Chiropractic Physicians: A Functional Conceptualization of Electronic Medical Records Technology and the Society, Culture, and Personality Model in the delivery of Healthcare

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ABSTRACT

Objective: The purpose of this paper is to provide a theoretical functional framework for chiropractic physicians on how the society, culture, and personality (SCP) model is an essential tool for enhancing the understanding of socially meaningful interaction through the use of electronic medical records (EMR) technology in the healthcare institution.

Discussion: The numerous capabilities of EMR technology can provide many benefits currently unavailable with paper-based records; thus, EMR technology can create new communication opportunities to cultivate improvements through socially meaningful interaction. However, adoption does not guarantee EMR system operability or patient satisfaction with the care process. Successful migrations to EMR technology may possibly require healthcare organizations to incorporate concepts from SCP into the delivery of care. As technological advances occur, it is essential for chiropractors to remember that a patient is a distinct individual who happens to have an ailment, rather than simply the ailment. The SCP model will help to maintain the chiropractor-patient relationship amidst the changes within the social milieu.

Conclusion: There is a need for chiropractors to re-examine how factors such as social class, age, racial, ethnic, family, religious background, and technical competency influence how they utilize electronic medical records technology to deliver care. These factors can help shape treatment strategies based upon the patient's background and chiropractor's technical ability to employ EMR technology to bring about greater socially meaningful interaction. (J Chiropr Humanit 2008;15:10-18)

Key Indexing Terms: Chiropractic; Medical Records Systems, Computerized; Sociology of Medicine

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INTRODUCTION

The implementation of Electronic Medical Records (EMR) technology in the healthcare setting over the next century will continue to play a larger role in the delivery of medical care. Collaboration is an essential ingredient for innovation. It is imperative that chiropractic physicians play a very important role in the team approach to

health care. Thus, in the delivery of health care the chiropractic physician contributes enormously to the total well-being of the patient in the health care institution of any society, whether it is within a Gemeinschaft (rural) (G_1) or Gesellschaft (urban) (G_2) setting. Therefore, change in the delivery in the health care system will certainly affect the chiropractic physician the world over. It is incumbent therefore, that the chiropractic physician be aware of the functional conceptualization of EMR technology and the SCP model in the delivery of health care. EMR technology is an enterprise-wide software solution aimed at integrating fragmented components of patient care, all healthcare workers and patients are exposed to its effects. Etienne DuBarry, DC[1] makes it clear that EMR technology has the possibility to, "… permit the clinician to retrieve data instantly from a patient, with minimum reading or page hunting; cut down filing and transcription costs, improve clinical skills and protect their liability, etc."

The capacity to utilize the society, culture, and personality (SCP) model as a thematic framework to develop a greater comprehension of elements within the healthcare institution is well established in the literature.[2] The purpose of this paper is to demonstrate to chiropractic physicians how the SCP model may enhance their understanding of EMR technology in the healthcare institution, specifically through socially meaningful interaction (SMI). This effort will be carried out to effectively show the interconnectedness between the central concepts within the SCP model and EMR components. Furthermore, the issues discussed can be used to assist chiropractic physicians and other healthcare professionals, such as physicians, nurses, and dentists, as they transition from paper-based records to EMR technology.

DISCUSSION

Fundamental Core: Society-Culture-Personality Model

In order to understand the possible affect due to EMR technology adoption, it is imperative that select concepts from the SCP model be operationalized. Within a socially constructed subsystem, there are three systems, namely social, cultural, and personality, all of which are interrelated. Essentially, change in any of the three systems of the subsystem will affect the whole subsystem and ultimately every subsystem within the society. Society (S) can be defined as "an ordered and dynamic system of all the social interactions involving the members (personalities) of a total population, which can be identified as sharing a culture distinct from that shared by other populations."[3] Culture (C) refers, in a general sense, to a way of life. It is a system of conventionalized understandings of a group manifested in act and artifact. Culture is the organization of knowledge, beliefs, rules, customs, values, and meanings that direct social relationships within the social system. As the culture of the society is incorporated by the individual, a personality unique and distinctive to that person, and more or less adjusted to the demands of society, is developed. Personality (P), then, is the dynamic system of ideas, attitudes, habits, and values, which is unique to each individual. The genetic basis (N_1) of personality represents only potentiality. These potentialities, when developed under the influence of the total environment in which the individual's orientation takes place, are shaped into a personality. The "finished product" is acquired through SMI in various social processes; a learning process in a social environment (N_2) wherein the value attitude system of a culture is internalized.[4] In order to establish

SMI, an individual enters society or entré (E) and begins to develop some degree of rapport. As a result, a relationship between two or more individuals or social contact (C_1) occurs, which allows their communication to develop by individuals becoming actors and reactors to social situations. [4] Overall, these fundamental concepts of the SCP model are useful for chiropractors to understand as they utilize EMR technology in an environment influenced by social class, age, racial, ethnic, family, religious, and technical competency backgrounds of both patients and other health care professionals (Fig 1).

SMI and EMR Technology

Investigation into the influence of EMR technology on the healthcare institution ultimately requires a comprehensive understanding of how SMI is affected by the introduction of EMR technology into the delivery of care. For the healthcare system to become functional as an interlocking system, a catalyst is needed, that being SMI. Pre-requisites for SMI include social contact and communication, such as speech, writing, gesture, or any other medium of human interaction. [5] Consequently, the quality of SMI can significantly contribute to the effectiveness of medical care in terms of diagnosis, treatment, and outcome.

EMR technology encompasses the following eight core components as identified by the Institute of Medicine: electronic health information and data, results management, order management, decision support, electronic communication and connectivity, patient support, administrative processes,

Figure 1. Society, Culture, Personality [SCP]: Communication and Electronic Medical Records [EMR]
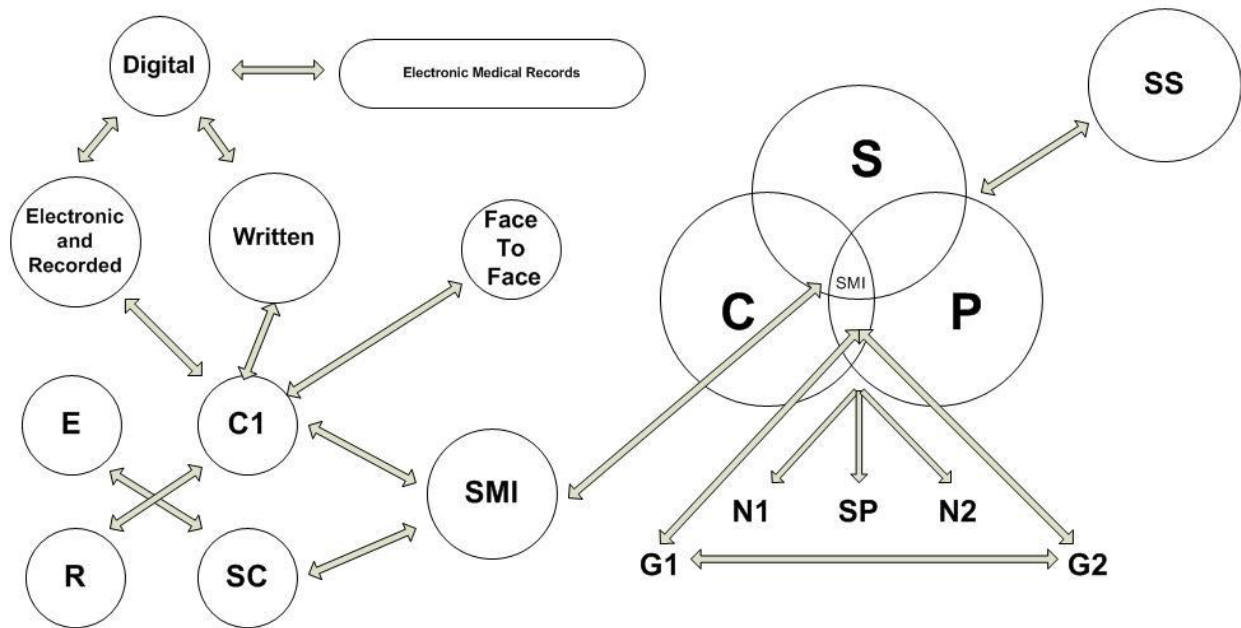
C = Culture	C1 = Communication	E = Entre'	G1 = Gemeinschaft	G2 = Geselleschaft
N1 = Nature	N2 = Nurture	P = Personality	R = Rapport	S = Society
SC = Social Contact	SMI = Social Meaningful Interaction		SP = Socialization Process	SS = Social Systems

and reporting.[6] The EMR is essentially an organizational tool, as opposed to strictly a chiropractor's tool to capture patient information at the point of care. As University of Arizona College of Medicine Dean, Edward Shortliffe asserts, "The computer-based medical record is best viewed not as an object or product, but rather a set of processes that an organization must put into place, supported by technology."[7] Most importantly, EMR technology is an information-sharing mechanism that allows members of the healthcare team to communicate seamlessly and improve decision-making as the patient moves through the healthcare system. Furthermore, because EMR technology is an enterprise-wide application that affects communication across all segments of the healthcare system, greater opportunity for SMI between the patient and the healthcare team will be possible.
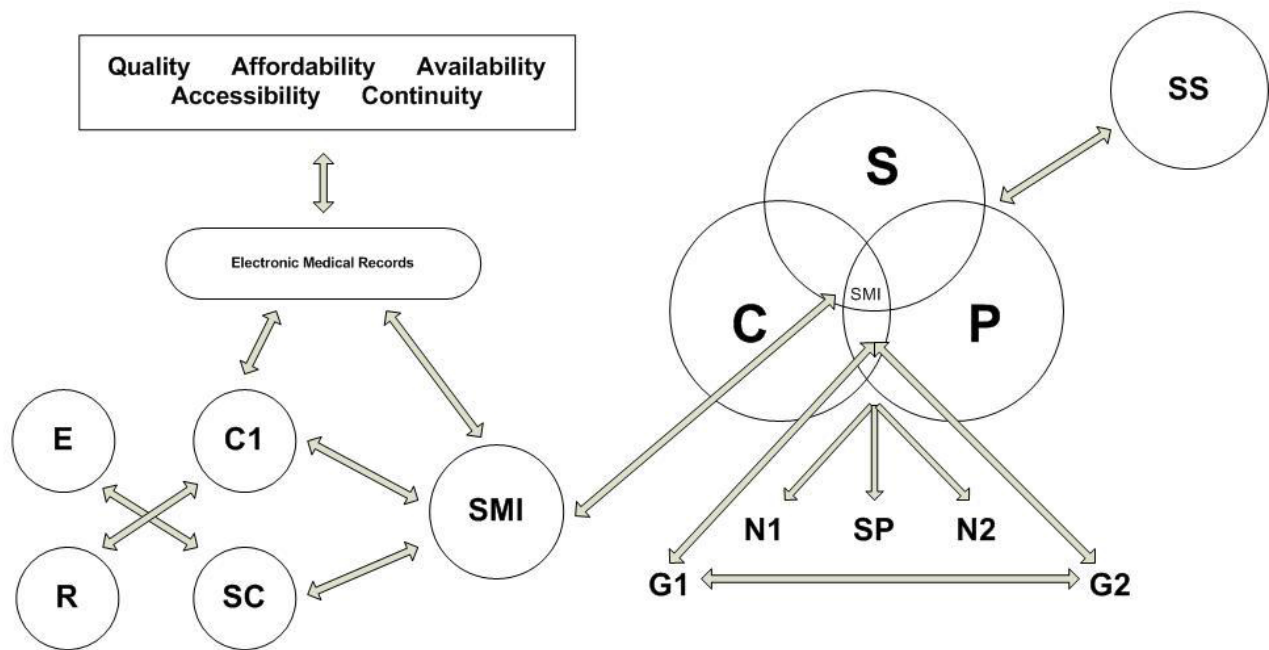
Key features of EMR technology afford the healthcare team new opportunities to expand SMI across the continuum of care. In the past, communication between patient and chiropractor has taken place during visits or over the phone when both parties are available at exactly the same time. E-mail provides an asynchronous mode of communication in which both parties are not required to be available simultaneously for effective communication to take place.[8] If medical questions do not pertain to life-threatening situations, then this form of communication can be extremely powerful in increasing the availability of medical consultation. E-mail communication between patient and chiropractor can be automatically documented within the patient medical record, ensuring patient medical information remains longitudinal. In effect, EMR technology creates a new medium for SMI to take place where e-mail communications between patient and chiropractor are captured and linked to the patient medical record.

Secondly, EMR technology supplies patients with access to their individual patient record which creates numerous benefits. This functionality allows patients to review their record and correct errors and enter information such as diet or medication schedules. Additionally, by directing patients to online medical resources, clinicians expand patient knowledge of their health condition.[9] Essentially, EMR technology can act as communication channel to the medical knowledge base, removing physical contact with a chiropractor as a requisite for SMI to occur.

Another aspect of SMI positively impacted by EMR technology surrounds public health initiatives. As Richard Platt, professor and chair of the Harvard Medical School, articulated,[10] "It's vital that we find ways to improve communication between the public, clinicians, and public health personnel to more quickly recognize actual and potential problems that require coordinated action." EMR technology provides the essential data-capturing, data-mining, and coordination tools to achieve this public health objective. For example, illness data from EMRs provide public health officials with a mechanism for deploying quick-response resources in concentrated at-risk areas. This eliminates waste and channels resources to areas that require it most. Overall, this partnership demonstrates how public health organizations can currently capitalize on EMR technology in the clinical setting to meet the research and health needs of the public. Most importantly, this coordinated effort shows how EMR technology can bring about greater SMI in times of medical crisis.

Figure 2. Society, Culture, Personality [SCP]: Communication and Functional Attributes of EMR

C = Culture	C1 = Communication	E = Entre'	G1 = Gemeinschaft	G2 = Geselleschaft
N1 = Nature	N2 = Nurture	P = Personality	R = Rapport	S = Society
SC = Social Contact	SMI = Social Meaningful Interaction		SP = Socialization Process	SS = Social Systems

Quality of care is vulnerable to the condition of the chiropractor-patient relationship. The introduction of EMR technology into the clinical setting may function as a catalyst for positive change in the chiropractor-patient relationship and subsequently, quality of care through SMI. First, research by Elson and Connelly has demonstrated that EMR technology is an effective tool for shaping provider behavior and ensuring compliance with clinical practice guidelines.[11] EMR workflow technology directs chiropractor behavior towards clinical guideline compliance, while at the same time, utilizing the data collection component as a way to monitor compliance. In addition, provider-patient communication can be strongly influenced by the front-end structure and organization of the EMR.[12] Consequently, if the EMR is designed to facilitate effective dialogue between the chiropractor and patient, the EMR will become an indispensable instrument for retrieving valuable information useful in diagnosis, cultivating trust, and improving the quality of care. It will likewise reduce chiropractor communication variation and help socialize patients to the informational demands of chiropractors.

Finally, data from EMR systems provides chiropractors with multiple opportunities to maintain communication between themselves and their patients. For example, reminders generated from the EMR can trigger an automated telephone calling device that notifies patients about treatments and services.[13] Reminders and alerts can also be extended electronically via EMR technology to both patients and clinicians

that ensure quality control, present educational intervention opportunities, and increase preventive services.[14] In addition, the data stored on the EMR, coupled with querying capabilities, gives chiropractors a mechanism for ensuring patient safety. With large hospitals that use paper-based records, this effort is nearly impossible and responsibility for drug recall awareness often falls on the patient. These technological approaches can strengthen the chiropractor-patient relationship and improve quality of care by opening new channels of communication and increasing the flow of information between the patient and chiropractor (Fig 2).

SCP Model and EMR Technology

Despite the potential for EMR Technology to present greater SMI in the chiropractor-patient relationship, implementation success will depend on healthcare organizations' abilities to incorporate concepts from the SCP model into the delivery of care. As was demonstrated in previous research, these concepts should be utilized by the doctor to foster empathy, trustworthiness, and supportiveness in the doctor-patient relationship.[2] Greater awareness by the chiropractor of how EMR technology may interfere with these ideals is critical for protecting this relationship in the new millennium.

EMR implementation success is dependent upon numerous factors, including organizational leadership, culture, training, and technical and financial resources. A "transient climate of conflict" can be associated with EMR adoption if these success factors are not in place.[15] Carrying over frustration to the chiropractor-patient encounter if these elements are not in place during the transition to EMR technology may negatively impact the patient's

interpretation of a chiropractor's words and actions. As a result, healthcare team members must be cognizant of their behavior as they adapt to EMR technology in the presence of the patient.

After clinicians adopt EMR technology, doctor-patient communication is affected by new visual, verbal, and postural factors.[16] As Stephen Walsh notes,[17] "Handwriting is automatic…but for most people using a computer is not." Essentially, the cognitive load is far greater for those using computers when documenting patient information. Therefore, less energy may be devoted toward patient concerns and the patient may feel alienated by the perceived lack of focus by the chiropractor on the patient. Research by Frankel and others has shown that effective use of computers in examining rooms is dependent upon chiropractor baseline communication and technical skills that are amplified positively and negatively, in their effects on chiropractor-patient communication.[16] In other words, a poor communicator or a technician will perform worse with EMR technology. Likewise, those chiropractors who are technically savvy and solid communicators will perform even better with EMR technology at the point of care. In addition, Patel and associates'[12] breakdown of practitioner end-user characteristics showed that expert users could access different sections of the EMR system and jump back and forward based on the practitioner-patient dialogue. In contrast, intermediate users did not deviate from the order of questions on the screen and could not allow the dialogue to dictate their documentation order or content. Prevention of patient interjections or patient-led dialogue resulting from chiropractor technical incompetence may hamper communication and trust between chiropractor and patient. Consequently, chiropractor computer skill level may play a

significant role in the health of the chiropractor-patient relationship and perceived quality of care.

Privacy concerns are a central fear of both patients and chiropractors. Anxiety that patient information may be leaked to unintended parties may lead patients to withhold information useful in diagnosis.[18] According to a survey conducted by the California Healthcare Foundation in 2005, 67 percent of Americans remain somewhat or very concerned about the privacy of patient information stored on EMR systems.[19] The most alarming statistic was that one in eight patients are engaging in privacy protective behaviors, such as not informing providers of health conditions, asking providers not to document conditions, or simply avoiding tests. [19] This type of patient behavior decreases the level of trust between chiropractor and patient and ultimately inhibits the health restoration process. In other words, without accurate information, the ability of the chiropractor to effectively diagnose and treat the patient is greatly reduced and quality of care suffers. Efforts must be made by the chiropractor to calm these patient fears during the examination to ensure privacy protection behavior does not occur.

Finally, the concepts of social class, age, racial, ethnic, family, and religious background in this therapeutic relationship are important for chiropractors to re-examine in the wake of EMR technology. For the benefits of EMR technology to be experienced across racial and socio-economic lines, equal access to technology and education must exist.[20] These factors may dictate technical competency and access to this technology. Consequently, the chiropractor must take into account these factors when designing a treatment strategy. Yet, technical competency is no guarantee

of agreed upon standards of communication via EMR technology. Without rules of engagement for e-mail communication understood by both parties, overall quality of care may be diminished.[21] If both healthcare workers and patients are unaware of proper e-mail etiquette or electronic relaying of test results, then damage can be inflicted on the chiropractor-patient relationship, ultimately eroding trust.

CONCLUSION

The effect of EMR technology on patient care cannot be contained to one or two segments of the healthcare system. Due to the fact EMR technology is an enterprise-wide software solution aimed at integrating fragmented components of patient care, all chiropractic physicians and other healthcare workers and patients are exposed to its effects. As a result, the Society, Culture, and Personality (SCP) model is vital tool for helping chiropractors understand the impact of EMR Technology across the continuum of care in the new millennium. The concept of SMI plays a pivotal role in fostering empathy, trustworthiness, and supportiveness in the chiropractor-patient relationship. It is therefore imperative for chiropractors to obtain a greater knowledge of how EMR technology influences SMI. These areas include e-mail communication, patient education, public health responses, and electronic patient reminders and alerts.

On balance, the functionality inherent in EMR technology provides numerous benefits currently unavailable with paper-based records, creating new opportunities for SMI among chiropractic physicians as well as with patients. However, adoption does not guarantee EMR system operability or patient satisfaction with the care process. Successful migrations to EMR technology require healthcare organizations to

incorporate concepts from the SCP model into the delivery of care. Essentially, chiropractors and other healthcare workers must re-examine how factors such as social class, age, racial, ethnic, family, religious background, and technical competency influence how they utilize EMR technology to deliver care. These factors can help shape treatment strategies based upon the patient's technological resources and technical ability to employ EMR technology to bring about greater SMI. It is hoped that healthcare organizations who are either assessing or have already acquired EMR technology, integrate these findings into their strategic plans toward EMR technology. This will not only educate stakeholders to the benefits and challenges associated with EMR technology, but can also help to ensure that the ideals of empathy, trustworthiness, and supportiveness in the chiropractor-patient relationship are preserved.

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