Knowledge Management in Evidence-Based Medical Practice: Does the Patient Matter?

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Abstract: Evidence-based medicine has greatly influenced decisions and actions throughout the health care industry for a couple of decades, particularly in the advanced countries. However, little is known as to how patients with their tacit knowledge have fitted into the evidence-based medical practice equation especially in the developing world, hence the need for this study. The combined use of the theory of communicative action and the AGIL taxonomy of adaptation, goal attainment, integration, and latent pattern maintenance by Talcott Parsons served as the theoretical framework for the study. The theory of communicative action provided the benchmark in understanding how doctors and patients are motivated to adapt and integrate the explicit and tacit knowledge forms in attaining the goal of quality evidence-based medical practice in line with the AGIL taxonomy. The qualitative interviews with fifty respondents - twenty doctors and thirty patients - in the central region of Ghana are utilized as the data base for the discussion. The study concludes that at present patients' tacit knowledge does not matter in the practice of evidence-based medicine in Ghana. This situation has to be addressed by empowering patients to be actively involved in clinical decision-making affecting their health. This is critical because effective implementation of evidence-based medical practice demands a good blend of explicit and tacit knowledge forms possessed by doctors and patients respectively. It is believed that embracing this strategy of managing knowledge in the health care dispensation holds the potential to bring about improved health care outcomes.

Keywords: knowledge management, explicit and tacit knowledge forms, codification and personalization knowledge management strategies, evidence-based medical practice

1. Introduction

Evidence-based medicine is defined as the integration of research evidence, clinical expertise, and patient preferences and values in clinical decision-making (Sackett et al., 1996). This model of medical practice has influenced decisions and actions throughout the health care industry for about a couple of decades, particularly in the advanced countries. However, little is known as to how patients with their tacit knowledge have en suite into the evidence-based practice equation especially in the developing world.

An understanding of how patients fit into the evidence-based medical practice is critical because patients, more than ever, are equipped with wealth of tacit knowledge about their health needs. Such tacit knowledge can have a dual connotation on health care delivery by either promoting or obstructing the acceptance of medical expertise based mainly on explicit knowledge & clinical experience. Incorporating patients' needs, values, and expectations rigorously in medical practice has many benefits. It holds the potential to deal with inappropriate tacit knowledge that patients may have on their health conditions, while at the same time reinforcing appropriate knowledge that can promote their health.

Marginalization of patients' tacit knowledge in the evidence-based equation can easily spell the doom for the health care industry. This is because effective health care delivery is based not only on rigorous scientific knowledge, but also on clinically relevant experience as well as patients' values. Patients' values take into cognizance the unique preferences, concerns, and expectations each patient brings to the clinical encounter. These are values that must be integrated into clinical decisions if they are to serve the patient. In order to ensure optimal clinical outcomes, therefore, there is the need for an effective integration of the three elements espoused by the evidence-based medical paradigm– scientific knowledge of doctors, clinical experience and patients' values. This paper, therefore, aims at assessing the inputs of patients' tacit knowledge in the knowledge management dispensation within the evidence-based medical practice in Ghana.

The paper takes off with the rationalization for the evidence-based medical paradigm and closely followed by the knowledge forms and management strategies available in aid of clinical decision-making. Next, the study's theoretical framework premised upon the mix application of the theory of communicative action and the Parsonian AGIL taxonomy is discussed as the benchmark in assessing

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the role of patients' tacit knowledge in evidence-based medical practice. This is followed consecutively by the study's methodology, results, discussions, and conclusion.

2. Rationale for evidence-based medical practice

Evidence-based medical practice refers to the rigorous use of science or research evidence together with clinical expertise and patients' tacit knowledge as the basis for making clinical decisions. Since the early 1990's, various fields of human endeavour, particularly medicine and health care policy-making, have taken up the challenge of evidence-based practice. Proponents of evidence-based practice believe that explicit knowledge as well as tacit knowledge forms should constitute central pillars of clinical or micro level health care decision-making.

The rationale for evidence-based medical practice derives strongly from the need for health care providers to be more accountable to their clients. Now, more than ever, there is an increase in the availability of information about health and illness, by the media and on the Internet (Hardey, 1999; Karpf, 1988). Public awareness and interest in health matters is on the rise, as seen in the increased interest in health and wellness, the setting up of support groups activities, and the creation of health discussion groups. This is leading to a growing wealth of knowledge with which the public can use to question professional health care services. Doctors, therefore, are being pushed to develop evidence-based practices and treatments in order to substantiate and justify their decisions and actions. Evidence-based medical practice is, therefore, a relatively systematic and scientific approach that has developed out of social accountability.

The practice of evidence-based medicine follows four steps: (1) the formulation of a clear clinical question related to the patient's problem, (2) a search in the literature for relevant clinical articles (i.e. the best available evidence), (3) the evaluation of this evidence for its validity and usefulness, and (4) the implementation of the evidence in clinical practice (Rosenberg et al., 1995). Clearly, evidence-based medicine starts with and depends on scientific research which is based on the use of explicit (externally generated scientific) knowledge. The literature on evidence-based medicine is thus emphatic on externally generated scientific evidence. Although it does not ignore the important role of clinical expertise and patient values and preferences, those two factors especially the latter are downplayed.

This observation clearly signifies that internally generated explicit knowledge, as well as the tacit knowledge doctors derive from their daily encounters with patients, may be easily ignored. Without a doubt, clinicians may find it difficult or almost impossible to support their practices and actions with only tacit knowledge as evidence. Yet, ignoring or overlooking the significance of tacit knowledge in clinical practice may not serve the interest of the health care system. This is because doctors gain a wealth of knowledge from their practice, which should be placed at the disposal of patients for improved health care delivery. Furthermore, patients are more likely to accept the medical directives of doctors, not only because of their esoteric scientific knowledge, but also because of the intrinsic pay-off associated with patients' involvement in clinical engagements. Under this dispensation, patients are seen not just as mere clients at the receiving end of medical practice, but as active players in the health care delivery process.

The organization and management of clinical experience as well as patients' inputs in a form of tacit knowledge can complement scientific evidence in clinical practice. Doctors and patients are likely to optimize clinical outcomes and improve quality health care delivery when scientific research evidence accords with clinical expertise derived from clinical practice and patient values and preferences. This reinforces the view that external clinical evidence can inform, but never replace individual clinical expertise. To be sure, it is the clinical expertise that determines whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision with the patient's values and preference in mind (Sackett et al., 1996). Theoretically, evidence-based medical practice is premised upon both explicit and tacit knowledge use. These knowledge forms and the management strategies commensurate with them are assessed hereafter.

3. Knowledge forms and management strategies

The balance of power within the doctor-patient relationship has been characterized by the distinction between explicit and tacit knowledge forms possessed by doctors and patients respectively and which one features prominently in clinical decision-making. The fact that doctors' explicit knowledge features more prominently in clinical decision-making than patients' tacit knowledge provides them with more

authority in the doctor-patient relationship. Patients' tacit knowledge is, therefore, relegated to the background when clinical decisions are being made.

The explicit and tacit knowledge forms are currently recognized as the *de facto* knowledge categorization informing decision-making in almost all organizations. However, Polanyi (1967) believes that a large part of human knowledge is tacit. Knowledge of this type is action-oriented and has a personal quality that makes it difficult to communicate. Accessing tacit knowledge, therefore, presents a number of challenges, due to factors such as the absence of explicit scientifically repeatable process for eliciting such forms of knowledge. Explicit knowledge, however, can be communicated across time and space.

Conceptually, there is a clear distinction between these two forms of knowledge. Nevertheless, they are not discrete or independent in the practical sense. These forms of knowledge are not dichotomous, but mutually dependent and reinforcing (Alavi and Leidner, 2001; Lam, 2002). Fostering a dynamic interaction between tacit and explicit knowledge, therefore, generates new forms of knowledge vital in decision-making (Nonanka and Tekeuchi, 1995; Lam 2002). This implies that effective utilization of knowledge (both explicit and tacit) in health care decision-making can be assured if health care organizations put in place appropriate knowledge management strategies to maximize knowledge use in decision-making.

Knowledge management is defined as the process by which an organization creates, captures, acquires, validates and uses knowledge to support and improve its overall functioning (Kinney, 1998; Davenport et al., 1998; Bhatt, 2001). It entails a plan that describes how an organization intends to better manage its knowledge for the benefit of that organization and its stakeholders. A good knowledge management strategy is closely aligned with the organization's overall strategy and objectives. Selecting the right knowledge management strategy is, therefore, an important prerequisite for attaining organizational objectives.

Hansen et al. (1999) point at two contrasting strategies for knowledge management: codification and personalization. They believe that the best knowledge management strategy is always a combination of the two, but with a stronger emphasis on one. While a codification strategy is appropriate for explicit knowledge to thrive, the personalization knowledge management strategy better supports the use of tacit knowledge in decision-making (Jasimuddin et al., 2005). Since tacit and explicit knowledge forms are complementary, an organization's efforts towards knowledge management should be focussed on instituting the most appropriate strategy to maximize knowledge use in decision-making.

These two knowledge management strategies have distinctive features. The codification knowledge management strategy ensures the re-use of explicit knowledge by capturing, codifying, classifying and making available knowledge to support routine problem solving. Uniformity in action is ensured since knowledge is recycled to guide decision-making. Questions regarding problems and the usual response to them serve as the primary questions guiding codification strategies in decision-making. For such questions to be resolved, libraries of procedures, policy documents, guidelines, data collection forms, typical cases and outcomes, and risk assessment tools derived from all parts of the organization must be developed and made available to all individuals in the organization in aid of decision-making. The codification knowledge management strategy also thrives on the availability of incentives to encourage staff to use the system. This implies that organizations adopting the codification knowledge management strategy should reward the use of, and contributions to, document databases as recognition of staff adherence to policies. The codification strategy, in general, involves intensive investment justified by multiple knowledge re-use.

At the same time, the codification strategy seems to overemphasise internally generated explicit knowledge re-use, without any reference to the use of externally generated explicit knowledge in the form of research evidence. This is a flaw that is not addressed in the strategies of knowledge management presented by Hansen et al. (1999). Since explicit knowledge comes from both internal and external sources, attempts at its management should be comprehensive enough to reflect this duality.

This notwithstanding, the codification knowledge management strategy based mainly on internal explicit knowledge can complement the evidence-based decision-making paradigm, which also seems to be tilted towards externally generated explicit knowledge to the neglect of explicit knowledge

generated internally in an organization. Harmonizing the codification knowledge management strategy and the evidence-based decision-making paradigm has the potential to provide a more comprehensive perspective on explicit knowledge management in health care decision-making.

The personalization knowledge management strategy, on the other hand, is suitable for tacit knowledge use. Since communication is the bedrock of the personalization strategy, organizations adopting this strategy must reward direct communication and empower people to share their views without any fear or intimidation. This strategy of managing knowledge entails a modest investment, justified by improved frequency and quality of communications (Hansen et al., 1999; Wyatt, 2001). Relating this to the evidence-based paradigm, therefore, it can be concluded that this strategy of harnessing knowledge can best be utilized in tapping patients' tacit knowledge to be incorporated in clinical decision-making. This will enable doctors to package health care services in such a manner to reflect patients' values and expectations.

Since codification and personalization knowledge management strategies exhibit contrasting features, they should be commensurate with the dominant knowledge form of any given organization. The features of the two knowledge management strategies indicate clearly that organizations embedded with routine and non-routine tasks lend themselves largely to codification and personalization knowledge management respectively.

The two knowledge management strategies have their unique advantages and disadvantages. The personalization strategy is recommended for its contribution to innovation (Alversson, 2001), and its low investment in information technology (Johannessen et al., 2001). Disadvantages associated with the personalization strategy include an organization's inability to store knowledge beyond the minds of individuals without some process of articulation. In other words, personalized knowledge is difficult to be communicated to others (Connell et al., 2003). The most serious difficulty associated with personalization strategy as a support for evidence-based medical practice is the lack of confidence on the part of some patients to share their tacit knowledge with doctors.

The codification strategy does protect the loss of knowledge associated with the exit of employees because such knowledge is taken from individuals and codified for general organizational use. This is particularly critical in an environment of a high labour turnover, like the current situation in the health care sector, particularly in the developing world. The fact that knowledge is codified, however, makes organizations "externally vulnerable" because codified knowledge can easily be leaked out of the organization. It is also costly pursuing a codification strategy because it is based heavily on information and computer technologies.

The choice of knowledge management strategy should also be based on the organization's knowledge and objectives. Business and profit-oriented organizations are more likely to embrace the personalization strategy to insulate themselves against knowledge leakage to "business rivals" (Jasimuddin et al., 2005). All other things being equal, health care decision-makers, like most decision-makers in non-profit and quasi -profit oriented organizations, may not necessarily be afraid of knowledge leakage. In this case, they are likely to be better off if they codify knowledge and share it with others in the industry for improved health care delivery.

In spite of the benefits associated with the codification of health care knowledge, Wyatt (2001) called for the development of personalization strategy for knowledge management in health care decision-making. This means that a case has been made for an amalgamation of explicit and tacit knowledge forms in health care decision-making. In order to buttress this perspective, an understanding of the knowledge management strategies in support of evidence-based medical practice becomes critical, hence the need for the study.

4. Theoretical framework

Two contrasting perspectives have been advanced in assessing the role of patients' tacit knowledge in clinical decision-making. There is the Parsonian perspective, which characterizes medical and explicit knowledge as having primacy over tacit understandings of health and illness, thus making the doctor the sole active determinants of health and illness. The patient is therefore rendered a mere passive recipient of medical explicit knowledge (Parsons, 1951). This Parsonian view of explicit knowledge use in clinical decision-making took decades to be challenged by social control theorists

like Friedson (1970), who saw the one-sided rationalization of explicit knowledge use in clinical decision-making as primarily hierarchical and essentially an affront to the majority of patients.

The key characteristic facilitating the power doctors have over patients, according to Friedson, is knowledge control, which many doctors are doubtful to give up easily. He, however, proposed a remedy to the situation through empowerment of patients to play a more active role in clinical decision-making as well as in the overall delivery of healthcare services, both at the micro and the macro levels. Friedson's work formed the basis of a new interest in studying and understanding patients' knowledge use in clinical decision-making (Scambler and Britten, 2001); and the facilitation of the evidence-based medical practice, particularly in the advanced world in the 1990s. The evidence-based paradigm can at best be described as an alternative to medical practice based on authority, tradition, and doctors' sole expertise and experience.

One of the applicable sociological theories that can be adopted to understand the motivation behind the doctor-patient communication and the attainment of the latent pattern maintenance is the Habermas' theory of communicative action. As per the tenets of the evidence-based medical paradigm both explicit and tacit knowledge forms are expected theoretically to play a part in informing clinical decision-making. How these two forms of knowledge feature in clinical decision-making remain unexplored in the context of health care systems in the developing world.

Communicative action, according to Habermas (1990), is a distinctive type of social interaction based on mutual understanding reached by all the parties involved in the interaction process in an unrestraint fashion. This action facilitates a decision-making process that encourages collective construction of goals and means to attain mutual agreement, rather than the achievement of conceited interest. Decision-making in this context becomes an interactive collective task, where communicative rationality is reached mutually by means of the application of varied knowledge forms, including scientific, moral, ethical, and emotional analysis (Healey, 1997).

Practically, however, communicative action geared towards communicative rationality is difficult to be attained in clinical decision-making process ingrained essentially in strategic rationality. Such strategic rationality operates by identifying and pursuing set goals, with reference primarily to scientific knowledge and adopting scientific solutions with patients being kept on the fringes. Communicative rationality, by contrast, involves the development of shared understandings about things which can then be used as the basis for mutually agreed action. Doctors and patients are likely to attain communicative rationality if they are motivated to adapt and integrate the explicit and tacit forms of knowledge as resource in attaining the goals of quality evidence-based medical decision-making.

In this study, how the communicative rationality is attained in clinical decision-making by meeting the needs defined by the AGIL taxonomy - *adaptation, goal attainment, integration,* and *latent pattern maintenance* – is explored. According to Parsons (1951), all social or action systems have four major needs – adaptation, goal attainment, integration, and latent pattern maintenance. How these needs are met determines the success of any social system. In relating this to the healthcare system, a*daptation* refers to the need to secure sufficient knowledge (resources) in informing clinical decisions. The knowledge mobilized is then utilized in ensuring specific goal attainment within the healthcare system. Effective adaptation geared toward *goal attainment* becomes a reality when knowledge forms marshaled are well integrated within the system. *Integration* thus connotes the need to coordinate, adjust, and regulate relationships between doctors and patients with the objective of reaching mutually agreed clinical decisions. These decisions can best be reached in a form of communicative rationality when doctors and patients are sufficiently motivated to play their parts within the health care system, thus ensuring the *latent pattern maintenance*. A mixture of the theory of communicative action and the AGIL taxonomy, therefore, anchors this study.

5. Methods

In this study, interviews with fifty respondents from the central region of Ghana – thirty patients and twenty doctors are analysed as the basis for examining the place of patients' tacit knowledge in the evidence-based medical practice paradigm. The convenience sampling technique was adopted in selecting the thirty patients at the Central Regional Hospital in Cape Coast, Ghana. For the doctors, the purposive sampling was the benchmark in the selection of the twenty participants from hospitals in the region. This made it feasible for doctors at the various strata of the medical hierarchy to be selected for the study.

Qualitative interview was the main data collection technique used in this study. The interviewing technique was chosen over the other techniques because the face-to-face interview is said to be perhaps the most powerful and useful tool in research (Kerlinger, 1986). To ensure that the questions were not ambiguous, a number of health care decision-makers and members of the general public were interviewed at the pre-testing stage. Their responses to the interview questions were analyzed to assess the quality of the instrument. This opportunity assisted greatly in structuring a good and clear instrument for the respondents.

The actual interview session lasted for an average of thirty minutes. Responses were audio taped, and some notes were taken during the interviews. Themes raised during the interviews were guided principally by the theory of communicative action and the AGIL taxonomy and their application to knowledge use in clinical decision-making. This was approached with much emphasis on patients' tacit knowledge use in clinical decision-making. The interview instrument for the doctors covered the following areas: (1) perception of evidence-based medicine, (2) types of knowledge used for health care decision-making, (3) perception of patients' tacit knowledge in clinical decision-making and (4) knowledge management practices in health care decision-making. The interview instrument for the patients also entailed the following issues: (1) perception of evidence-based medicine, (2) patients' knowledge and its place in clinical decision-making, and (3) knowledge management strategies patients believed should be adopted in support of evidence-based medical practice.

A combination of inductive and deductive approaches was adopted to categorise the factors and variables entailed in the data. The analysis progressed in two stages. Stage one of the analysis entailed thorough individual interview transcripts, which were reviewed manually, line by line, in order to identify patterns or themes and produce key words and phrases (inductive process). This process is sometimes referred to as "open coding" (Strauss and Corbin, 1990). Labels or categories were produced from the key words or phrases as a way to uncover common factors or variables. Relationships among the factors or variables were then established, which were matched with those from the literature. Stage two of the analysis involved cross interview transcripts. Similarities and differences in the factors or variables were identified in order to determine how they were linked. This process is referred to as "axial coding" (Strauss and Corbin, 1990), which facilitated an integrated link among the factors and the variables. Similar factors and variables were identified and given common names, while retaining the unique variables. Factors and variables involved in knowledge management processes entailed in clinical decision-making were then established.

6. Study results

It is explicit in the literature that the practice of evidence-based medicine entails integrating individual clinical experience with the best available external clinical evidence (Sackett et al., 1996). Such practice clearly flourishes with the development of systematic reviews and meta-analyses, which summarize the best available evidence on a topic. For optimal health care delivery, therefore, an evidence-based medical resource that continually search, appraise and summarize the literature for doctors' use in clinical decision-making becomes a prerequisite. Further, an availability of a community of practice for medical teams also becomes paramount. Wenger et al. (2002) defined communities of practice as groups of people who share concerns, set of problems, or a passion about an issue, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis. Communities of practice are, therefore, critical in ensuring successful evidence-based medical practice because best evidence does not need to be generated by all doctors on individual basis. Note that credible medical evidence can be shared & authenticated by fellow practitioners if they indeed practice as a community. These critical parameters of the evidence-based medical practice provided the basis for the questions posed to the doctors interviewed for the study.

It was unanimously expressed by the doctors interviewed that evidence-based medical practice is the best route to ensure effective health care delivery. They were, however, quick in admitting that conditions on the ground made it almost an impossibility to implement the practice fully. Unavailability of sufficient funding to provide an effective foundation for evidence-based medical practice stood tall among the problems mentioned. Next was the limited access to improved modern technologies and up-to-date medical research from both home and abroad. Note, however, that these are critical linchpin for successful implementation of evidence-based medical practice. One doctor responded as follows:

> *"Evidence-based medicine though we embrace it and try to put it into practice, unavailability of resources makes it difficult to implement it. This is the reality and we cannot run away from it. I hope it changes for the better though."*

The doctors further admitted that explicit knowledge combined with clinical experience essentially provided the basis for making clinical decisions. These knowledge forms were not codified to be easily accessed by all doctors. It was evident that whereas some doctors made efforts to codify the knowledge acquired in practice for easy re-use, others found no need for it because the system did not support it. All the doctors, however, expressed interest in the codification of their clinical expertise and indicated their readiness to embrace this strategy of managing knowledge if resources such as computers and access to credible scientific journals are made handy to them. A doctor had this to say:

> *"Most of us do applaud evidence-based medical practice; we were trained to accept it. But as to weather we keeping to it, is a different question. We are doing our best within the constraints surrounding our work."*

Another doctor made the comment below:

> *"Evidence-based medicine though fine on paper, its practice can be hell given the resources we have available to support it. Evidence-based medicine thrived on availability of reliable relevant technology, which we largely lack in the dispensation of our services. A significant practice of evidence-based medicine, though relevant, we are yet to embrace it fully. But we are on course & believe we will be there one day soon hopefully. There are enough signs on the ground in support of my assertion like installation of internet connectivity, though unreliable, it is a way forward."*

It also became evident that the doctors relied on available medical journals to inform themselves of medical expertise & clinical experience from elsewhere. Excessive demands at work, they expressed, limit them to take full advantage of these journals. They however could not access all the journals they needed because of the high subscription cost involved. Such cost, though could be reclaimed, many doctors did not do so because of the numerous administrative hurdles entailed in securing the refund. Clearly, there is no institutional or official policy in place to support effective knowledge management in clinical decision-making, a condition critical in the successful practice of evidence-based medicine.

In line with the theory of communicative action, the doctors were asked about their position on the involvement of patients' in making clinical decisions and whether there are laid down rules in ensuring a mutual use of explicit & tacit knowledge possessed by doctors and patients respectively in clinical decision-making. It was unanimously expressed by the doctors that patients' tacit knowledge should not be extensively involved in the process of making clinical decisions because of their limited and most often erroneous and questionable medical and health viewpoints. This viewpoint contradicts the tenet of the evidence-based medical paradigm, which recognized patients' tacit knowledge as critical in making effective clinical decisions. The following comments were among the views generally expressed by the doctors with regards to the use of patients' tacit knowledge in clinical decision-making:

> *"At best we listen to patients in order to know their concerns, but can hardly use their often distorted, superstitions and unempirical knowledge about their health in clinical decisions. We aren't there yet."*

> *"Patients' largely do not know anytime about medicine for their inputs to play a role in clinical decision-making. We do listen to their needs & I think it should end there for now, till patients' are well informed enough to play a major role in clinical decision-making."*

The doctors, however, believed that health care delivery could potentially be improved significantly with the involvement of patients in clinical decision making. This notion is premised on the assumption that patients, all other things being equal, will embrace & actively adhere to clinical directives if their inputs are sought in making decisions about their health. Active involvement of patients in clinical decisions could also provide clinicians with a platform to learn about what patients know about their health and counsel them appropriately.

This revelation shows that whereas evidence based medical practice has proceeded with active involvement of the patients in making clinical decisions in the developed world, the situation is different in the developing world where medical staff are suspicious of the tacit knowledge possessed

by the lay public. In the developing world, therefore, evidence-based medical practice can only be given a real meaning if the public becomes more enlightened on health and medical issues to enable them participate actively in clinical decision-making affecting them.

From the patients' perspective, there was a mixed reaction with regards to their stance on their involvement in clinical decision making. More than half of the respondents believed strongly that clinical decision making should be a sole prerogative of doctors because of the complex nature of medical expertise. A patient has this to say:

> *"What do we know to be part of clinical decision-making? Doctors are the ones trained to do that, so that decision has to be left for them. It is in our own interest to stay out of it."*

Very few respondents, however, shared the contrary view, claiming the need for patients to be central in clinical decision making because such decisions affect them directly. They were quick, however, in adding that the esoteric nature of medical expertise makes it necessary for doctors to take control of the clinical decision making process, with the inputs of patients being sought as the basis upon which the ultimate decisions are premised. Public education and enlightenment on health and medical issues, therefore, becomes critical if the public are to play any meaningful role in the health care delivery process. A respondent who applaud the active rather than passive involvement of patients in clinical decision-making passed this comment:

> *"Clinical decisions are about the well-being of patients and as such should be involved in the decision-making. It is an insult to say that patients are uninformed about medicine and for that matter should be excluded. I know the basics about my health & feel confidents in diagnoses where my input is recognized. I believe many other patients share my view."*

The concept and practice of evidence-based medicine is confronted with mixed reviews from the public. Whereas there is excitement from those in the academic and research worlds, there is suspicion from those in the "real world," who find the evidence-based medicine impractical in a busy medical office or hospital with a very high workload for doctors and other clinicians. However, evidence-based medicine is doable in the developing world if only governments can resource the health care industries to take advantage of the large availability of database of medical research, a wealth of new evidence-based resources, the rise of "information mastery" and access to information via the Internet. The section following will discuss what needs to be done in creating an enabling environment by governments, health care providers, and the general public in order to take maximum advantage of the evidence-based resources abound in contemporary knowledge-based society.

7. Discussion of knowledge management in clinical decision-making

Quality health care delivery is contingent upon the adoption of the right strategy of managing knowledge commensurate with the dominant form of knowledge informing clinical decision-making. Ensuring effective knowledge management in support of doctors' decision-making, therefore, requires that health care organizations adopt a knowledge management strategy to guide the various knowledge processes. There are many approaches to the development of knowledge management strategies in organizations; there is no one size that fits all. The key is for organizations to align their knowledge management strategies with overall organizational strategies and goals. The evidence-based medical practice is one of the feasible strategies that have been adopted to maximize knowledge use in doctors' decision-making. This paradigm of knowledge management, though has been widely embraced in the advanced world for almost two decades, it is yet to become entrenched in the developing world. The fitness of the evidence-based medical practice in the health care system in Ghana is discussed hereafter.

As stressed prior, the evidence-based medical practice thrives on the use of both explicit and tacit knowledge forms by doctors and patients respectively. These forms of knowledge, however, are not utilized in equal proportions in clinical dispensation. The esoteric nature of medical expertise clearly establishes explicit knowledge form as the main reference in clinical decision-making. The use of patients' tacit knowledge form in doctors' decision-making, therefore, becomes peripheral. This revelation largely undervalues the role of tacit knowledge in clinical decision-making. Hence the need to harness both forms of knowledge in clinical decision-making, but of course with more emphasis on the dominant form of knowledge, which indubitably is explicit knowledge in the case of clinical decision-making.

From the Habermasion communicative action theory, therefore, it could be inferred that communicative rationality in clinical decision-making is attainable only when the communicative action engaged in by patients and doctors is premised upon mutual respect for each other's inputs. Such a communicative rationality is based not only on scientific evaluation of what is rational, but also on socially deterministic values that patients' bring to the table.

Evidence-based medical practice to be a reality rather than a myth demands an institutionalization of an explicit or official policy on knowledge management. Though the Ghana health care system can brag of having various forms of knowledge management practices in place, the absence of an explicit policy guiding such practices negates the benefits associated with them. Knowledge management policy is critical in spelling out in clear terms the overall objectives of the evidence-based medical practice, the knowledge management forms, strategies and practices to be adopted, and the role to be played by the health care staff and policy makers in support of the paradigm.

7.1 Nurturing evidence-based medical practice

Following the analysis of the knowledge management practices currently being adhered to by doctors; it is evident that codification knowledge management strategies feature more prominently than personalization knowledge management strategies in clinical decision-making. Since codification knowledge management strategies ensure re-use of explicit knowledge by capturing, codifying, classifying and making available knowledge to support routine clinical decision-making, the availability of incentives in support of such strategy becomes paramount in the health care system. This is important because codification knowledge management strategies, unlike personalization strategies, need to be carefully and tactically nurtured to maximize its impact in decision-making (Hansen et al., 1999).

The implementation and nurturing of the evidence-based medical practice is dependent upon availability and use of internet and communication technologies to marshal and re-use best clinical practices by doctors. Taking this road, though might be very expensive, the overall pay off in the long-run is huge in ensuring improved health care delivery for all. The use of the internet and communication technologies, in addition to being an important intervention for internally generated knowledge, has the potential also in taking advantage of externally generated knowledge. Clinical best practices identified by doctors elsewhere can be obtained as an add-on to the internally generated clinical knowledge.

Doctors because of the availability and use of the internet and communication technologies can also form communities of practice as a platform to share knowledge and experience on best clinical practice. Even though communities of practice generally emanate voluntarily, they can be deliberately introduced and nurtured in organizations. Cultivating communities of practice among doctors implies that arrangements such as: formal physical, virtual spaces to facilitate free flow of information and organizational motivation for them to belong to such communities are provided.

Further, the online communities of practice can be introduced and nurtured to enable doctors to share best practices not only with colleagues at work, but also with other clinicians all over the globe in support of evidence-based practice. All these, however, are feasible if doctors and other health care providers are retrained and well resourced to maximize the use of computers and internet and communication technologies in search of best clinical evidence in support of their practice. Such training should also be extended to appropriate supporting staff to equip them with the necessary skills and tools in the search and retrieval of relevant knowledge in aid of clinical decision-making. Clinical libraries equipped with the requisite resources - qualified staff, contemporary and top medical journals, computers and internet and communications technologies are critical in providing the enabling condition for evidence-based medical practice to thrive.

7.2 Challenges to effective evidence-based medical practice

Evidence-based medical practice like any paradigm is not impervious to challenges. Adopting it demands commitments on all fronts – government, health care system, and the general public. The government should be willing and ready to provide the needed resources to facilitate the paradigm. Further, there is the need for education on the rationale of the paradigm to be spelt out cogently to all the stakeholders within the health care industry, particularly doctors, who largely doubt the contribution the lay public can make into health care decision-making.

In order to ensure that the public participate actively in the evidence-based medical practice, they should be well educated on common health issues affecting them and also be empowered to form communities of practice to share what they know and feel about their health. This will encourage patients to be more confident to bring their tacit knowledge to bear in clinical decision-making. Health promotion and education, therefore, becomes paramount in order to address the limited access to medical information by patients. Health promotion, as an indirect requisite of the evidence-based medical practice, has the potential to bring about a healthy society and ultimately helps to minimize the ever escalating health care cost in the country.

8. Conclusion

So far, it has been made explicit that evidence-based medical practice is doable in Ghana. Embracing this strategy of managing knowledge in health care dispensation holds the potential to bring about improved health care delivery, and also flatten somehow the knowledge base in health care decision-making, which has long been vilified by many social control theorists as a one-sided rationalization based primarily on explicit knowledge with patients tacit knowledge grossly back dropped. Though the knowledge base of patients, generally in the Ghanaian context as a developing country is not so strong, ignoring evidence-based medical practice because of that could be detrimental to overall health care improvement in the country. Ensuring evidence-based medical practice in Ghana and the rest of the developing world demands that patients and communities are empowered to take the centre stage in the delivery of health care services. This will significantly enhance the communicative actions between doctors and patients in such a way that knowledge from these two parties could be harnessed in an unconstrained manner towards effective clinical decision-making for better health care outcomes for all.

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