MEDICAL DECISION MAKING AIDED BY PHYSICIANS’ LEADERSHIP: MEDIATYED BY SOCIAL CAPITAL IN A SOCIAL NETWORKING ENVIRONMENT

Anjum Razzaque MIS Department, College of Business & Finance, Ahlia University, Manama, Kingdom of Bahrain, arazzaque@ahlia.edu.bh

Abstract -

The rise in the demand to improve healthcare (HC) service quality has led current research to focus on cost effective initiatives like the social networks. Social networks support HC professionals, physicians as in the case of this study, to make better medical decisions to reduce the high rate of currently reported diagnostic errors. This progressing research critiqued the current literature review to propose the need to assess the effect of physicians’ leadership on their decision making (DM) style and the mediating role of their social capital (SC) between their leadership and DM style. These two relations are proposed in form of a viable conceptual framework worthy of future empirical assessment.

Keywords: Physicians Leadership, Physicians decision making, Social Capital Theory, Healthcare Social Networks.

1 INTRODUCTION

There is a rising demand for improvement in healthcare (HC) service quality, considering the amount of long-term diseases (Coccia, 2012). Furthermore, HC service quality also suffers due to the highly rates of diagnostic errors, committed by physicians. Such errors are due to poor medical decision making (DM) by physicians (Kozer, Macpherson & Shi, 2002; Lin & Chang, 2008). Certain initiatives have been taken by the HC sector to improve HC service quality, e.g. electronic health record (EHR). Such initiatives are not only expensive and promising but have been reported as a failure, for instance, due to a slow rate in adaption of such a technology. Furthermore, the EHR, as an initiative, is still unable to aid in the reduction of physicians’ made diagnostic errors (Jalal-Karim & Balachandran, 2008). However, still, there is hope.

With the advent of the Web 2.0 and Health 2.0’s social networks, knowledge management (KM) tools like virtual communities (VCs) have gained attention as effective tools within the HC sector (Landro, 2006; Wright & Sittig, 2008). The applications and systems on the Web 2.0 are effective intelligent systems to aid clinicians to monitor patient progression during delivery of their care and aid patients as intelligent reminder systems. Such systems continue depending further on accuracy of data where clinical data warehousing (Ohno-Machado, 2012). Such tools are incorporated by various HC professionals for experience and knowledge sharing in order to support one another through the social capital of resources embedded within such platforms (Dubé et al., 2006; Chang & Chuang, 2011). Considering that, the social networking initiative is cost effective, hence can aid the HC sector to achieve lower costs (Paul, 2006). Such an initiative is the key. Now the question is how social networks can aid the HC sector’s physicians to facilitate their DM quality so that this could help improve their medical DM quality. DM is a managerial activity determined through leadership and its outcomes reflects the success of such an individual and his/her organizational faith (Riaz & Khalili, 2014). The demand to empower physicians’ DM and leadership has been a long time demand, e.g. as reviewed in publications in i.e. 1967, 1970 and then the 1980. Physicians require leadership skills to make effective decisions. Leadership occurs anytime, e.g. carrying out tasks during physicians’ routine care. While the NHS outlines clinical service efficiency, service attain through value of
money, safety, effectiveness and patient experience as benchmarks for HC quality, such a change requires effective leadership (Kumar, 2013).

Even though previous research has assessed the role of social capital on knowledge sharing (e.g. Chang & Chuang, 2011; Chiu, Hsu, & Wang, 2006), the effect of the role of SC on DM is yet to be assess; as per the observation made within the review of the published literature. Furthermore, the role of leadership for DM is also a new research area currently gaining attention (Fulop & Mark, 2013). There is need to also consider the mediating role of physicians’ SC, derived from the SC theory (SCT) when proposing the direct role of their leadership on the style of their DM, since physicians make sense and DM through models and portray their work through storytelling where ties relational leadership with accomplishment of tasks to express that DM is a practice, which is relational for a leader to possess (Fulop & Mark, 2013). The rationale behind critiquing reviewed literature to integrate physicians’ leadership, their medical DM quality and SCT is since physicians view themselves as independent consultants whose medical DM quality (Kumar, 2013) is reliant of their own leadership, which can be further enhanced when they are able to participate with social network of ties in order to facilitate their medical DM (Mascia & Cicchetti, 2011). Physicians SC mediated between their leadership that facilitates their DM quality within a VC environment since social media is playing a changing role in Web 2.0 to create virtual environments, which can remove culture, language and geographical barriers and allow collaborator of common interests, such as so clinicians to participate to recommend during online problem solving (Ohno-Machado, 2012). The social media environment becomes especially important since physicians have shifted towards the adaption of practices are influenced through face-to-face social interactions, within HC based social networks of social capital of resources within participants relationships, most important tools, in the HC sector (Mascia & Cicchetti, 2011). Based upon the above introduction, in the next section – i.e. the literature review section, the authors of this paper move forward to critique review of literature to further propose the direct role of physicians’ leadership on their medical DM quality and the mediating role of SCT between physicians’ leadership and their medical DM quality, as depicted in Figure 1.

**Figure 1. Mediating role of Social Capital Theory between physicians’ Leadership and their decision making in a social network environment.**

### 2 LITERATURE REVIEW

Social media is a KM tool where varying types of stakeholders are able to share their experience and knowledge with an aim to improve their decisions outcomes (*). Further on this section is utilized to describe an in depth critique of reviewed literature to understand the direct relationship between physicians’ leadership and their medical DM quality and the mediating role of SCT between their leadership and their medical DM quality, as depicted in Figure 1.

#### 2.1 Relationship between Physicians’ Leadership and medical Decision Making

There is rising interest in HC based leadership, i.e. clinical leadership in particular in the NHS, especially since scholarly publications of 2008 and changing NHS resolutions in 2010. Hence, there is
a rising demand for empowering physicians for DM over organizational budgets and policies (Kumar, 2013). In the HC sector, leadership is also pushing employees in the right direction based on vision and strategy. Various types of leaderships exist: coercive, collaborative, despotic and democratic leadership. Due to shifting policies in the UK HC sector, medical leadership has become a new buzz word, i.e. migration from management to clinical leadership (Bhugra, 2011). Fulop and Mark (2013) discussed the link between leadership and DM using the Cynefin framework. This study was also within the case of the HC sector. This is in addition to past studies, which have described the link between leadership and DM using the social constructionist and the social constitutive approaches. This study is in line with Riaz and Khalili (2014), where it was also reported that leadership plays a central role for KM in HC institutions through their behavioral and interpersonal skills to link KM with DM in three levels: individual level, organizational level and group level.

As depicted in Figure 1, and as reported by Fulop and Mark (2013), the Cynefin framework is a cognitive approach that refers to the action of sense-making through the utilization of narration and language, considering that physicians perform DM using models and like to express their achievements or work through storytelling. As depicted in Figure 2, the Cynefin framework is composed of 4 contexts that show the relationship between cause and effect: simple and complicated, which is more orderly, in contrast with complex and chaos. It is possible to move from one domain to another. All domains require situational diagnostic analysis through the leadership qualities of a decision maker. The centre of Figure 2’s model depicts the fifth domain, which is called disorder. This domain aims to express that a decision maker does not know what domain his/her situation is in. A domain of best practice is the simple domain, while in the complex domain there is disturbance, which needs to be bought to order. The chaos domain is where there lays an opportunity asking for a change. This is the domain where there is a problem, which is in need of a solution. While the simple and complicated domains fall under the cause and effect of an order, i.e. where cause and effects are known, the complex and chaos domains fall under un-order, i.e. cause and effects are unknown and past actions will not help to provide current or future solutions.

There are five types of DM styles, i.e. (1) rationale DM, (2) intuitive DM (3) dependent DM, (4) avoidant DM and (5) spontaneous DM. Rationale DM is performed through logical and reasoning. Intuitive DM is performed through gut feelings. Dependent DM is performed through others’ support.
Avoidant DM is performed by postponing and disproving, time consuming and spontaneous DM is a quickly performing an impulsive decision (Rehman & Waheed, 2012). As per analysis of the authors, when bearing in mind the Cynefin framework, the Rationale style of DM is appropriate for all the five contexts. Intuitive style of DM could be more applicable within the disorder, complex and chaos context of the Cynefin framework. The dependent style of DM could be applicable disorder, complicated, complex and chaos based contexts of the Cynefin framework. The spontaneous style of DM is most applicable simple and complicated contexts since there is already a form of order established. Furthermore, it is transformational leadership which would be most applicable in unordered forms of contexts of the Cynefin framework since transformational leader act as role models and use trust to charismatically harbors motivation and encouragement of creativity, by stimulating intellect and power, to sustain and attain good group performance. When transformational leader take their time to perform rationale DM, they comprehensively choose between various alternatives, coordination and knowledge (Rehman & Waheed, 2012). Still, it is important to also bear in mind that leadership is more motivational, flexible, encouraging, where a leader is willing to develop others. Leaders structure and restructure to modify motivations, to drive differing personalities, based on their leadership personality, cognitively diagnostic capabilities. However, leaders’ intelligence, confidence, dominance or assertiveness plays a week role towards their leadership quality. Leadership characteristics are based on emotional intelligence. In other words, a leader should be aware of his/her strengths and weaknesses and should be sensitive of the culture in order to create group identification through group norms to improve productivity and performance (Bhugra, 2011).

There are varying theories describing leadership: great man theory – stating leaders are born but not made and thus not application in the HC sector, trait theory – where possessed traits like intelligence, adaptive, dependable, self-confident, dominant, creative and assertive form good leading skills (not applicable in the HC sector), behavioral theory – focuses on leaders do, i.e. effective behaviors, contingency theory – focus on how leaders work in situations and how they work with their followers, transactional leadership – practices in HC where such a leader who forms hierarchy where he/she either punishes or rewards depending on performance outcomes and transformational leadership – an inspirer through vision preferred in the HC sector (Kumar, 2013). It is the leader’s ability to perform daily or long term DM and leadership is a value each manager should possess. There are four types of leadership: transformational, transactional, charismatic and team leadership (Rehman & Waheed, 2012). Furthermore, (Riaz & Khalili, 2014) also mentioned that transformational and transactional leadership aid leaders to perform DM, which is based on KM processes and rationality/logic to perform problem-solving. Here, choices are weighed, and these choices are based on KM processes. KM processes means the utilization of knowledge creation, modification, application, transference, storing, accessing and disposing of organizational knowledge is the organizational intellectual capital, i.e. structural, human and consumer capital. Pertaining to leadership of physicians, it is interesting to consider what Rehman and Waheed (2012) also reported that there are five leadership styles: (1) to decide, (2) to individually consult him or herself, (3) consult with the group, (4) facilitate or (5) delegate. Leadership style is then based on DM future events/circumstances, i.e. significance of the decision, expertise of the leader, leadership commitment, commitment likelihood, support of the group, expertise of the group and the ability/efficiency of the group. Based on the just-mentioned argument, the first proposition of this study:

Proposition 1: Physicians leadership has a positive and significant influence on their medical DM quality, within a social networking environment.

2.2 Mediating role of Social Capital Theory

Currently, leaders are more unstable and virtual. Leaders are unstable due to changing organizational policies and global competition, etc. Such leaders are also virtual since work now is more online, hence spans across time and space. Hence, to develop today’s organizational leaders, the focus shifts towards the needs of the organizational SC (McCallum & O’Connell, 2009). The context of organizational SC was also discussed in another study, which focused on the cost cuttings IT
management changes that initiated from 2007’s economic downturn where IT investments costs got lowered and in 2009 the focus was to find a way to sustain cost cuts while maintaining business growth. Superior IT management skills are the key for convincing certain IT investment. Such skills come from human capital, i.e. individual organizational capabilities and skills but they too fall short if not accompanied with communications skills, i.e. SC of opportunities. The SC of a social structure is what leadership creates to help human capital become more productive and effective. This is since leaders are part of a social structure where certain actions facilitate individual in such a network of relations. Here, individuals within such a social unity expect something in return for the resources they initial share with one another, through goodwill. SC can be written as a formula, i.e. SC = physical capital to facilitate organizational production + human capital to aid individual effectiveness through individual capabilities and skills set. Through such SC of relations, new intellectual capital is created for organizational benefit (Warner, 2012). From the perspective of both concepts, social network and SC, it is important to take notice that while a social network is a social structure, composed of connections representing social ties where some are weak, strong, indirect or direct, SC is the content, structure and insight of a participant’s social relationship within a network. Group, organizational and individual performance requires both social network and SC in order to attain success. Also, both, social network and SC are key determinants for leadership success (Li, 2013). In conclusion, when bearing in mind the relation between social network and SC, it is the social capital of relationships between a leader and other leaders, as well as other organizational stakeholders, makes a leader successfully achieve goals. E.g. a chief information officer (CIO) would collaborate with heads of other organizational department as well as customers and the employees under his/her leadership and department (Warner, 2012).

Now, when considering the relationship between SC and DM, it is first important to consider that decisions transform ideas to business opportunities requiring knowledge (Escalfoni, Braganholo, & Borges, 2011) where since a long while research has stressed that interpersonal relations intervene to improve the communication process for affecting DM. Individuals make decision not really due to the influence of media but due to face-to-face with individuals whose interactions influence one DM (Menzel & Katz, 1955). Organizations encourage a information management environment so this environment of intelligence gathering and sharing harbors DM based on a well-informed knowledge foundation (van Riel, Lemmink, & Ouwersloot, 2004). To understand the important of SC for DM, it was interesting how (Mascia & Cicchetti, 2011) reported that physicians have shifted from individual clinical DM to evidence based medicine (EBM). Here, DM is based on an individual but backed up and driven by medical review of literature. This is important to consider since this study assesses the impact of social networks on physicians’ attitudes on adapting EBM since not all physicians prefer to utilize EBM for medical DM. SC plays a positive role in improving physicians’ attitude to adapt the practice of using EMB. This is not the case in those institutions where there is no encouragement to adapt using EBM. The empirical findings of this study suggested that older physicians had a higher rate to opt for adapting EBM. Furthermore, physicians who would perceive that gaining evidence was achievable were more willing to adapt EBM than those who would feel that their access to scientific evidence was limited. Also it was reported that those clinics that supported EBM were more effective in medical DM than those clinics, which utilized a snore traditional models of DM (Mascia & Cicchetti, 2011). In conclusion, leadership and SC go hand in hand considering the definitions of leadership, in addition to the definitions portrayed in other studies. A leader encourages followers’ participation to achieve a common goal through interactions and interpersonal skills. Such ties form a successful relationship between a leader and followers so one can identify with another and, hence, deploy mutual resources to reach a particular goal. This shows that leadership is a SC, which surrounds his/her followers through perceptions and relational ties within and outside the organizations where follows are (McCallum & O’Connell, 2009). Based on the above argument, the second proposition is:

Proposition 2: Physicians SC plays a mediating role between their leadership and their medical DM quality, within a social networking environment.
The next section is utilized to discuss how literature was reviewed to propose the conceptual framework, depicted in Figure 1, of this paper.

3 METHODOLOGY

This is a deductive research, which initiated with the attaining a broader understanding of the landscape of the HC research area, with particular interest to understand why the HC sector continues to suffer in its service quality. In order to make the initial research initiative possible, a broad review of literature primarily spanned over a review of current journal and conference articles, in the following research areas: SCT, Healthcare 2.0, social network, social media, virtual community, knowledge management’s knowledge sharing, leadership and DM. Furthermore, the review of literature’s primary focus was to investigate how physicians would be at aid in order to facilitate HC service quality. However, the review of literature was not limited to only HC related articles, but articles with case studies also from other sectors like managerial related research, which was possibly derived out of the banking sector, etc. The authors critiqued the reviewed literature to pinpoint gaps in research, which had a direct affiliation with the problem/s in the HC sector, i.e. investigating how HC service quality could be improved by integrating those theories, which are recently gaining attention in the HC research, e.g. leadership, physician DM and SCT, which were reported as promising towards current HC cost effective initiatives, e.g. Web 2.0’s social networking platform’s VCs for physicians’ knowledge sharing. As a result, the authors of this paper were able to propose a conceptual framework based on two propositions: (1) the direct role between physicians’ leadership and their DM quality and (2) the mediating role of physicians’ SC between their leadership and their DM quality.

4 DISCUSSION AND CONCLUSION

This is a research in progress. The aim of this research was to propose a literature driven conceptual framework. The aim of the framework was to depict two propositions: (1) direct role of the physicians’ leadership on their medical DM and (2) the mediating role of physicians’ social capital between their leadership and medical DM. The literature review section of this paper systematically portrays a critique of reviewed literature before suggesting the above-mentioned two propositions. There are theoretical, as well as, practical implications pertaining to this conceptual framework. From a theoretical implication point of view, this paper’s proposed conceptual framework is promising if empirically assessed. An empirical assessment of this framework will finally prove the critiqued theories in the review of literature of this paper. Hence, future research can empirically assess the proposed conceptual framework of this paper, with a preference of applying quantitative data analysis, considering that there are existing instrument pertaining to leadership, SCT and DM quality. Such empirical assessment will pose as a contribution to knowledge since such an empirical assessment has not been conducted before, and particularly in the HC sector, bearing in mind the critiqued review of literature presented in this paper. It would be feasible to also empirically assess this study’s conceptual framework, not only within the context of physicians as a target population but also patients, as well as other HC professionals such as nurses, etc. One reason for this is since the Web 2.0 has got popular with patients who are now willing to share their own data to assist their own care (Ohno-Machado, 2012). Furthermore, future research could also consider culture as an intervening factor, within this paper’s conceptual framework. This is beginning to become an important aspect for consideration since Bhugra (2011) suggested that future research could assess whether leadership styles varies across cultures. This is even more important when Bhugra (2011) also reported that until now the purpose of leadership is unclear while leadership can be forward thinking whether successful or not and only depends on what they are working on. Leadership can, or in some cases cannot be a formal authority and is functional, i.e. process oriented leader rather than the one who is oriented to personal traits of his/her subordinates. This is important since in HC, HC professionals work within a system. Considering that the empirical assessment of this paper’s conceptual framework will furish reality to the critiqued theories and if supported by the future empirical analysis; HC institutions will
have a cleared reason and incentive to setup or strengthen their ICT infrastructure/s and policies to encourage and sustain physicians’ leadership for medical DM within the SC of relations within a social network environment.

References


