

Beyond the Organisational Boundaries: Identifying External Barriers to Patient-centred Healthcare Knowledge Sharing

Ruhua Huang¹, Wanxin Deng¹, Lihong Zhou¹, Yi Tang¹, Miguel Baptista Nunes²

¹School of Information Management, Wuhan University, China

²Information School, The University of Sheffield, UK

Abstract

This paper reports on a secondary analysis of a previously completed case study that aimed to investigate knowledge sharing (KS) in Chinese hospitals. Specifically, the secondary analysis aims to identify, qualify and theorise external barriers that prevent and hinder patient-centred KS in healthcare organisations. The analysis revealed that healthcare KS is strongly influenced and hindered by five external barriers: social belief and preference, the influences of Chinese culture traits, healthcare education structure, political decisions, and economic environment and constraints. Moreover, the findings suggest that these external barriers cannot be overlooked in KS implementation and operation in healthcare organisations and should be carefully assessed beginning in the early stages of KS design and strategic planning. Based on the secondary analysis, this paper proposes a preliminary conceptual model that can be adopted as a theoretical basis for more focused investigations in future studies.

Keywords: Case study; External barriers; Healthcare knowledge sharing; Qualitative secondary analysis

doi: 10.9776/16207

Copyright: Copyright is held by the authors.

Acknowledgements: This paper is supported by the National Natural Science Foundation of China (Project No. 71203165).

Contact: Lihong Zhou (L.zhou@whu.edu.cn)

1 Introduction

Knowledge has become crucial to providing good and efficient healthcare services to patients. Appropriate processes of knowledge sharing (KS), based on good practices of knowledge creation, storage, transfer and utilisation, are fundamental to resolve daily medical problems that challenge healthcare professionals (Abidi, 2007; Nicolini et al., 2008; Zhou and Nunes, 2012). KS can dramatically promote the quality of specialty-based clinical practices and thus substantially improve the quality of patient care and services (Ryu, 2003; Van Beveren, 2003; Nicolini et al., 2008).

In the current patient-centred healthcare environment, KS is a fundamental basis for the provision of patient services (Maizes et al., 2009). As asserted by Zhou and Nunes (2012), to constantly ensure and protect the centeredness of the patient in all healthcare services, it is essential for healthcare professionals to communicate and share professional and patient knowledge with each other. Thus, the purpose of the patient-centred KS is to constantly protect the needs, requirements, and benefits of the patient throughout the entire healthcare process and in all healthcare procedures (Maizes et al., 2009; Zhou and Nunes, 2012).

However, despite a wide recognition of the importance and value of KS, its implementation and practice in healthcare organisations is very problematic. A number of studies have investigated healthcare KS and have reported a number of problems and barriers (e.g., Van Beveren, 2003; Riege, 2005; De Brún, 2007; Currie et al., 2007; Nicolini et al., 2008; Lin et al., 2008; Zhou and Nunes, 2012). Nevertheless, it is important to highlight that the existing healthcare KS research mainly concentrates on problems and barriers within the organisational environment. External barriers to healthcare KS have not been systematically investigated and theorised.

The research reported in this paper aims to identify, discuss and theorise external barriers to healthcare KS through a secondary analysis of interview data that were originally gathered in a previously completed research study. To clearly present the processes and the findings of the analysis, this paper is structured as follows. The next section (Section 2) presents a literature review. Section 3 describes the analysis methods and processes. Section 4 describes the background and emergent findings from the original case study. Section 5 focuses on presenting and discussing the findings from the secondary analysis. Finally, Section 6 and 7 presents the conceptualisation of the research findings as well as the conclusion.

2 Literature Review

A literature review was performed at the beginning of the secondary analysis and served two main purposes: (1) to confirm the proposed research gap and objective; and (2) to provide a theoretical basis for the secondary analysis. The literature review consisted of two areas of interest, namely, healthcare KS, and barriers to healthcare KS.

2.1 Healthcare Knowledge Sharing

KS is an effective strategy to establish competitive advantages for all types of organisations by ensuring that existing knowledge is effectively distributed within or across organisational boundaries (McEvily, 2000). Therefore, KS is an essential foundation for enhancing organisation performance (Smith-Jentsch et al., 2005; Srivastava et al., 2006; Kim et al., 2012) and is critically important to achieve organisational objectives and goals (Grant, 1996).

In the business environment, KS can be simply understood as the behaviour of making knowledge available to others (Ipe, 2004). More specifically, Lee (2001) further defines KS as the activity of transferring or disseminating both explicit and tacit knowledge between people, groups and organisations. Lilleoere and Hansen (2011) argue that KS is much more complex and can be conceptualised as combined processes of knowledge creation, storage, retrieval and dissemination. KS, which originated in business sectors, is increasingly being applied to public sectors and more recently to healthcare organisations (Plaice and Kitch, 2003).

Within healthcare organisations, there is a universal perception that appropriate processes of KS, based on good practices of knowledge transfer and utilisation, are fundamental to resolve daily medical problems challenging healthcare professionals and, more importantly, can dramatically improve the quality of healthcare services (Zhou and Nunes, 2012). Ryu et al. (2003) claim that healthcare KS can be simply defined as “the degree to which physicians actually share their knowledge with their colleagues for professional tasks”. A much more comprehensive definition for healthcare KS is provided by Abidi (2007), stated as follows:

“Healthcare knowledge sharing can be characterised as the explication and dissemination of context-sensitive healthcare knowledge by and for healthcare stakeholders through a collaborative communication medium in order to advance the knowledge quotient of the participating healthcare stakeholders” (Abidi, 2007: 69).

This definition pinpoints five key elements for healthcare KS: (1) what to share: context-sensitive healthcare knowledge in both explicit and tacit forms; (2) how to share: through the processes of knowledge explication and dissemination; (3) who it may concern: healthcare stakeholders, which may include patient and relative, healthcare professionals, management of healthcare organisations, governmental healthcare management agencies, etc.; (4) communication channel: collaborative communication media; and (5) why to share: advancing the knowledge quotient.

2.2 Barriers to Healthcare Knowledge Sharing

The implementation and practice of KS in healthcare organisations are not without problems. It has been widely reported that healthcare KS is very complex and often fraught with various types of barriers (Nicolini et al., 2008; Zhou and Nunes, 2012). In the existing body of healthcare KS literature, problems for healthcare KS are often investigated within the scope of specific healthcare organisations (Van Beveren, 2003; Nicolini et al., 2008; De Brún, 2007). The existing literature points to a number of well recognised barriers, such as poor individual relationships (Gabbay and Le May, 2004; Nicolini et al., 2008; Lin et al., 2008; Bordoloi and Islam, 2012), lack of trust (Ryu et al., 2003; Zhou et al., 2015), desire to retain professional power and status (Currie and Suhomlinova, 2006; Currie et al., 2007; Bar-Lev, 2015), lack of conducive KS culture (Lin et al., 2008; Karamitri et al., 2015), lack of motivation and reward (Karamitri et al., 2015), lack of absorptive capacity (Lin et al., 2008; Zhou and Nunes, 2012), lack of strong KS leadership (Kim et al., 2012; Karamitri et al., 2015) and inappropriate technological infrastructures (Bordoloi and Islam, 2012; Maiga and Mutuwa, 2015).

It is very important to highlight that these organisational KS barriers are linked directly or indirectly to the external environment (Vajjhala and Hassan, 2013), such as the influence of national culture on the perceptions and beliefs of an individual. Furthermore, Martin-Rodriguez et al. (2005) note three types of external influences that may obstruct necessary healthcare collaboration and communication, namely social influences, cultural influences and educational influences.

- Social influences relate to how power distribution, imbalance and disparate professional and social status are expected and accepted by individual healthcare professionals. Power equality

between professionals is a basic characteristic for collaborative practice and KS (Martin-Rodriguez et al., 2005). For example, as reported in Lin et al. (2008), power disparity is one of the principal barriers preventing KS.

- Cultural traits and values can have an impact on healthcare KS. As asserted by Martin-Rodriguez et al. (2005), in healthcare practices, a strong cultural affinity for autonomy tends to foster and support individualism and specialization, which can hinder and prevent KS. Nevertheless, a strong collectivist culture is more conducive and encouraging for active collaboration and spontaneous KS.
- Educational influences relate to the healthcare education system, which provides the principal lever for promoting collaborative values and for encouraging KS. Martin-Rodriguez et al. (2005) claim that, in current healthcare education, students have become specialized and have been granted a clear professional identity that falls within the boundaries of their respective healthcare professions. Thus, members of each profession know very little of the practices, expertise, responsibilities, skills, values and theoretical perspectives of healthcare professionals in other disciplines. This is considered to be one of the main obstacles to collaborative practices and KS.

In addition, the existing literature reveals that political influences can cause problems for organisational KS. In a research study performed by Currie and Suhomlinova (2006), overly intruding political forces, inappropriate governmental decisions and regulations were identified as strengthening organisational and professional boundaries, and hence they prevent active collaboration and necessary communication between healthcare professionals. Similarly, Addicott et al. (2006) identified that over-management and political interference were major barriers to healthcare KS. It was found in their study that KS is marginalised by strong political interferences, the requirements of achieving government goals, performance indicators and targets, as well as tight adherence to government protocols.

3 Methods and Processes for the Secondary Analysis

In light of the main aim of this paper, which is to identify, discuss and theorise external barriers to healthcare KS, three research questions were formulated to orient the analysis processes:

- What are the external barriers to healthcare KS?
- How do external barriers affect healthcare KS?
- How can the research findings be theorised and become a basis for future studies?

To respond to these questions, a previously completed research study was adopted as a base case study. This study was originally designed to identify and qualify KS barriers in the collaborative patient services of Traditional Chinese Medicine (TCM) and Western Medicine (WM) healthcare professionals in Chinese hospitals. In this project, 46 doctors, nurses, hospital managers, patients and relatives were approached and interviewed. All 46 interviews were included in the secondary analysis and analysed using a thematic approach.

A thematic analysis can be simply understood as a systematic approach to coding and representing qualitative data (Chen et al., 2011). Data in this case refers to the interview transcripts. Coding means the identification and interpretation of themes and sub-themes in the data. Representation signifies the development of conceptual maps that visualise and summarise the themes identified by the researchers and organise them in a meaningful and useful manner. Specifically, in this study, data were examined and interpreted, coded and constantly compared against themes and concepts that emerged from an a priori theoretical framework (Chen et al., 2011).

A thematic analysis usually starts by developing an appropriate theoretical framework, which becomes the basis for the analysis by providing an initial set of preliminary codes (King, 2008). In this secondary analysis, a theoretical framework was developed through the critical literature review. The framework consists of five key themes, namely social belief and preference, culture traits and values, healthcare education structure, political decisions, and economic environment and constraints.

Furthermore, as highlighted by King (2008), these a priori themes can only be considered and adopted as preliminary and tentative. In thematic analysis, the practice of coding should be “grounded” in data, which means that preliminary codes may be modified or even discarded altogether if they do not prove to be useful or appropriate to the actual data examined.

In this secondary analysis, the practice of data analysis employed two commonly used qualitative analysis techniques, coding (open, axial, and selective) and constant comparative analysis, as proposed by Strauss and Corbin (1998). Moreover, the utilisation of both techniques was facilitated by a qualitative data analysis software, Atlas.Ti 7. The analysis was considered complete when the theoretical saturation was achieved, that is, when no new open codes emerged from the analysis of interview data.

4 Description of the Base Case Study

4.1 Background Description

The Chinese healthcare system incorporates two entirely different medical philosophies: Traditional Chinese Medicine (TCM) and Western Medicine (WM). TCM has been a consistent element of the Chinese culture (Wong et al., 1993) and was developed as a result of the accumulation of experiences and medical practices for over 2300 years (Cheng, 2000). Hyatt (1978) asserts that TCM is not just “folk” medicine, but a highly developed art and science. However, at the beginning of the twentieth century, TCM lost the dominant position it held over the Chinese public health system for thousands of years to WM. WM, based on the scientific paradigm and evidence-based practice, was developed in Europe and North America after the industrial revolution and is largely considered as the main component of today’s Chinese healthcare system, despite its coexistence with TCM (Chi, 1994). Since the 1950s and by the request of the central government, the two medical professional communities have been both required and encouraged to collaborate with each other.

Despite the political nature of the decision to create this interprofessional relationship, and through decades of co-existence and interprofessional interaction, the two types of healthcare professionals have formulated a complementary relationship and conditions, which allow collaborative works and provision of patient services against a number of diseases deemed to be untreatable solely by either type of doctors (Fruehauf, 1999; Taylor, 2004; Hyatt, 1978).

Beginning in 2004, to ensure successful implementation of the patient-centred healthcare policy also imposed by the central government, these two very different healthcare professional groups were required to communicate and share knowledge about individual patients. This KS aims to protect the needs, interests and benefits of patients, as well as to guarantee that the patient is at the centre of the collaborative processes. However, the two medical communities do not coexist harmoniously and do not readily communicate and share knowledge with each other. There are barriers hindering the processes of KS between TCM and WM healthcare professionals.

Therefore, the base study aimed to identify barriers to KS between the two types of healthcare professionals in the context of Chinese hospitals. The study adopted a Grounded Theory approach as the overarching methodology to guide the analysis of the data collected in a single case-study design. A public hospital in central China was selected as the case-study site, at which 46 informants were interviewed using semi-structured and evolving interview scripts. All 46 interview-transcripts were included in the secondary analysis.

Gender	Number of Participants
Male	24
Female	22
Professional Position	
Senior Neurosurgeons	4
Junior & Middle-Level Neurosurgeons	10
Neurosurgical Nurses	12
Senior TCM Doctors	5
Junior & Middle-Level TCM Doctors	2
Orthopaedics Doctor	1
Chief Hospital Manager	1
Hospital ICT Manager	1
TCM Educator	1
Local Healthcare Politician	1
Patient & Relatives	8

Table of Demographic Profile of Participants (N=46)

4.2 Central Findings from the Original Data Analysis

The analysis of the interview transcripts revealed that KS is primarily prevented by very evident inter-professional tensions between the two medical communities, namely philosophical tensions and professional tensions.

- The philosophical tensions are caused by the substantial divergence in philosophies, theoretical basis and conceptual systems of TCM and WM. These tensions have resulted in conflicts of opinions and perspectives, which in turn have created a climate of distrust, disregard, and unwillingness to communicate between the two communities. In addition, the philosophical

tensions result from a lack of interprofessional common ground to facilitate communication and KS. The lack of interprofessional common ground is caused by a lack of interprofessional education in the Chinese healthcare education and by the dearth of interprofessional training in the hospital environment.

- The professional tensions result from the substantial asymmetries of power and professional standings between the two medical communities. As shown in the data collected, in collaborations between TCM and WM, WM doctors usually have relatively higher professional standings and have almost dominant power over patients. The professional tensions have caused strong professional competition and rivalry, reinforce the philosophical tensions and distrust, and actively prevent and hinder necessary patient-centred KS.

5 External Barriers Identified in the Secondary analysis

The secondary analysis identified five external barriers to KS: social belief and preference, cultural values, healthcare education structure, political decisions, and economic environment and constraints. All of these external barriers have reinforced the philosophical and professional tensions between TCM and WM healthcare professionals.

5.1 Social belief and preference

The analysis identified an evident social preference for WM and, at the same time, a decrease in the belief in traditional healing philosophy. As revealed in the data, WM not only “*works faster on patient’s problem*” (WM Doctor 24.17), but is also seen as “*a product of state-of-the-art scientific technologies and is practiced based on accurate test result and evidence*” (WM Doctor 45.29). Meanwhile, TCM is accepted as “*a classic legacy that had been evolving throughout thousands of years of Chinese history*” (WM Doctor 14.11). However, when compared with WM, it is perceived as “*old and less effective*” (TCM Doctor 16.42) and thus is “*less trusted and less used by the general public*” (TCM Doctor 17.29). Therefore, many interviewed healthcare professionals claimed, “*patients always chose WM as their first choice and usually consider to visit a TCM doctor, when WM is not as effective as expected, or failed*” (WM Doctor 1.25). The patient relatives interviewed confirmed the social preference for WM, for instance:

“TCM is entirely based on experience. Therefore, it is not very accurate. It is almost impossible [to be accurate]. WM is different. WM doctors rely on equipment and tests. They have visible evidence. I think WM is more reliable” (Patient Relative 45.29).

Furthermore, the data collected highlight several recent public incidents in which people appealed to formally exclude TCM out of the national healthcare services. It is because, as WM doctors asserted, “*TCM in the modern scientific view is unscientific*” (WM Doctor 12.22) and is sometimes seen as “*an ancient superstition without a solid scientific basis*” (WM Doctor 6.44). These social incidents not only triggered a nationwide dispute concerning the legitimacy of TCM but also implied a severe social distrust toward the traditional therapy.

Although TCM still exists in the current Chinese healthcare system and remains widely used by Chinese people, this evident social preference for WM has created a pessimistic attitude among TCM professionals and has reinforced the interprofessional tensions and mistrust. Therefore, social belief and preference is identified as an external barrier to KS.

5.2 The Influences of Chinese Culture Traits

It has become clear that Chinese culture traits have influenced the behaviour of KS in the interprofessional works between TCM and WM professionals. Specifically, two Chinese culture traits have emerged as barriers to KS, namely, collectivism, and power distance.

According to Hofstede and Hofstede (2005), China is a typical and highly collectivist society where people are integrated early into strong and cohesive in-groups in which ties between individual members are tightly knitted and in which people act in the interests of the group and not necessarily of themselves. The collectivist culture trait is clearly presented in the interview data. As stated by the interview informants, KS is “*more likely and more natural*” (TCM Doctor 35.112) within their own respective communities but “*not easy*” (TCM Doctor 35.113) across professional boundaries and with healthcare professionals who are considered as out-groups.

Moreover, a very clear professional power distance has emerged from the secondary analysis. Power distance is related to the fact that all individuals in a society are not equal. As defined by Hofstede and Hofstede (2005), power distance is the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally. The analysis found

that due to the relatively higher professional power of WM doctors, they often explicitly instruct and regulate *“what we want you TCM doctors to do about the patient”* (WM Doctor 2.140). Comparably, TCM doctors have lower professional standings and hold relatively less power. Thus, TCM doctors are most likely to maintain a passive position when collaborating with WM practitioners, *“to avoid any confrontations and to follow instructions”* (TCM Doctor 16.17), instead of actively and voluntarily proposing their ideas, understandings and suggestions. This occurs because, as asserted by a TCM interviewee, *“it is unlikely they [WM professionals] would take our [TCM professionals] propositions and comments very seriously”* (TCM Doctor 35.71).

Furthermore, it is worthwhile to note that nurses are the healthcare professionals closest to patients, the ones who interact with patients regularly and take care of patients daily. Therefore, these nurses usually have a better understanding of the needs, requirements and expectations of patients. However, the data collected show that the hierarchical power structure in Chinese hospitals determines that nurses possess an even lower professional standing and usually expect to follow orders from doctors. In this case, nurses very rarely propose ideas and suggestions. All of the knowledge obtained by nurses is most probably lost, never transmitted to doctors.

“We after all are just nurses. Doctors are responsible to make any decisions. Then, we just work on those decisions” (WM Nurse 31.13).

5.3 Healthcare education structure

The Chinese healthcare HE consists of two parallel and almost insulated educational systems, one for TCM practitioners and the other for WM ones. In both systems, very limited interprofessional courses, lectures and practical sessions are provided on the possible overlap of the healthcare systems. Therefore, there is virtually no education to support interprofessional collaboration and communication. In this case, students from either system have very limited mutual knowledge and interprofessional common ground and more importantly lack motivation for interprofessional collaboration and communication.

Moreover, as claimed by many interviewed informants, *“WM universities are more attractive to medical university applicants”* (WM Doctor 19.51). Through the secondary analysis, a strong social preference for WM education has emerged and probably has been caused by the social preference for WM, as discussed previously.

“One would most likely apply to a WM university and would only consider applying to a TCM university when the application to a WM university is unsuccessful” (WM Doctor 19.53).

Some interviewees asserted that WM universities are much more popular because *“these universities usually receive more political attention and support, have much better resources and facilities”* (TCM Doctor 9.29) and *“WM graduates can have much better career opportunities”* (WM Doctor 1.34). Comparably, TCM universities are relatively less attractive, not only because *“they [TCM universities] are much less supported politically”* (WM Doctor 21.23) but also because *“it has becoming increasingly hard to find a TCM position in respectable hospitals nowadays”* (WM Doctor 34.21).

The existing Chinese healthcare HE has created two completely heterogeneous professional communities with evident professional boundaries and distance, disparate professional identities and standings, which become significant barriers to healthcare KS.

5.4 Political decisions

Political issues and viewpoints were not originally within the scope of this data collection. Political influences, however, became eminent in the data and emerged as barriers to KS.

According to the interview informants, the Chinese central government formulated two very clear and high-level political statements claiming that *“TCM and WM should be equally treated and supported”* (TCM Doctor 4.24) and *“WM is the primary and complemented by TCM”* (WM Doctor 7.59). As perceived, the Chinese central government aimed to maintain the coexistence and the complementary relationship between TCM and WM communities in the national healthcare services. Naturally, these high-level political statements and decisions are expected to be followed and implemented.

However, the analysis noted that these national healthcare policies have not been truly implemented and, in fact, have little effect on the real healthcare practices. The data collected revealed that the main reasons are the absence of *“specific and detailed plans for the actual implementation”* (WM Doctor 17.31) and *“lack of appropriate supervision from the government”* (TCM Doctor 14.73).

“These political statements really means very little to the management in each hospital and to the healthcare professionals and their healthcare practices” (TCM Doctor 12.80).

As shown in the data, instead of following these high-level political orders, hospital management may have been influenced more by another political decision.

5.5 Economic environment and constraints

Market Economy Policy (MEP) is probably one of the most important policies and political decisions implemented by the Chinese central government in recent decades. MEP, announced and implemented in 1978, has resulted in a significant market reformation from the 'traditional communist planned' economy into a new 'socialist' market economy. Since then, the MEP implementation has been proven as successful and has substantially boosted the Chinese economy.

However, with the explosive economic development in China, the existence of the TCM community has become very difficult. As designed in MEP, the central government significantly reduced public funds for healthcare. Healthcare organisations and practitioners are expected and forced to generate their own financial revenue, mainly through patient charges based on the provision of health services. In this case, hospital management is pressed to give more attention to controlling operational costs and maximising income.

The secondary analysis revealed that *"hospital management is more likely to provide more supports to those departments, which can generate large financial incomes"* (TCM Doctor 4.61). As stated by interview informants, because *"TCM service, treatment and herbal medication are usually very cheap"* (15.71), TCM departments are *"usually below hospital average"* (WM Doctor 5.34).

"I think under the Market Economy, they [TCM doctors] have no way out of this. But I am sure the central government supports TCM. I think, because the Market Economy has a huge impact, it [the TCM Department] cannot survive. Their [TCM] treatments are very cheap" (WM Doctor 9.36).

By comparison, because WM departments usually can generate considerably more revenue, they are well supported by the hospital management. It is worthwhile to note that several interviewed TCM doctors claimed that because TCM doctors cannot produce large amount of income, not only *"our [the TCM] department is almost neglected by the hospital management"* (TCM Doctor 4.61) but also *"the average salary for TCM professionals are much lower than practitioners in WM, this is an undeniable truth"* (WM Doctor 36.83).

Therefore, it has become clear that the implementation of MEP has generated significant impacts and constraints on Chinese healthcare services. In the scope of this study, the external economic influences have reinforced the imbalances of professional power and standings between TCM and WM healthcare professionals, intensified the interprofessional tensions, boundaries and rivalry, and actively demotivate and discourage both types of healthcare professionals from communicating and engaging in KS with each other.

"It [The TCM department's lack of management support] is a very big topic and is related to the national policy. Because hospitals receive very little financial supports from the government, the hospitals need to survive. To those managers, really, the patient care quality is not really important. Well, the hospital managers probably would deny this, but what they are concerned about is finance. So, they just do not support the TCM departments. If you survive, you survive. If you die, you die" (TCM Doctor 4.27).

6 Discussion and Conceptualisation of Secondary Analysis Findings

Through further analysis and conceptualization, a conceptual model is developed, as shown in Figure 1.

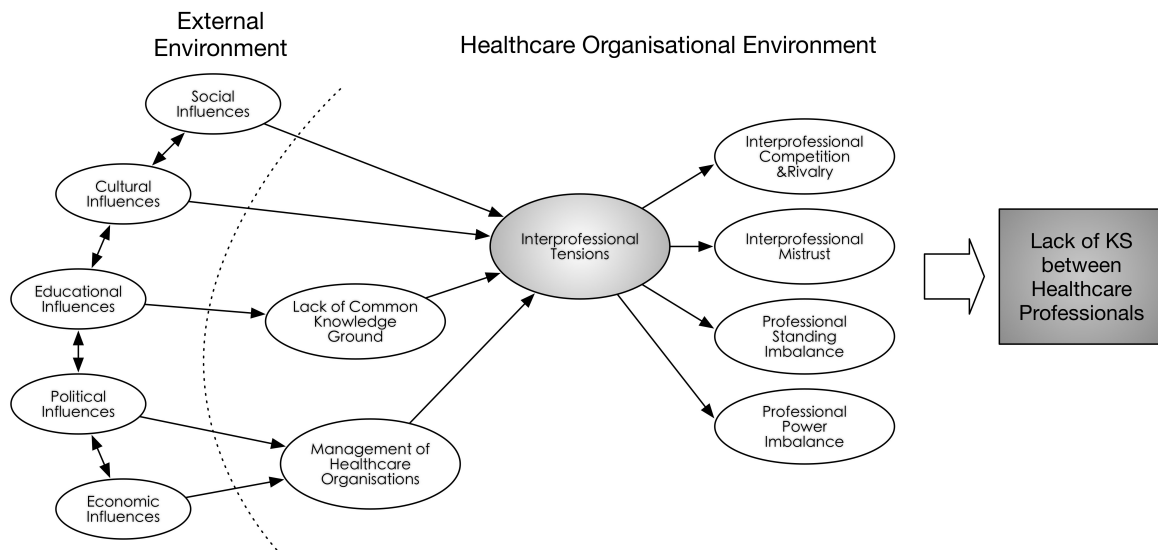


Figure 1. KS External Barrier Model Derived from the Secondary Analysis

As shown in Figure 1 and according to the analysis, the conceptual model indicates that the healthcare organisational environment is closely related, constantly influenced and constrained by the external environment. Through the conceptualisation processes, three organisational barriers have emerged as intermediary between the internal and external organisational environments. These three barriers are interprofessional tensions, management of healthcare organisations, and the lack of common knowledge.

The interprofessional tensions have emerged as the central barrier to healthcare KS and result in four other organisational KS barriers, namely interprofessional competition and rivalry, interprofessional mistrust, professional standing imbalance, and professional power imbalance. Therefore, to improve KS, strong efforts should be made to identify and resolve the interprofessional tensions. This can be achieved by articulating and implementing specific management strategies designed to increase interprofessional common knowledge and mutual acquaintance, as well as to generate mutual trust and respect between heterogeneous professional groups.

In addition, to encourage healthcare KS, it is critical to increase interprofessional common knowledge ground between various professional groups. This can be achieved by embedding and increasing interprofessional programmes, courses and practical sessions in different specialised medical education programmes and educational institutions. More effectively, the short- and medium-term changes need to be carried out at the hospital level by establishing very specific interprofessional training schemes and activities.

Furthermore, the management of healthcare organisations is the key to implementing and promoting KS, not only through making appropriate management decisions and cultivating a KS-conducive organisational environment and culture but also by carefully identifying and assessing negative external influences and barriers that may hinder the KS activities within the organisational environment.

7 Conclusion

This paper explores, identifies and discusses the external barriers to healthcare KS. Specifically, the external KS barriers were identified through a secondary analysis of the interview data, which were originally collected in a previously completed healthcare KS research project. The analysis pointed to five KS external barriers: social belief and preference, culture values, healthcare education structure, political decisions, and economic environment and constraints.

The findings of the secondary analysis suggest that in addition to identifying and resolving organisational KS barriers, the management of healthcare organisations should closely monitor the dynamism between the internal and external environments. It is very important to identify, mediate and mitigate KS external barriers at early stages of KS design, planning, implementation and evaluation. Certainly, all solutions must be supported by the management of healthcare organisations, who need to

realise that KS is truly an effective strategy to promote the quality of healthcare services and to maximise benefits for the patient.

Nevertheless, the research findings reported in this paper are limited by the single case study design for the analysis and the exclusive use of secondary data. Therefore, the research findings and the conceptual model proposed are considered preliminary and can be adopted as a theoretical base for more focused investigations in the future. Future research can focus on either further extending or validating and testing the conceptual model proposed.

8 References

- Abidi, S. (2007). Healthcare knowledge sharing: purpose, practices, and prospects. In Rajeev K. B. & Ashish N. D. (Eds.), *Healthcare knowledge management: Issues, advances, and successes* (pp. 67-86). New York: Springer.
- Addicott, R., McGivern, G., and Ferlie, E. (2006). Networks, Organizational Learning and Knowledge Management: NHS Cancer Network. *Public Money & Management*, 26(2), 87-94.
- Bar-Lev, S. (2015). The politics of healthcare informatics: knowledge management using an electronic medical record system, *Sociology of Health & Illness*, 37(3), 404-421.
- Bordoloi, P., and Islam, N. (2012). Knowledge Management Practices and Healthcare Delivery: A Contingency Framework, *The Electronic Journal of Knowledge Management*, 10(2), 110-120.
- Chen, H., Nunes, M., Zhou, L., and Peng, G. The Role of Electronic Records Management in Information Systems Development: Gathering, Recording and Managing Evidence of Crucial Communication and Negotiations with Customers. *Aslib Proceedings*, 63 (2/3), 168 - 187.
- Cheng, J. (2000). Review: Drug Therapy in Chinese Traditional Medicine. *Journal of Clinical Pharmacology*, 40(5), 445-450.
- Chi, C. (1994). Integrating Traditional Medicine into Modern Health Care Systems: Examining the Role of Chinese Medicine in Taiwan, *Social Science & Medicine*, 39(3), 307-321.
- Currie, G., and Suhomlinova, O. (2006). The Impact of Institutional Forces upon Knowledge Sharing in the UK NHS: The Triumph of Professional Power and the Inconsistency of Policy. *Public Administration*, 84(1), 1-30.
- Currie, G., Finn, R., and Martin, G. (2007). Spanning Boundaries in Pursuit of Effective Knowledge Sharing within Networks in the NHS. *Journal of Health Organisation and Management*, 21(4/5), 406-417.
- De Brún, C. (2007). Knowledge Management and the National Health Service in England. In: Bali, R. and Dwivedi, A. (Eds.), *Healthcare Knowledge Management: Issues, Advances, and Successes*, (pp. 179-188). New York: Springer.
- Fruehauf, H. (1999). Chinese Medicine in Crisis. *Journal of Chinese Medicine*, October(61), 1-9.
- Gabbay, J., and le May, A. (2004). Evidence Based Guidelines or Collectively Constructed "Mindlines?": Ethnographic Study of Knowledge Management in Primary Care. *The British Medical Journal*, 329(2004), 1013-1017.
- Hyatt, R. (1978). *Chinese Herbal Medicine: Ancient Art and Modern Science*. London: Wildwood House Limited.
- Ipe, M. (2003). Knowledge Sharing in Organisations: A Conceptual Framework. *Human Resource Development Review*, 2(4), 337-359.
- Karamitri, I., Talias, M., and Bellali, T. Knowledge management practices in healthcare settings: a systematic review. *The International Journal of Health Planning and Management*, 30, (Online Early View).
- Kim, Y., Newby-Bennett, D., and Song, H. (2012). Knowledge sharing and institutionalism in the healthcare industry, *Journal of Knowledge Management*, 16(3), 480 - 494.
- Lee, J. (2001). The Impact of Knowledge Sharing, Organizational Capability and Partnership Quality on IS Outsourcing Success. *Information & Management*, 38(5), 323-335.
- Lilleoere, A., and Hansen, E. (2011). Knowledge-sharing Practices in Pharmaceutical Research and Development—a Case Study. *Knowledge and Process Management*, 18(3), 121-132.
- Lin, C., Tan, B., and Chang, S. (2008). An Exploratory Model of Knowledge Flow Barriers within Healthcare Organizations. *Information & Management*, 45(5), 331-339.
- Maiga, G., and Mutuwa, P. (2015). An Integrating Model of Knowledge Management for Improved Pediatric Healthcare Practice. *Journal of Information & Knowledge Management*, 14(2), 1-15.
- Maizes, V., Rakel, D., and Niemiec, C. (2009). Integrative Medicine and Patient-Centred Care. *Explore: The Journal of Science of Healing*, 5(5), 277-289.

- McEvily, S. Das, S., McCabe, K. (2000). Avoiding Competence Substitution through Knowledge Sharing. *Academy of Management Review*, 25(2), 296-311.
- Nicolini, D., Powell, J., Conville, P., and Martinez-Solano, L. (2008). Managing Knowledge in the Healthcare Sector. A Review. *International Journal of Management Reviews*, 10(3), 245-263.
- Plaice, C., and Kitch, P. (2003). Embedding Knowledge Management in the NHS South-west: Pragmatic First Steps for a Practical Concept. *Health Information & Libraries Journal*, 20(2), 75-85.
- Riege, A. (2005). Three-dozen Knowledge-Sharing Barriers Managers Must Consider. *Journal of Knowledge Management*, 9(3), 18-35.
- Ryu, S., Ho, S., and Han, I. (2003). Knowledge Sharing Behavior of Physicians in Hospitals. *Expert Systems with Applications*, 25(1), 113-122.
- San Martín-Rodríguez, L., Beaulieu, M., D'Amour, D., and Ferrada-Videla, M. (2005). The Determinants of Successful Collaboration: A Review of Theoretical and Empirical Studies. *Journal of Interprofessional Care*, 19(Supplement 1), 132-147.
- Smith-Jentsch, K., Mathieu, J., and Kurt, K. (2005). Investigating Linear and Interactive Effects of Shared Mental Models on Safety and Efficiency in a Field Setting. *Journal of Applied Psychology*, 90(3), 523-35.
- Srivastava, A., Bartol, K., and Locke, E. (2006). Empowering Leadership in Management Teams: Effects on Knowledge Sharing, Efficacy, and Performance. *Academy of Management Journal*, 49(6), 1239-1251.
- Strauss, A., and Corbin, J. (1998). *Basic of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. London: Sage Publications.
- Taylor, K. (2004). Divergent Interests and Cultivated Misunderstanding: The Influence of the West on Modern Chinese Medicine. *Social History of Medicine*, 17(1), 93-111.
- Van Beveren, J. (2003). Does Health Care for Knowledge Management? *Journal of Knowledge Management*, 7(1), 90-95.
- Vajjhala, N., & Hassan, M. (2013). Barriers to Knowledge Sharing in Medium-Sized Enterprises in Transition Economies. Active Citizenship by Knowledge Management & Innovation. *Proceedings of the Management, Knowledge and Learning International Conference*.
- Wong, T., Wong, S., and Donnan, S. (1993). Traditional Chinese Medicine and Western Medicine in Hong Kong: A Comparison of the Consultation Processes and Side Effects. *Journal of Hong Kong Medical Association*, 45(4), 278-284.
- Zhou, L., and Nunes, M. (2012). Identifying knowledge sharing barriers in the collaboration of Traditional and Western Medicine professionals in Chinese hospitals: a Case-Study. *Journal of Librarianship and Information Science*, 44(4), 238-248.
- Zhou, L., and Nunes, M. (2015). *Knowledge Sharing in Chinese Hospitals: Identifying Sharing Barriers in Traditional Chinese and Western Medicine Collaboration*. Heidelberg: Springer.