



## Attitudes of Jewish and Bedouin responders toward family physicians' use of electronic medical records during the medical encounter



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### ABSTRACT

**Objective:** Culture is known to impact expectations from medical treatments. The effects of cultural differences on attitudes toward Electronic Medical Records (EMR) have not been investigated. We compared the attitudes of Jewish and Bedouin responders toward EMR's use by family physicians during the medical encounter, and examined the contribution of background variables to these attitudes.

**Methods:** 86 Jewish and 89 Bedouin visitors of patients in a regional Israeli University Medical Center responded to a self-reporting questionnaire with Hebrew and Arabic versions.

**Results:** *T*-tests and a linear regression analysis found that culture did not predict attitudes. Respondents' self-reported health status, Internet and e-mail use, and estimates of their physician's typing speed explained a total of 18.6% of the variance in attitudes ( $p < 0.001$ ).

**Conclusion:** Bedouins' attitudes toward EMR use were better than expected and similar to those of their Jewish counterparts. The most significant factor influencing respondents' attitudes was the physician's typing speed.

**Practice implications:** (1) Further studies should consider the possible impact of cultural differences between the family physician and the healthcare client on attitudes. (2) Interventions to improve physicians' skill in operating EMRs and typing will potentially have a positive impact on patients' satisfaction with physicians' EMR use.

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### 1. Introduction

The Electronic Medical Record (EMR) is a modern substitute for storage of patients' medical information and documentation of patients' encounters with the medical system. As parts of integrated health information and communication systems EMRs are viewed as having a great potential for improving quality, continuity, safety and efficiency in healthcare [1] and their use is gradually becoming commonplace. Israel is very advanced in the implementation of multifunctional, interoperable health information technology (IT) systems built around electronic medical records and all Israeli health plans currently operate integrated health IT systems [2].

By contrast, the adoption and implementation of health IT in the U.S.A. is smaller. In the U.S.A., only 13% of primary care physician respondents reported having access to at least a basic EMR system [3]; only 1.5% of U.S. hospitals have a hospital-wide electronic-

records system and an additional 7.6% have a basic system that is limited to specific hospital units [4]. However, as part of the Obama administration's health reform in 2009 billions of dollars were allocated to finance the transition to EMR use by clinicians in U.S.A. [5–7]; therefore, EMR use is expected to increase in the coming years.

In studies conducted from the providers' perspective one of the concerns about the impact of EMR's on healthcare quality is the potentially negative effect on physician–patient communication and relationships. In a study conducted in community clinics in Israel, 92% of physicians interviewed believed that EMR use during the medical encounter impaired communication with their patients [8]. Researchers suggest that one of the reasons for such findings could be that physicians gaze at the computer screen roughly 23–55% of the duration of the medical appointment [8,9]. Indeed, an inverse relationship was demonstrated between time spent viewing the screen and time devoted to inquiry about psychosocial issues, and the doctor's emotional responsiveness to the patient's statements [9]. Other studies concluded that EMR use often caused physicians to lose rapport with their patients [e.g. [10,11]]; and that EMR use was the factor that most frequently led to disruption of communication continuity [12].

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There is less data concerning patients' awareness of EMR advantages and disadvantages. Given the findings about the potential harm to patient-centered care that might in turn reduce patient satisfaction, it is important to survey healthcare clients' attitudes toward EMR's.

A few studies found that patients generally report satisfaction with EMR use by physicians [13,14]. Surveys conducted before and after implementing EMR usage showed that after the introduction of computerized systems, there was no change [14] [15], or an increase [16] in patients' satisfaction with treatment. Patients felt that the introduction of EMRs has made a positive contribution to healthcare quality [14,16]. However, these studies were conducted a decade ago. To the best of our knowledge, despite the massive deployment of EMRs in the Israeli healthcare system, there have been no studies of public attitudes. Furthermore, Israel, like the USA and other Western countries, is a multicultural society, but as far as we know, there have been no studies on how cultural differences reflect on attitudes toward EMR use.

Culture has significant effects on the adoption of information communication technologies such as computers, mobile phones and the Internet. Adoption of technologies is higher in countries where culture is characterized by a high degree of individualism, less concentration of power, service orientation, concern for the weak, and quality of life (as opposed to the characteristics such as assertiveness, focus on performance, achievement, and competitiveness) [17].

In the current study we compared attitudes of Jewish and Bedouin responders in the Negev region (the southern periphery of Israel) toward EMR use by family physicians.

The Bedouin population in the Negev constitutes roughly a quarter of the inhabitants in the Beer-Sheva district [18] and is a significant consumer of health care services in the Negev [18–21]. The socioeconomic situation of the Bedouin population is significantly worse and exposure to technology is lower compared to that of the Jewish counterpart [18].

Most Bedouins in the Negev live in a traditional patriarchal society, characterized by collectivism, traditionalism, and religiosity [22–24]. Over the past decades, this society has undergone rapid processes of modernization and transition from a nomadic to an urban society, processes accompanied at times by clashes with the traditional Bedouin heritage [18,24]. In addition, Bedouin society is undergoing processes that draw it closer to Islamic religion [24]. Consequently, there are concerns within Bedouin society that the adoption of technological measures may harm the traditional social structure, with regards to patriarchal cultural norms, direct interaction between people in society, and the status of religion and tradition [24].

Cultural differences may affect health and illness perception and expectations from medical treatments. Previous studies found that Jewish respondents were more satisfied with health care services compared to Bedouin respondents [25]. We therefore hypothesized that the unique social aspects of the Bedouin population, and their concerns regarding adoption of technology, will result in more negative attitudes regarding EMR use during the medical interaction compared with Jewish respondents.

Based on various findings in the literature we also examined several socio-demographic and background characteristics (such as respondent's age and gender) that may affect respondents' attitudes toward family physicians use of EMR's. For example, patients were less satisfied with EMRs when examined by younger physicians [26]. Female responders reacted more positively to EMR use compared to males [27]. A positive relationship was found between patients' rating of their physician's skill in computer use and attitudes toward physician's EMR use [14]. Some studies have reported an inverse association between patients' computer usage

and satisfaction with EMR's in the clinic [14,27]. However, not all studies found these relationships [28].

This study will be the first to compare the effects of cultural differences regarding EMR use by the family physician. The results may shed light on aspects that may interfere with physician-patient interaction (as perceived by the patient) and could reduce patient satisfaction with the medical encounter.

### 1.1. Study aims

1. Compare the attitudes of Jewish and Bedouin respondents regarding EMR use by the family physician during the medical encounter.
2. Examine possible cultural differences in attitudes toward specific aspects of EMR use (e.g. eye contact, physicians' skill in operating computers).
3. Examine the impact of socio-demographic factors and exposure to computers on respondents' attitudes.

### 1.2. Hypothesis

Attitudes among the Bedouin responders toward EMR use by the family physician will be more negative than those of Jewish responders from the same region.

## 2. Methods

### 2.1. Type of study

Descriptive cross-sectional.

### 2.2. Sample and procedure

The convenience sample comprised of male and female adult respondents belonging to the Jewish or Bedouin sectors in the Negev. Inclusion criteria included: Jewish or Bedouin Negev residents, literacy in Hebrew or Arabic, ages 21–65. The age range was chosen to include people who have already completed their military service and are likely to be employed. Exclusion criteria: Residents of Beer Sheva who are neither Jewish nor Bedouin; age younger than 21 or older than 65 years; physicians, health professionals and students of these occupations; inability to complete the questionnaire independently due to language or physical difficulties or any other limitation.

The questionnaire was distributed between February to June 2011 to visitors of hospitalized patients at Soroka University Medical Center (SUMC) in Beer-Sheva. The SUMC is a 1000-bed tertiary care teaching hospital and the only regional hospital for southern Israel. It serves the population of the entire Negev region with a catchment of about 600,000 inhabitants.

The prospective participants were chosen randomly among people visiting patients in any department and who were waiting or resting in public areas inside the hospital or in the lawns. This recruiting procedure was chosen for three main reasons. First it enabled us to access in a reasonable time a sufficient number of prospective Bedouin participants for this study. While many of the Bedouins nowadays live in permanent suburban localities, many still reside in tents or shacks in widespread traditional tribal settlements [29] and may be less accessible for participation in studies such as the present one. Using the setting of a hospital for recruiting participants may alleviate the problem of accessibility. Moreover, although the Bedouins comprise about a quarter of the Beer-Sheva district [18], the Bedouin population is known to highly utilize the medical services [29]. The hospitalization rates in some cases are higher among the Bedouin compared with the rates for the Jewish population. For example the majority of births

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