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What do physicians gain (and lose) with experience? Qualitative results from a cross-national study of diabetes

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ABSTRACT

An empirical puzzle has emerged over the last several decades of research on variation in clinical decision making involving mixed effects of physician experience. There is some evidence that physicians with greater experience may provide *poorer* quality care than their less experienced counterparts, as captured by various quality assurance measures. Physician experience is traditionally narrowly defined as years in practice or age, and there is a need for investigation into precisely what happens to physicians as they gain experience, including the reasoning and clinical skills acquired over time and the ways in which physicians consciously implement those skills into their work. In this study, we are concerned with 1) how physicians conceptualize and describe the meaning of their clinical experience, and 2) how they use their experience in clinical practice. To address these questions, we analyzed qualitative data drawn from in-depth interviews with physicians from the United States, United Kingdom, and Germany as a part of a larger factorial experiment of medical decision making for diabetes. Our results show that common measures of physician experience do not fully capture the skills physicians acquire over time or how they implement those skills in their clinical work. We found that what physicians actually gain over time is complex social, behavioral and intuitive wisdom as well as the ability to compare the present day patient against similar past patients. These active cognitive reasoning processes are essential components of a forward-looking research agenda in the area of physician experience and decision making. Guideline-based outcome measures, accompanied by underdeveloped age- and years-based definitions of experience, may prematurely conclude that more experienced physicians are providing deficient care while overlooking the ways in which they are providing more and better care than their less experienced counterparts.

Introduction

An empirical puzzle has emerged over the last several decades of research on variation in clinical decision making involving mixed effects of physician experience. There is some evidence that physicians with greater experience provide *poorer* quality care than their less experienced counterparts, as captured by various quality assurance measures (Allen, 2005; Choudhry, Fletcher, & Soumerai, 2005). For example, younger physicians have shown greater adherence to disease management guidelines (Jacques et al., 1991; Kenny, Smith, Goldschmid, Newman, & Herman, 1993) and have been found to be more likely than more experienced physicians to carry out integral components of a "comprehensive diabetic examination" (McKinlay, Gerstenberger, Marceau, Link, & Handy, 2009). In the context of the evidence-based medicine movement to improve quality by standardizing treatment, this variation in clinical decision making by physician experience is a persistent and nagging policy challenge.

Empirically, physician experience is typically measured by age or number of years in clinical practice. Theoretically, it has often been conceptualized as a subconscious psychological process leading physicians to be cognitively biased in ways that are invisible to them. While this tradition has generated a great deal of important research, we assert that in order for this work (and its associated policy agenda) to move forward from the present impasse,

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there must be further methodological and theoretical development of the underlying concept of "experience". Specifically, there is a need for investigation into precisely what happens to physicians as they gain experience, including the reasoning and clinical skills acquired with years in clinical practice and the ways physicians consciously implement those skills into their work. In a departure from traditional individualistic, psychological emphasis on clinical reasoning as a subconscious process, we focus on social, interactive, and processual aspects of experience that *can* be made explicit. We use qualitative think aloud data from a study of clinical decision making around diabetes to ask:

1) How do physicians themselves conceptualize and describe the meaning of their clinical experience?
2) How do they use their experience in clinical practice?

Our study aims to move existing literature on this topic forward in several ways by: examining physicians' explicit reasoning processes for interpreting patients' social characteristics; using a qualitative analysis, which allows for a more nuanced understanding of information physicians consider relevant to their work; providing policy relevant implications; and proposing potential explanations for mixed results observed in extant studies by showing how experienced physicians draw on a wide range of factors not fully captured by evidence-based measures of quality.

Background

The effect of increasing years of clinical experience on quality of care is an often disputed relationship, situated within an environment of tension between the vogue of patient centered care and the evidence-based medicine movement (Greenhalgh, Flynn, Long, & Tyson, 2008; May, Rapley, Moreira, Finch, & Heaven, 2006). This discord is well evidenced in a controversial report by Choudhry et al. (2005) that reviewed 59 studies of physician practice to determine the relationship between clinical experience and performance. Choudhry reported that 52% of the assessed studies demonstrated a negative association between increased experience and performance. However, letters in response to Choudhry's review provide an important context for the discussion of physician experience and quality of care; taking issue with Choudhry's definition of physician "performance", Samuels, Ropper and Szabo hold that clinical guidelines and practice standards do not epitomize quality care, and that experience brings physicians subtle skills not captured by standard evidence-based measures (Samuels & Ropper, 2005; Szabo, 2005).

Some of these "subtle skills" or cognitive processes involved in clinical decision making have been described previously (Andre, Borgquist, Foldevi, & Molstad, 2002; Farmer & Higginson, 2006; Gabbay & le May, 2004; Greenhalgh et al., 2008; Tamayo-Sarver et al., 2005). For example, the use of heuristics in clinical practice has been described in relation to "rules of thumb" or tacit knowledge (Andre et al., 2002; Greenhalgh et al., 2008). In particular, Andre et al.'s (2002) findings were inconclusive as to whether the use of tacit knowledge increased with clinical experience or not. Gabbay and le May describe the ways in which individual and collective physician experience informs tacit guidelines deemed "mindlines"; clinicians rarely use evidence directly from research or guidelines, rather they rely on "mindlines" informed by brief reading, conversations with colleagues, and their early training (Gabbay & le May, 2004, 2009). Indeed, physicians have been found to consult outcomes research only at the limits of their own experience (Tannenbaum, 1994). These studies have addressed the cognitive and heuristic processes involved in clinical practice, but our agenda of describing how physicians define and use their experience is a unique contribution to the clinical decision making literature.

The acquisition of expertise in clinical practice is commonly thought to be gained through extensive experience (Benner, 1984; Dreyfus & Dreyfus, 1980; Ericsson, 2004, 2009; Jensen, Resnik, & Haddad, 2008; Smith, Goodwin, Mort, & Pope, 2003), with experience, clinical reasoning and decision making posited as facets of expertise (Ericsson, 2004; Jensen et al., 2008). In her work on expertise in nursing, Benner found that nursing skill involved more than just technique learned from books; it included perceptions and decision making in concert with practical knowledge (Benner, 1984). Building on this notion, Jensen et al. propose that the deliberate act of clinical decision making and the critical analysis involved in clinical reasoning interact dialectically, constantly engaging and influencing each other (Jensen et al., 2008). Within this scenario, experience functions as the context in which the process of clinical reasoning/decision making takes place (Higgs & Jones, 2000).

In their well-known work on skill acquisition, Dreyfus and Dreyfus maintain that expert performance is automatic and non-reflective when situations are familiar, and that knowing *how* to do things involves both experiential and tacit knowledge (Dreyfus & Dreyfus, 1980). The notion that clinical reasoning is a subconscious or implicit process and that experience as it relates to this process is indefinable is pervasive in the cognitive psychology literature. "Non-analytic reasoning" in clinical decision making is hypothesized to take place with sufficient automaticity that it occurs without awareness (Eva, 2005; Hatala, Norman, & Brooks, 1999). If clinical decisions are made subconsciously, then physicians would constantly be at risk of being influenced by non-analytic bias (Brooks, LeBlanc, & Norman, 2000; Eva & Brooks, 2000). In this paper, we move beyond conceptualizing physician experience as a primarily cognitive experience and show how some reasoning processes previously assumed to be subconscious can in fact be made explicit through analysis of qualitative data.

Literature on expertise and experience in clinical decision making most often assumes a context of diagnostics and treatment of acute illness; however, the practical differences between a doctor's visit in which the main goal is to diagnose or treat an acute illness and a visit with the purpose of ongoing disease management provide distinct contexts for experience to play out. Lutfey and Freese (2007) have drawn attention to the ambiguities introduced by chronic illness care for the medical error paradigm, and this relationship holds true for the necessary repositioning of experience within a context of chronic disease care, especially as the epidemiologic transition advances around the world.

Methods

Qualitative data were drawn from in-depth interviews with physicians from three countries (United States, United Kingdom, and Germany). These interviews were conducted as a part of a parent study consisting of a factorial experiment of medical decision making around diabetes described in detail elsewhere (Lutfey et al., 2008). The study upon which this article is based was subject to appropriate ethical review by the New England Research Institutes Institutional Review Board (IRB). Physicians viewed a 5–7 min video vignette portraying a primary care interaction between a patient (facing the camera) and a physician (depicted by voiceover). In the video vignette, the "patient" presents with diagnosed diabetes and displays symptoms suggestive of an emerging foot neuropathy, reports "burning in the feet" that "comes and goes". The "patient" is moderately overweight, but reports following his/her treatment regimen.