as physical aspects such as room configuration. Regarding both aspects, we show the benefits and shortcomings of EMR use and their influence on the patient-doctor communication. Finally, we develop a model of factors affecting PDCC in the primary care clinic based on theoretical frameworks from the information systems (IS) field, and from the patient-centered concept, which hypothesize that the characteristics of the user (doctor), the EMR system and the task affect the doctor's perception of the fit between the EMR and the task at hand. Based on IS theories, it is conjectured that this perception of fit affects the doctor's ability to develop effective PDC.

The main contribution of this work is in extending the current understanding of the physician-patient relationship in a computerized environment. Moreover, we believe that the application of IS theoretical frameworks and the concepts highlighted in this work can be generalized to other Healthcare Information Systems (HIS), implying what needs to be done in order to minimize current obstacles in HIS utilization while improving the patient-doctor communication in the computerized medical environment.

## **BACKGROUND AND LITERATURE SURVEY**

The following section provides an overview of the physician-patient relationship and imperative role of communication in healthcare which have been recognized prior to the introduction of the EMR system. Namely, we discuss elements of patient-centered care, physicians' communication behavior, and characteristics of the medical task at the GP's clinic.

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