7. Discussion

Chapter 6 presented the research findings and discussed identified barriers to sharing patient knowledge between TCM and WM healthcare professionals. This chapter conceptualises the research findings and presents an integrated model of the final theory. Furthermore, this chapter compares the emerging model with existing KS models, elicits the implications of findings for the reality of practice and contributes to the body of knowledge in the field.

To be more specific, this chapter consists of four main sections: integration of findings, comparison with existing models, implications of findings for the reality of practice, and contribution of findings to the body of knowledge in the field.

7.1. Integration of Findings

As the result of data analysis, five main categories are saturated: contextual issues, philosophical issues, Chinese healthcare education, interprofessional training and hospital management. As emerged from the data, these five categories are mutually influential and merged into a final theory, which is shown in Figure 7.1:
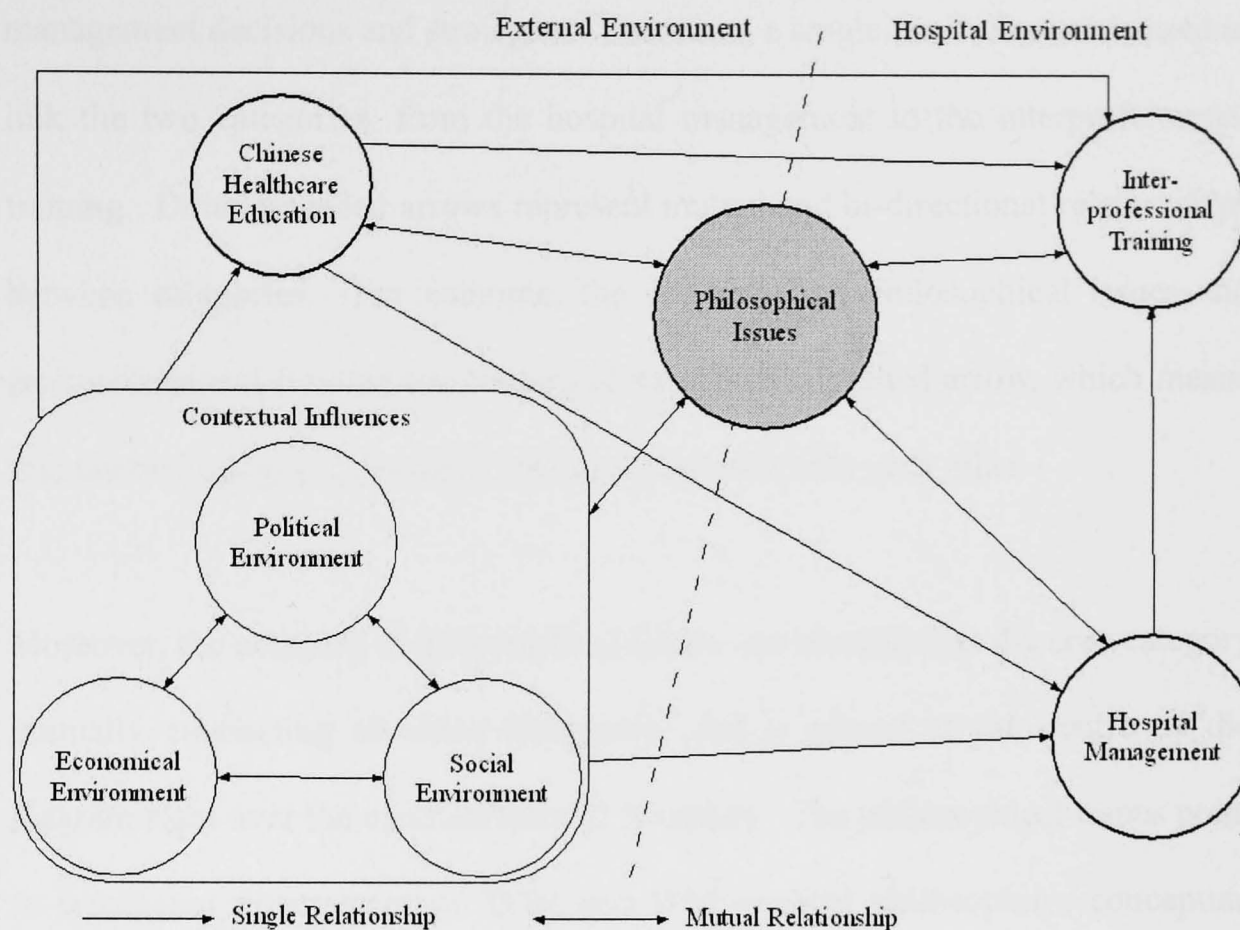
Figure 7.1: Integrated model of research findings

The diagram is separated into two parts, the hospital external environment and internal environment. The external environment includes Chinese healthcare education and contextual influences from the political, economical and social environments. The categories of interprofessional training and hospital management are categorised in the hospital internal environment.

Two types of arrow are shown the diagram, single-headed and double-headed arrows. Single-headed arrows represent unidirectional single relationships between categories. For instance, as discussed in Section 6.5, the category of hospital management can strongly influence the category of interprofessional training; however, the interprofessional training cannot affect hospital

management decisions and strategies. Therefore, a single-headed arrow is used to link the two categories, from the hospital management to the interprofessional training. Double-headed arrows represent mutual and bi-directional relationships between categories. For example, the categories of philosophical issues and interprofessional training are connected by a double-headed arrow, which means that the two categories mutually influence and reinforce each other.

Moreover, the category of philosophical issues was identified as the core category mutually connecting all other categories, and is placed at the centre of the diagram right over the external/internal boundary. The philosophical issues point to significant divergences of TCM and WM medical philosophies, conceptual systems and methodologies. These divergences result in philosophical and professional tensions between TCM and WM healthcare professionals. These two types of tensions emerged as the main barriers hindering communication and the sharing of patient knowledge between the two professional groups.

7.1.1. Philosophical Tensions

The research findings reveal that TCM and WM healthcare professionals showed a consistent lack of belief in each other's practices. Attitudes range from respectful disbelief to entire disregard of the other's role in the healthcare system. This latter attitude is more evident in WM practitioners, who often harshly criticise TCM beliefs and methodology, finding it useless "superstition" (Interview WMD 6.44) based exclusively on "personal experiences instead of scientific evidences" (Interview WMD 2.96), which "lacks a scientific foundation"

(Interview WMD 2.101). As asserted by many of the neurosurgical interviewees, WM is seen as purely scientific in its methodology and "superior" (Interview WMN 14.15) to TCM.

Conversely, many TCM doctors defended that their methodology is not only a "solid medical methodology" (Interview TCM 4.9), which consists of a systematic and consistent set of diagnostic and treatment methods, but also one which has a credibility and an understanding of the human body that has been revised through an evolution of thousands of years. Consequently, many TCM interviewees disagree with some of the WM beliefs and methods, which they find are not always appropriate and sometimes have adverse effects on patients' well-being.

The philosophical tensions are generated by a significant philosophical divergence between TCM and WM. This philosophical divergence leads to severe difficulties in understanding each other's diagnosis, clashes in indications for treatment, difficulties in interpreting requirements for complementarity of treatments and difficulties in understanding interpretations of patients' problems.

Also, as shown in the research findings, the philosophical tensions are caused by a lack of interprofessional common ground to facilitate communication and KS. This interprofessional common ground could be conceptualised as a knowledge base of overlapping interests and mutual conceptual understandings. The lack of

interprofessional common ground exacerbates the philosophical divergence and results in conflicting understandings of patient symptoms and conditions.

As pointed out in the data analysis, the lack of interprofessional common ground is caused by the very limited number of interprofessional modules, lectures, and practical sessions in Chinese healthcare education which concentrate on the possible overlap of the healthcare systems. In this case, students from either system had very limited mutual knowledge and interprofessional common ground, and, more importantly, lacked motivation for interprofessional collaboration and communication.

In addition to the insufficient interprofessional teaching in the Chinese healthcare education system, the research also clearly identified a significant absence of interprofessional training schemes, sessions and programmes within the hospital environment to build understandings between the two professional communities and to develop an appropriate interprofessional common ground.

7.1.2. Professional Tensions

In addition to the philosophical tensions, the research findings illustrate professional tensions which result from substantial inequalities of power and status between TCM and WM healthcare professionals.

The research findings reveal that neurosurgeons have a higher professional standing and have almost dominant power over patients. Therefore, they often

explicit instruct and regulate TCM doctors in what to do about the patient. In contrast, TCM doctors have a lower professional standing and hold less power. Therefore, TCM doctors are most likely to maintain a passive position, avoid any confrontations, and follow instructions, instead of actively, spontaneously, and voluntarily proposing their understandings and treatment suggestions. For them, even if they intend to share knowledge, they probably have very limited opportunities to do so and very little power to have their views recognised.

Therefore, professional tensions prevent KS, not only because these tensions reinforce the professional boundary and distance, but also because they create a hostile relationship between the two professional communities.

Moreover, the professional tensions are exaggerated and strengthened by the hospital management. It was shown that the hospital management provides evidently unequal managerial support to TCM and the neurosurgical department, has a philosophical bias against TCM and a financial bias against the TCM department.

Furthermore, the research findings show that management attitudes and hospital strategies are framed, influenced and constrained by the external political, economical and social environments. The data analysis identified evidence indicating that WM is preferred by patients, and thus WM professionals have a higher social standing in the current Chinese society. In comparison, TCM doctors are less respected and have lower social standing. This hospital external

environment reinforces the professional tensions and results in competition and even resentment between TCM and WM professional teams in the hospital environment.

7.2. Comparison with Existing Models

After the emergence of the final theory, this section compares the emerging theory with KS models in the existing body of literature. This is the final process of Grounded Theory, as advocated by Strauss and Corbin (1998: 51): "The literature can be used to confirm findings and, just the reverse, findings can be used to illustrate where the literature is incorrect, is overly simplistic, or only partially explains phenomena."

Therefore, this section focuses on the comparison and discussion of models. Specifically, it discusses five models in two parts.

In the first part (Section 7.2.1), the integrated model is compared with the model of knowledge flow barriers developed by Lin et al. (2008), and Hall (2005)'s model for interprofessional teams. The discussion in this section is very detailed, since Lin et al. (2008) focus on KS in healthcare and Hall (2005) investigates healthcare interprofessional collaboration. Both issues are related to this study.

Discussion in the second part (Section 7.2.2) is relatively generic and less detailed. The emerging model is generally verified by comparing it to three existing models, namely, Lodhi (2005)'s culturally based KS model, the model of

critical factors in KS proposed by Supar et al. (2005), and Ismail and Yusof (2008)'s KS model for public organisations.

7.2.1. Detailed Model Comparison

This section compares and discusses two models in detail. Firstly, Lin et al. (2008)'s model of knowledge flow barriers is discussed. This is the most comprehensive KS model identified by an extensive search of literature; it was systematically developed in a healthcare environment and social context very similar to China. Secondly, from the perspective of healthcare interprofessional collaboration, this section also compares Hall (2005)'s interprofessional teamwork model with the emerging model.

7.2.1.1. Lin et al. (2008)'s Model of Knowledge Flow Barriers

Lin et al. (2008) have developed a model of knowledge flow barriers on the basis of investigating seven hospitals in Taiwan. It is important to recall that this model has been discussed in Section 3.5 and rejected as a theoretical framework to guide data collection and analysis in this study, for two main reasons: (1) Lin et al. (2008)'s model investigates barriers to knowledge flow between homogeneous healthcare professionals; (2) the validity of this model is questioned, since several barriers are vaguely defined, as discussed in Section 3.5.

Nevertheless, Lin et al. (2008)'s model has been chosen to be compared with the model developed in this research project, mainly because Lin et al. (2008)'s model is the most comprehensive KS model identified by an extensive search of

literature, and was systematically developed in Taiwan, a healthcare environment and social context very similar to mainland China.

In addition, it is necessary to mention that, in contrast to the adoption of GT in this research project, Lin and his colleagues used a very different research approach to develop an inductive exploratory theory. They used a complexity set of human behaviours, cultural historical activity theory (CHAT) and an *a priori* framework to guide their data collection and to frame data analysis. Finally, Lin et al. (2008) developed a framework of KS barriers (as shown in Section 3.5) and used a diagram to illustrate relationships between the identified KS barriers, as shown in Figure 7.2:
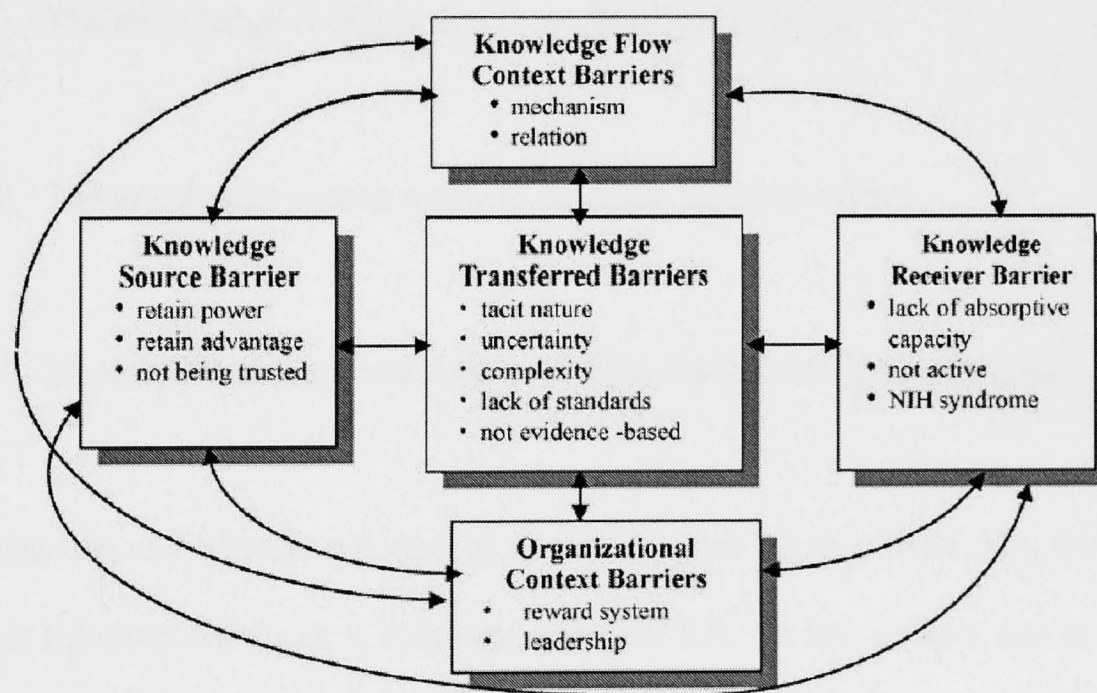

Figure 7.2: Knowledge flow barriers model developed by Lin et al. (2008: 337)

Lin et al. (2008)'s model consists of five mutually related main categories: knowledge source barriers, knowledge flow context barriers, knowledge transferred barriers, organisational context barriers, and knowledge receiver barriers. These main categories are discussed in detail and are compared with the findings of this research project.

7.2.1.1.1. Knowledge Source Barriers

Lin et al. (2008) assert that KS can be impeded by the fear of losing ownership, the fear of losing privilege and positions of advantage, and the lack of trust toward the knowledge source. Therefore, Lin et al. (2008) propose three knowledge source barriers:

1. The knowledge source wants to maintain his prestige.

2. The knowledge source wants to maintain his competence.

3. The knowledge receiver doubts whether the knowledge is updated.

Barriers one and two did not emerge in this research project. However, the third barrier indicates that trust is a critical issue for KS. In this project, the issue of trust emerged as a barrier to KS between TCM and WM healthcare professionals. Specifically, according to the research findings, philosophical and professional conflicts and tensions indicate a severe lack of trust between the two types of healthcare professionals.

7.2.1.1.2. Knowledge Receiver Barriers

Lin et al. (2008) identify three knowledge receiver barriers:

1. The knowledge receiver lacks absorptive capacity.

Lin et al. (2008) claim that the knowledge receiver should possess a sufficient knowledge base to assess and process knowledge shared by the knowledge source. This knowledge base is defined as absorptive capacity (Lin et al., 2008).

Very similarly, this research project identified an interprofessional common ground as a knowledge base of overlapping interests and mutual conceptual understandings between TCM and WM practitioners. As shown in the research findings, a lack of interprofessional common ground is a barrier to communication and KS, since it causes philosophical conflicts and reinforces philosophical and professional tensions. The interprofessional common ground is very similar to the absorptive capacity pointed out by Lin et al. (2008).

2. The knowledge receiver lacks a positive attitude.

This issue did not emerge as a KS barrier in this project. Moreover, Lin et al. (2008) fail to define and explain what "a positive attitude" is.

3. The NIH (not-invented-here) syndrome.

Lin et al. (2008) claim that doctors are often too egocentric to accept others' opinions. In this case, they are usually inactive, or even inclined to resist using material from outsiders (Lin et al., 2008). Lin et al. (2008) define this phenomenon as Not-Invented-Here (NIH) syndrome.

The NIH syndrome is not reflected in this study. However, as shown in the research findings, instead of the NIH syndrome, philosophical and professional tensions result in two egocentric medical communities and are considered as barriers to KS.

7.2.1.1.3. Knowledge Transferred Barriers

Some characteristics of knowledge (i.e. its tacit nature, uncertainty, complexity and lack of standards, and the fact that it is not evidence-based) become barriers to KS (Lin et al., 2008). More specifically, Lin et al. (2008) identify five KS barriers:

1. It is difficult to concretely express medical knowledge.

2. The uncertain nature of medical knowledge.

3. The complex nature of medical knowledge.

4. It is difficult to standardise medical knowledge.

5. The knowledge lacks evidence.

These KS barriers did not emerge in this study. This is because, unlike Lin et al. (2008)'s model, which focuses on all types of medical knowledge, this research project concentrates on sharing ethical and emotional knowledge and social and behavioural knowledge about individual patients. As explained in Section 3.2,

both types of patient knowledge are not "difficult to concretely express", or overly "complex" or "uncertain" in nature, as described by Lin et al. (2008).

7.2.1.1.4. Knowledge Flow Context Barriers
Lin et al. (2008) assert that the lack of sufficient communication channels can become a barrier to KS. Therefore, Lin et al. (2008) point out five KS barriers:

1. Lack of sufficient mechanisms of knowledge flow.

This barrier is reflected in this research project. In this study, consultation meetings are identified as a communication channel for sharing patient knowledge. As shown in the research findings, these meetings can be considered as a good communication channel, since they allow practitioners from both TCM and WM teams to meet in person and to discuss patients' problems and conditions. Nevertheless, these consultation sessions and meetings are rather insufficient, since these meetings are in fact a formal handover of patients and not a vehicle for the interchange of knowledge and interprofessional communication.

2. Physicians lack time for knowledge flow.

The lack of time is also identified as a barrier to KS between TCM and WM healthcare professionals in this study. The research findings indicate that, due to overwhelmingly high workloads and very tight working schedules, both types of practitioners are very pressed for time and are more likely to deal with patient problems directly, usually without sufficient communication and exchange of knowledge about individual patients.

3. Poor relationships between the knowledge source and knowledge receiver.

Lin et al. (2008) assert that poor personal relationships could prevent knowledge flow. Similarly, in this research project, the philosophical and professional tensions have developed competitive, untrusting, and even resentful relationships between TCM and WM practitioners, and have caused difficulties for KS.

4. Lack of communications between the knowledge source and the knowledge receiver.

5. Knowledge sources/knowledge receiver don't know the other end of the knowledge flow.

The above two barriers are very vaguely defined and particularly confusing. Also, the description and explanation provided by Lin et al. (2008) are very limited. Therefore, it is decided not to discuss these two barriers in this thesis.

7.2.1.1.5. Organisational Context Barriers

Finally, for the category of organisational context barriers, Lin et al. (2008) identify six KS barriers:

1. Lack of a knowledge sharing culture among peers.

The research findings of this project reflect that there is a lack of KS culture in this hospital, for two reasons: (1) the hospital management cannot be considered as giving good KS leadership in establishing a suitable KS culture; (2) there is a lack of specific and strong hospital management requirements on the sharing of patient knowledge.

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2. Lack of rewards and incentives toward knowledge flow.

The research findings of this study show that no reward plans and incentive strategies have been implemented for encouraging KS. As indicated by the findings, this is related to the lack of strong KS leadership and sufficient management attention to KS, as discussed above.

3. Lack of performance appraisal concerning knowledge flow.

This research project did not identify any performance appraisal strategies and activities implemented for evaluating processes of sharing patient knowledge. Again, this is related to the lack of management attention to KS.

4. Lack of leadership for promoting knowledge flow.

The lack of leadership emerged as a barrier in this project. As shown in the research findings, the hospital management cannot be considered as giving good KS leadership, not just for failing to promote KS, but also because it has exacerbated conflicts and tensions between TCM and WM medical communities and created extra difficulties for KS.

5. The large distance between the echelons of knowledge sources and receivers.

Even though Lin et al. (2008) provide very limited explanation, it is presumed that "the large echelons of knowledge sources and receivers" refers to the imbalance of professional power and the gap in professional status. In this

project, it was found that the imbalances of professional power and standing exacerbate philosophical and professional tensions and have become barriers to KS.

6. Too many medical specialties.

Lin et al. (2008) provide very little explanation of this issue, and, as shown above, definition of this barrier is particularly confusing. Therefore, this barrier is not discussed here.

7.2.1.1.6. Summary

Lin et al. (2008)'s model of knowledge flow barriers is different from the KS model developed in this research project. As shown in the discussion above, this could be mainly because Lin et al. (2008) studied KS among homogeneous healthcare professionals, whereas this research investigates KS between TCM and WM professionals, two very different types of healthcare practitioners.

However, the model proposed by Lin et al. (2008) partially verifies the research findings of this study. Moreover, despite differences in research aims, methodologies and findings, to a certain extent the two models complement each other. Also, the research findings of this project can extend Lin et al. (2008)'s model in the dimensions of knowledge source barriers, knowledge receiver barriers, knowledge flow context barriers, and organisational context barriers.

- Knowledge source barriers: As shown in the findings of this project, the lack of motivation is a barrier for KS and can be added to this dimension.

The findings show that TCM and WM healthcare professionals are insufficiently motivated to engage in activities of sharing patient knowledge, mainly because of philosophical and professional tensions between the two professional teams, as well as the lack of management support.

- Knowledge receiver barriers: The research findings of this project show that differences in terminology should be considered as a knowledge receiver barrier. As shown in the research findings, TCM and WM healthcare professionals use two completely different terminological systems. The differences in terminology make the interprofessional communication and KS very difficult.

- Knowledge flow context barriers: The research findings show that issues of professional boundaries, conflicting philosophical beliefs and professional tensions can be added to this dimension. Firstly, it was found in this study that a substantial professional boundary separates and distances the TCM and WM professional communities, reinforces philosophical and professional tensions between the two communities and causes problems for KS. Secondly, it was identified that TCM and WM healthcare professionals adopt two completely different and sometimes conflicting medical philosophies. These conflicts in philosophical beliefs and values result in philosophical tensions and become substantial KS barriers. Finally, professional tensions reinforce the professional

boundary, increase the distance between the two teams and add extra difficulties for interprofessional communication and KS.

- Organisational context barriers: These should include inequality of management support as a KS barrier. As shown in the findings of this project, the management of this hospital pays more attention and provides stronger managerial support to WM departments, whereas the TCM department is less well supported. According to the findings, unequal managerial support reinforces imbalances of professional standing and power, exacerbates philosophical and professional tensions, and discourages interprofessional communication and KS.

Finally, the research findings of this project indicate that influences from the external political, economical and social environments can be barriers to KS. Therefore, these external influences can also be added to Lin et al. (2008)'s model.

7.2.1.2. Hall (2005)'s Interprofessional Teamwork Model

Hall (2005) proposed a model for interprofessional teamwork in a Canadian healthcare environment. This model encompasses three main dimensions: "do you see what I see", values, and education systems.

7.2.1.2.1. "Do you see what I see"
Hall (2005) uses "do you see what I see" to represent different world-views possessed by different healthcare professional groups, who usually have very different experiences, values, problem-solving approaches and professional

languages. Hall (2005) claims that these different world-views would result in difficulties for interprofessional collaboration and communication between healthcare professionals. As in this research project, it was found that the divergent world-views adopted by TCM and WM healthcare professionals have caused problems in understanding each other's values, diagnosis and treatment methods, and interpretation of patient problems and needs. These problems make communication and KS extremely difficult.

7.2.1.2.2. Values
Hall (2005) asserts that the difference in professional value systems is a barrier to collaboration and communication. Very similarly, as shown in the findings of this research project, TCM and WM healthcare professionals adopt very different medical philosophies, and thus have very different and sometimes conflicting professional values, which prevent necessary communication and KS.

7.2.1.2.3. Education Systems
Hall (2005) claims that healthcare education systems neglect the development of common philosophical understandings, shared professional values and collaborative relationships between students from different health disciplines. Hall (2005: 192) comments that this system for healthcare education "limits development of positive relationships between the learners of different professions and restricts understanding of and respect for others' roles". Very similarly, as shown in the research findings of this study, the almost insulated TCM and WM education systems result in a significant professional boundary between the two medical communities and a substantial divergence of

philosophical views and values, and provide very little common ground for interprofessional collaboration and communication.

7.2.1.2.4. Summary

According to the above discussion, Hall (2005)'s model partially supports the research findings of this project. Moreover, the findings of this project extend Hall (2005)'s model. That is, in addition to the education systems, this research project found that interprofessional training strategies and activities in the hospital environment can also be used to develop common understandings, world-views and values between professional teams and to encourage communication and collaboration.

7.2.2. General Model Comparison

This section compares the emerging model with three existing KS models: Lodhi (2005)'s cultural based KS model, the model of critical factors in KS proposed by Supar et al. (2005), and Ismail and Yusof (2008)'s KS model for public organisations. In contrast with the comparison conducted in Section 7.2.1, discussion in this section is relatively general and less detailed, since these KS models are not related to healthcare environments and are developed in very different social contexts. The discussion conducted here aims at supporting the emerging theory only in general terms.

7.2.2.1. Lodhi (2005)'s Cultural Based Model

Lodhi (2005) established a cultural based KS model based on the investigation of six postgraduate institutions in Pakistan. Findings of this research point to a KS model consisting of four main components, namely: communication channel,

individual attitude, group attitude, and value. Lodhi (2005)'s model is shown in Figure 7.3:
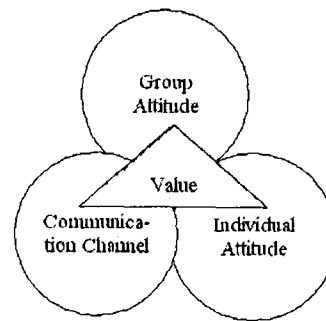

Figure 7.3: Lodhi (2005: 70) cultural based KS model.

The model considers that, as discussed by Lodhi (2005), in addition to the issues of individual attitude, group attitude and communication channel which have been widely identified in KS literature and discussed in Section 7.2.1, the core to KS should be the shared values among KS participants.

All four components of Lodhi (2005)'s model are shown in the research findings of this project. Similarly to Lodhi (2005), this study also locates values at the centre of the model. That is, as shown in the research findings, the core problem of KS between TCM and WM healthcare professionals is the lack of overlapping interests, shared professional values and mutual conceptual understandings.

Also, as reflected in the research findings, these differences in values decide the attitudes of individual healthcare professionals and result in barriers to sharing patient knowledge with each other. Also, the research findings show that the attitudes of individual healthcare professionals form group attitudes and cause philosophical and professional tensions between TCM and WM professional

groups. The two types of tensions are considered as barriers to sharing patient knowledge.

Finally, as one of the main components of Lodhi's (2005) model, the communication channel was identified as a KS barrier in this project. It is shown in the research findings that consultation meetings are used as the main communication channel for KS. However, these consultation meetings are merely used for handing over patients, not for interprofessional communication.

Therefore, the model proposed by Lodhi (2005) partially supports the model developed in this study. In fact, the model developed in this study adds to Lodhi (2005)'s model, since it was found that the shared values of healthcare professionals can be increased and amplified by establishing an interprofessional common ground in the healthcare education systems and interprofessional training in the hospital environment. Moreover, this research project identified that the influences of the external political, economical and social environments as KS barriers. However, Lodhi (2005)'s model focuses on the organisational environment.

7.2.2.2. Supar et al. (2005)'s Model of KS Critical Factors

Supar et al. (2005) present a research study aimed at identifying critical factors influencing KS among academic staff in three higher education institutions in Malaysia. Their research findings point to four main categories, as shown in Figure 7.4:
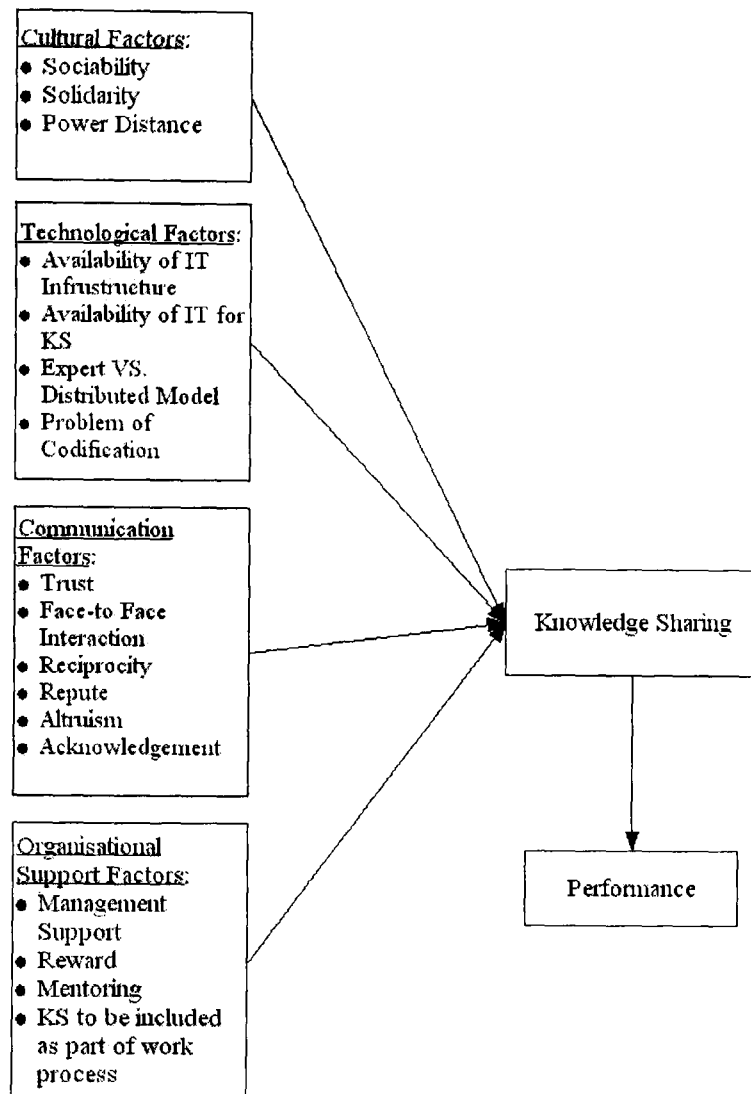
Figure 7.4: Supar et al. (2005)'s model of KS critical factors.

Supar et al. (2005)'s model consists of categories of cultural factors, technological factors, communication factors and organisational support factors. Among these categories, the technological factors are not reflected in this research project, because no information systems had been implemented in this hospital for the purpose of facilitating communication and KS. However, cultural factors, communication factors and organisational support factors are reflected in the findings of this project.

- Cultural factors: Supar et al. (2005) point out three cultural factors: sociability, solidarity and power distance. Sociability is not presented in this study, since healthcare professionals do not need to socialise in order to provide collaborative patient-centred care. On the other hand, as shown in the research findings, solidarity of TCM and WM healthcare professionals is the basis of the provision of patient-centred care. Finally, power distance is clearly presented as a barrier, which not only causes difficulties for KS and interprofessional communication, but also results in professional tensions and competition between the two professional groups.

- Communication factors: Six communication factors are identified by Supar et al. (2005): trust, face-to-face interaction, reciprocity, repute, altruism and acknowledgement. Among these factors, the repute factor is not presented in this study, since KS is important for the provision of patient-centred services, rather than for individual healthcare professionals to enhance their repute. However, the other five factors are reflected in this study. Firstly, there is a clear lack of trust between TCM and WM healthcare professionals. As reflected in the findings, the lack of trust does not necessarily mean a lack of personal trust, but represents a lack of trust in each other's philosophical beliefs and methodological systems. Secondly, face-to-face interaction is adopted by TCM and WM healthcare professionals when providing collaborative health services to patients in consultation sessions. But the face-to-face interaction is very

limited, since these consultation meetings are very short (usually lasting no more than twenty minutes), which is clearly not conducive for in-depth and meaningful interprofessional communication. Thirdly, as shown in the research findings, there is a lack of reciprocity in sharing patient knowledge between TCM and WM healthcare professionals. The research findings show that the lack of reciprocity in interprofessional communication and KS is mainly caused by philosophical and professional tensions between the two medical communities. Fourthly, as shown in the research findings, for altruism purposes, TCM and WM healthcare professionals are collaborating for the purpose of providing the best possible health services to the patient. However, altruism is not presented in the processes of interprofessional communication and KS. Therefore, sharing knowledge about individual patients is largely overlooked in the processes of interprofessional collaboration. Finally, Supar et al. (2005) claim that acknowledgement can be considered as an incentive for KS. However, the element of acknowledgement is missing in KS between TCM and WM healthcare professionals, due to the lack of reciprocity, as well as philosophical and professional tensions.

- Organisational support factors: This category consists of four factors: management support, rewards, mentoring, and the inclusion of KS as part of the work process. The factor of mentoring is not relevant to KS between TCM and WM healthcare professionals, and there are no mentoring activities between the two professional teams. Therefore,

mentoring is not reflected in the findings of this research project. Moreover, management support emerged as a KS barrier in this project. More precisely, due to a lack of specific and strong management support, interprofessional communication and KS are largely neglected by professionals from both teams. In addition, and again due to lack of management support, no rewards or incentive strategies have been implemented to encourage the sharing of patient knowledge. Finally, the sharing of patient knowledge is less prioritised, since KS activities are not clearly defined and regulated as part of the work process. Once again, this is due to a lack of management attention and support.

Consequently, according to the discussion above, Supar et al. (2005)'s model partially supports the model developed in this research project. Moreover, the research findings of this project also extends Supar et al. (2005)'s model in cultural, communication and organisational support factors.

1. Cultural factors: According to the findings of this study, factors relating to culture and tensions between professional groups should be added in this category. Firstly, the research findings reflect that there was a lack of KS culture, due to the absence of specific and strong hospital management requirements on the sharing of patient knowledge. Secondly, the research findings show that philosophical and professional tensions between TCM and WM medical teams resulted in great difficulties for KS.

2. Communication factors: Factors relating to the lack of motivation, common ground and time should be considered as communication factors. Firstly, the research findings of this study show that there is a lack of motivation for KS, caused by strong philosophical and professional tensions, as well as a lack of management support for KS. Secondly, as shown in the research findings, interprofessional common ground is an important element for the interprofessional communication and collaboration of TCM and WM healthcare professionals. This is because the lack of interprofessional common ground results in conflicting understandings of patient symptoms and conditions, disagreement with each other's approach and methods, and professional tensions. Finally, the research findings show that time is essential for KS. Because both TCM and WM healthcare professionals are extremely pressed for time, interprofessional communication and the sharing of patient knowledge are usually not prioritised in the collaborative provision of health services to patients.

3. Organisational Support Factors: According to the findings of this project, unequal management support should be added to the organisational support factors. As shown in the research findings, hospital management provides unequal managerial support to the TCM and WM communities. The unequal management support exaggerates professional tensions between the two communities and results in barriers to KS.

In addition to the discussion above, it should also be noted that Supar et al. (2005)'s model concentrates on the organisation's internal environment. According to the findings of this project, influences from the external political, economic and social environments can result in barriers to KS. Therefore, these types of external influences can also be added to Supar et al. (2005)'s model.

7.2.2.3. Ismail and Yusof (2008)'s KS Model for Public Organisations

On the basis of a wide search of literature, Ismail and Yusof (2008) propose a KS model for public organisations. This model is shown in Figure 7.5:
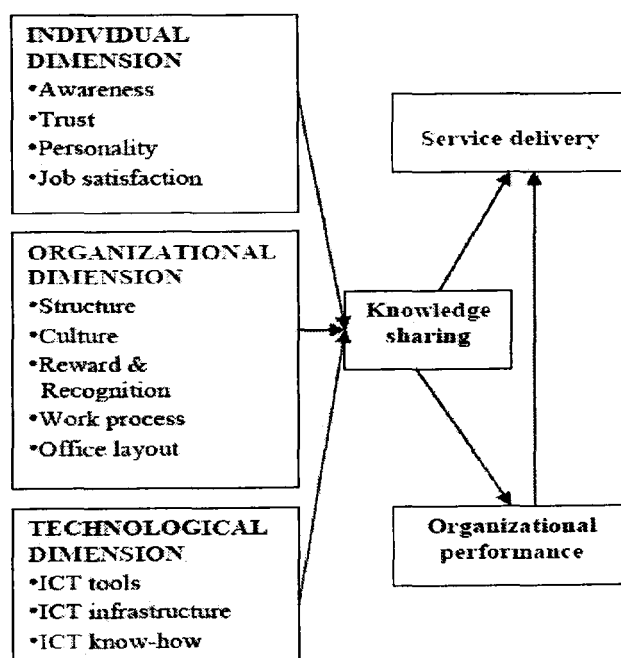

Figure 7.5: Ismail and Yusof (2008)'s KS model for public organisations.

The KS model developed by Ismail and Yusof (2008) consists of three dimensions, technological, organisational and individual. When the above model is compared with the research findings of this study, the technological dimension is not identified in this research, because ICT infrastructure has not been implemented to facilitate communication and KS in this hospital. However, the

individual dimension and the organisational dimension are reflected in this project.

- The individual dimension consists of four factors: awareness, trust, personality and job satisfaction. Among these issues, personality and job satisfaction are not presented in this study. As perceived, for ethical reasons, the personality and job satisfaction of individual healthcare professionals are not obstacles to the provision of patient-centred services. However, issues of awareness and trust are reflected in the findings of this research project. Firstly, as shown in the findings, healthcare professionals are lacking in KS awareness, not only because of the lack of hospital management support, but also due to philosophical and professional tensions between TCM and WM professional teams. Secondly, KS is impeded by the lack of trust in each other's philosophical beliefs and methodological systems.

- The organisational dimension includes five issues: structure, culture, reward & recognition, work process and office layout. Among these issues, office layout is not reflected in this study. This is because KS is required by the provision of collaborative healthcare to patients, whereas in some business organisations it is voluntary and spontaneous and can be encouraged by appropriate office layout. Apart from the office layout, the issues of structure, culture, rewards & recognition and work process are reflected in this research project. Firstly, the structure of this hospital is

designed to favour WM. This structure undeniably exacerbates philosophical and professional tensions between the TCM and WM healthcare professionals. Secondly, as shown in the research findings, there is a lack of KS culture, caused by the absence of specific and strong hospital management requirements on KS. Thirdly, due to a lack of hospital management attention and support, rewards and recognition are not offered in the process of sharing patient knowledge. Finally, because KS activities are not clearly defined and regulated as part of the work process, the process of sharing patient knowledge is less prioritised.

Also, as shown on the right hand side of Ismail and Yusof (2008)'s model, KS is capable of improving organisational performance and service delivery. It is shown in this study that KS can substantially increase the quality of patient service provision, and therefore this hospital could have higher customer satisfaction as a strong advantage when competing with other hospitals.

The above discussion shows that Ismail and Yusof (2008)'s KS model for public organisations partially supports the model developed in this study. In addition, the research findings of this study can extend Ismail and Yusof (2008)'s model in both the individual dimension and the organisational dimension.

- Individual dimension: The findings of this study can add six issues to this dimension: motivation, lack of common ground, time, professional tensions, terminology, and imbalance of professional power and standing.

Firstly, according to the research findings, individual healthcare professionals from both TCM and WM medical teams showed inadequate motivation for sharing patient knowledge, because of a lack of management support and substantial philosophical and professional tensions between the two groups of healthcare professionals. Secondly, the lack of common ground between individual practitioners results in conflicts of philosophical understanding and beliefs, as well as causing great difficulty for the exchange of patient knowledge. Thirdly, the research findings show that healthcare professionals give a low priority to communication and KS, because they are pressed for time. Fourthly, professional tensions between individual healthcare professionals, including competition and imbalance of power and standing, could prevent the sharing of knowledge. Fifthly, according to the findings, different professional terminologies used by individual practitioners cause difficulties in interprofessional interaction and KS. Finally, the research findings show that the imbalances of professional power and standing results in professional tensions and exacerbates philosophical tensions. Therefore, the imbalance of professional power and standing is considered as a barrier to the sharing of patient knowledge.

- Organisational dimension: According to the research findings, three issues can be added to this dimension: management support, insufficient communication channels and management inequity. Firstly, this research project points out that activities of sharing patient knowledge are not

prioritised and are even considered as not important by professionals from both teams, because of the lack of management support. Secondly, the findings of this project show that consultation meetings as a communication channel for KS are insufficient. In fact, these meetings have become a formal handover of patients and usually last no longer than twenty minutes. These conditions are clearly not conducive to interprofessional communication and KS. Finally, the research findings show an inequality in the managerial support provided to the TCM and WM departments. This management inequality, as illustrated in the findings, has substantially exacerbated philosophical and professional tensions between the two professional teams.

Moreover, an additional dimension can be added to Ismail and Yusof (2008)'s model. That is, the findings of this research project show that influences of the external political, economical, and social environments can be considered as barriers to KS.

7.2.2.4. Summary

Discussion in this section shows that the integrated model which emerged in this research project can be verified and supported by KS models developed by Lodhi (2005), Supar et al. (2005) and Ismail and Yusof (2008).

Both Section 7.1 and 7.2 in this chapter are aimed at conceptualising the research findings and making discussion at a conceptual level. In contrast, the rest of this

chapter elicits implications for the reality of practice and contributions to knowledge.

7.3. Implication of Findings for the Reality of Practice

The research findings have important implications for the reality of practice. This section discusses these implications from the following four perspectives: communication and collaboration issues, education and professional training, hospital management and external influences on KS.

7.3.1. Communication and Collaboration Issues

As implied in the research findings, in order to improve KS between TCM and WM healthcare professionals, efforts could be made on seven issues: severe philosophical divergence, interprofessional common ground, substantial professional boundary, dissonance of professional terminology, inequality in professional standing and power, communication in interprofessional consultations, and the participation of nurses.

7.3.1.1. Severe Philosophical Divergence

Collaboration in a healthcare environment requires healthcare professionals to work cooperatively. Very often, these healthcare professionals are from different backgrounds and have different philosophies, values and basic perspectives, which are potential sources of conflict and could hinder collaboration and KS (San Martin-Rodriguez et al., 2005).

As shown in this project, WM and TCM healthcare professionals adopt two completely different philosophical stances and methodological approaches. That is, TCM doctors adopt a holistic perspective, in which patients are diagnosed and treated as an integral entity (Zhu, 2010; Zhang, 2010), whereas WM professionals usually employ a micro approach, in which practitioners are more interested in localising a disease in a specific part of the human body than in looking at the patient with the problem (Efferth et al., 2007; Zhang, 2010). Moreover, TCM is based on 2300 years of evolution and accumulation of experience. On the other side, WM is based on scientific paradigms and evidence-based research (Cheng, 2000). In addition, the two medical systems have entirely different diagnosis and treatment methods and techniques (Liu, 2003; Sherman et al., 2005). These differences discussed above are rooted in the basic philosophies of TCM and WM, result in very different philosophical lenses for viewing and resolving patient problems, and cause problems in the exchange of patient knowledge.

To mitigate this philosophical divergence, the research findings point out that it is important to establish an interprofessional common ground, which is discussed in the following section (7.3.1.2).

7.3.1.2. Interprofessional Common Ground

As shown in the data, KS between TCM and WM professionals is very difficult due to a lack of interprofessional common ground to facilitate and motivate necessary communication. This interprofessional common ground was identified as a knowledge base of overlapping interests and mutual conceptual understandings. The lack of interprofessional common ground exacerbates the

philosophical divergence, results in conflicting understandings of patient symptoms and conditions, and reinforces the professional boundary and distance.

As reflected in the literature, many researchers propose that communication needs some common ground as a communication platform (e.g. Grice, 1975; Horton and Keysar, 1996). Without common ground, Frank (1961: 1801) asserts that "members of each discipline come together and talk at each other but do not communicate, even when they earnestly try to make themselves clear and avoid undue technical terminology". This is because, as further discussed by Frank (1961), an individual usually talks to him/herself and is unaware that the message may have limited meaning to the others, who have different frames of concepts and assumptions.

Therefore, it is essential to put in place an appropriate interprofessional common ground between TCM and WM healthcare professionals. Moreover, as shown in the data, and advocated by a number of studies (e.g. Hall, 2005; Zwarenstein and Reeves, 2006; Reeves et al., 2007), an interprofessional common ground could be established in healthcare education and in interprofessional programmes and sessions in the hospital environment.

7.3.1.3. Substantial Professional Boundary

This study identified a clear and substantial professional boundary, which has formulated two very distinctive professional communities, and which prevents communication and KS between the two communities.

It is well reported in the literature that a strong professional boundary hinders KS (Nicolini et al., 2008; Ferlie et al., 2005). Zwarenstein and Reeves (2006) assert that practitioners are more likely to communicate internally and within the community, but rarely across the professional boundary. This is because, as explained by Currie and Suhomlinova (2006), professionals belonging to the same professional groups have more commonalities in meanings and knowledge patterns, which are necessary foundations for meaningful communication and KS. Moreover, professionals from different medical fields often have very different philosophies, values, and basic theoretical perspectives, which are inhibitors to collaboration and KS (San Martin-Rodriguez et al., 2005).

In this case, it is important to soften the boundary separating the TCM and WM communities within the hospital environment. This can be achieved by increasing commonalities in communication and by establishing and enhancing the interprofessional common ground.

7.3.1.4. Dissonance of Professional Terminologies

Differences in professional terminologies have long been recognised as a problem for KS (Davenport et al., 1998; Alavi and Leidner, 2001; Stenmark, 2002). For instance, Hollenberg (2006) presents the research findings of a project conducted in a Canadian healthcare environment and points out that differences in professional terminology are significant barriers to communication in healthcare collaborations.

Similarly, as pointed out by the research findings of this project, TCM and neurosurgical professionals use completely different professional terminologies. Also as shown in the findings, the terminological difference makes the process of sharing patient knowledge extremely difficult. Often, knowledge shared by one party cannot be properly received and correctly comprehended by the other party.

The research findings indicate that the terminological gap between TCM and WM professionals can be reduced by increasing understanding of each other's philosophy and terminology.

7.3.1.5. Inequalities in Professional Standing and Power

The data analysis identified that, when compared with TCM doctors, neurosurgical professionals have a higher professional standing and hold more power. Therefore, as reflected in the findings, neurosurgeons usually explicitly instruct and regulate TCM doctors in what they should do about the patient. In contrast, TCM doctors are most likely to maintain a passive position, avoid any confrontations, and to follow instructions, instead of actively, spontaneously and voluntarily putting forward their understandings and treatment suggestions.

Currie and Suhomlinova (2006) present very similar research findings based on studying hospitals in the NHS in England. They point out that the status and power imbalances of different healthcare professions are barriers to KS. They claim that hospital doctors usually possess more power in hospitals, so "other professionals were expected to accept the higher status knowledge of hospital

doctors, following which they would represent hospital doctors' interests in other decision-making arenas" (Currie and Suhomlinova, 2006: 21).

As implied by the findings of this study, strategies need to be implemented aiming at balancing professional status, maintaining equality of TCM and WM communities and resolving tensions resulted by the competition for professional power and status.

7.3.1.6. Communication in Interprofessional Consultations

As discussed in the research findings, communication and collaboration usually occur in consultation sessions, which are also the main vehicle for the sharing of patient knowledge. However, these consultation sessions are aimed almost exclusively at resolving patient problems at hand, and are hardly a good communication channel for KS. In reality, as expressed by a number of informants, the meetings usually last no more than twenty minutes, during which the diagnosis of the patient is presented by the WM professional and a brief discussion occurs between all participants. This is of course not conducive to in-depth interprofessional discussion.

Therefore, it is important to explore and develop the use of the consultation meetings as a channel for sharing patient knowledge. It is also necessary to explicitly define and regulate processes and activities of KS during these meetings.

7.3.1.7. The Participation of Nurses

As reflected by many neurosurgical nurses interviewed in this study, they are the healthcare professionals closest to patients, the ones who interact with patients regularly and take care of patients daily. Therefore, these nurses have a better understanding of the needs, requirements and expectations of patients, and possess more of the ethical and emotional knowledge and the social and behavioural knowledge about patients on which this study focuses.

As discussed in Section 6.1.3, nurses, although present in those consultation meetings, may not truly participate in the processes of interprofessional collaboration and may not freely exchange patient knowledge with their counterparts on the other side. Men (2008) reports that, in the Chinese culture, nurses usually do not have a respected social status. In addition, Zhou (2008) asserts that, in hospitals, nurses are responsible for making up-to-date reports on patients' conditions to doctors, but do not have the power to make any decisions or take any actions without obtaining the doctor's consent. Thus, as also found in this study, neurosurgical nurses, although present in those consultation meetings, are usually mere spectators and very rarely intervene or propose ideas and suggestions. In this case, all the patient knowledge obtained by nurses is most probably lost, never transmitted to TCM doctors, and the requirements of patients can hardly be achieved or their satisfaction guaranteed.

Consequently, it is important to increase the participation of nurses in interprofessional consultation, and empower nurses to protect the benefits and

rights of patients during the processes of collaboration. Nurses can also play a leading role in initiating interprofessional communication and mediating the exchange of patient knowledge.

7.3.2. Education and Professional Training

A very important finding of this study is that there is a lack of interprofessional common ground for communication and KS. As discussed in Section 6.2.1.2, the lack of interprofessional common ground reinforces the professional boundary, exacerbates philosophical and professional conflicts and creates difficulties for communication and KS between TCM and WM professionals. Also, as emerged from data, the interprofessional common ground can be established in healthcare HE and in interprofessional programmes in healthcare organisations.

Many research studies (e.g. Lary et al., 1997; Hall, 2005; San Martin-Rodriguez et al., 2005) identified an increasing specialisation in subjects and medical areas in medical education, resulting in fragmentation of health services. Members of each medical area have very limited knowledge regarding the practices, expertise, responsibilities, skills, values, and theoretical foundations of other professions (Hall, 2005; Rodriguez et al., 2005). In this case, healthcare professionals do not have a common ground and thus often have difficulties in collaboration and communication with others from different medical disciplines. Therefore, it is important to prepare individual healthcare professionals to know more about the overlapping areas of practice and the potential areas of collaboration at two levels: firstly, pre-licensure level in medical universities and institutions; secondly, at

post-licensure level, through strategies and activities of interprofessional training in hospitals (Freeth et al., 2002; Zwarenstein, 2006).

At the pre-licensure level, and as reported in the research findings, the Chinese healthcare education system consists of two almost isolated sub-systems, one for WM and one for TCM. This educational system includes very few interprofessional modules, lectures, and practical sessions concentrating on the possible overlap of the healthcare systems. There is, therefore, 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. Therefore, it is clear that it is important to embed and increase interprofessional education programmes in both TCM and WM universities and educational institutions.

Furthermore, at the post-licensure level, it was found that there is an absence of interprofessional training schemes, sessions and programmes in the hospital environment. The existing professional training programmes mostly focus on their respective professional subjects and methods; rarely on the interprofessional areas. This reflects a perception that hospital management and leadership place very little importance on communication and professional co-operation between the two groups, thus reinforcing philosophical divergence and educational problems. In this case, healthcare professionals not only begin with very limited common ground to facilitate KS, but also are actively demotivated to engage in

interprofessional activities and the sharing of patient "real needs" (Interview WMN 14.35). Therefore, the communication and KS problems can be resolved by establishing very specific interprofessional training schemes and activities in the hospital environment aimed at increasing mutual understanding and developing an appropriate interprofessional common ground.

7.3.3. Hospital Management

Organisational management is the key to the success of any knowledge management programme in any type of organisation (DeTienne et al., 2004). In addition, DeTienne et al. (2004) and Singh (2008) further claim that organisational management should be able to identify potential conflicts which might prevent the process of KS and to resolve these conflicts when they occur.

However, as revealed by the research findings, the management of this hospital not only neglects the existence of philosophical and professional tensions between TCM and WM healthcare professionals, but also further strengthens the conflicts and tensions by evidently treating the two communities unequally and providing more managerial support to WM departments. Clearly, current hospital management strategies result in imbalances of professional standing and power between TCM and WM healthcare professionals, reinforce the professional boundary and tensions, and develop untrusting and even resentful relationships.

In order to improve KS between TCM and WM healthcare professionals, hospital management must provide equal managerial support to TCM and WM

departments, establish strategies to balance the positions of the two medical communities, and create trusting relationships and mutual recognition between TCM and WM practitioners in the hospital environment.

7.3.4. External Influences on KS

The data analysis identified some influences on KS from the external political, economical and social environments. According to the research findings, the hospital's external environment not only interacts with the internal environment and influences the establishment of hospital management strategies, but also can be considered as barriers to sharing patient knowledge in the collaboration of TCM and WM professionals. This section discusses the political, economical and social influences which emerged from the data analysis.

7.3.4.1. Political Influences

Even though it was virtually impossible to interview healthcare politicians in relatively high-level government positions, it emerged from the data analysis, and was pointed out by Liu (2003) and Zhu and Liu (2009), that TCM and WM medical communities, as two existing components of the Chinese healthcare system, receive very unequal political support, even though the central government explicitly requires the two communities to be equally supported.

As revealed by the research findings and confirmed by Liu (2003) and Zhu and Liu (2009), there is no specific strategy and no actual plan of implementation established by the central government to guide and evaluate the implementation of these health policies. In this case, these policies are not well implemented in

hospitals and not properly enforced and supervised by local government (Liu, 2003). Liu et al. (2008) argue that those healthcare policies are "sentences without meaning".

Due to the lack of strong political action maintaining the equality of the two communities, hospital management evaluates each department on the basis of 'profitability' (Liu, 2003). Therefore, TCM departments are always less well supported and considered as less important, since they are usually not as profitable as the WM ones (Liu et al., 2008).

The existence and development of TCM needs political support from the central government (Zeng, 2008). As implied by the findings of this research project, the Chinese central government must reinforce the existing healthcare policies, which need to be assisted by clear implementation plans and evaluation strategies.

7.3.4.2. Economical Influences

In the mid 1980s, the Chinese government implemented the Market Economy Policy (MEP), which aimed at reforming a planned economy into a market economy in various industries and services, including the healthcare services and the healthcare organisations (Hsiao, 1995; Fruehauf, 1999; Liu et al., 1999). Generally speaking, China's reforms have been very successful and have significantly boosted the Chinese economy (McMillan and Naughton, 1992).

However, since the implementation of MEP, the central government no longer fully fund any types of public healthcare services (Hsiao, 1995). Instead,

hospitals and health organisations have to rely on user fees to support medical and operational expenditures (Hsiao, 1995). This has created enormous problems in the Chinese healthcare system. Liu et al. (1999) report that hospitals arbitrarily increase patient care fees, which has caused "sky high" charges after simple medical procedures.

Moreover, the implementation of MEP has encouraged a social materialism, in which people's ideology and behaviour are more money-oriented; this includes healthcare professionals in healthcare sectors (Xie, 2006). It has been reported that many doctors only aim at pursuing higher personal income, rather than practising medicine ethically to treat patients and save lives (Xie, 2006). For instance, Liu (2006) reveals that many doctors seek bribes from patients and relatives. To control this serious and unethical behaviour of healthcare professionals, the Chinese central government had to establish legislation to define bribery in hospitals is criminal behaviour, so that, once identified, the doctor would be prosecuted (Liu, 2006). Moreover, Hu (2006) reports that some doctors refuse to treat patients unless the patient fees are fully paid. Therefore, patients have very little power to make their opinions and requirements recognised when receiving health services.

In addition to the above problems reported in the literature, this project found that the implementation of MEP forces the hospital management to maximise hospital income and profitability. Thus, the hospital management usually supports only the WM departments that can make a lot of profit. TCM departments are usually

less profitable, and hence receive less support, and are even "marginalised" (Interview TCM 19.19) and "discriminated" (Interview TCM 4.27) by the management. As shown by the data analysis, the unequal management support to WM and TCM departments reinforces philosophical and professional tensions and demotivates healthcare professionals to engage in necessary communication and KS about individual patients.

Consequently, as reflected in the research findings, it is necessary to reduce the effects of MEP on Chinese healthcare organisations, reinforce the implementation of the patient-centred healthcare approach, and promote the power and position of patients in the processes of healthcare.

7.3.4.3. Social Influences

Liu (2003), who is a professor in a TCM university in China, claims that Chinese people believe WM is a product of state-of-the-art scientific technologies and thus have more trust in the methods of WM. Comparably, people show less trust in TCM, and some people consider TCM as unscientific and a superstition (Zhang, 2007). Sometimes, TCM doctors are even criticised as 'liars' (Wang, 2006a).

More seriously, the existing literature points to several social incidents appearing to exclude TCM out of the national healthcare system (Fan, 2003; Fang, 2005; Zhang, 2006; Wang, 2006b; Fang, 2006; Fang, 2007; Fang, 2010). Even though these incidents did not have any real impact on the existence of TCM in the Chinese healthcare system, they imply a severe lack of trust toward the traditional

medical philosophy and therapy. Moreover, as shown in the data collected in this study, these social incidents exacerbate the imbalances in professional standing, strengthen philosophical and professional tensions between TCM and WM communities, and increase the lack of trust within the hospital environment.

Consequently, strategies need to be established by the government which aim at reinstalling confidence in TCM. Also, it is necessary to propagate knowledge of TCM and WM to the public, to encourage a proper understanding of the advantages and disadvantages of both types of medicine.

7.4. Contribution of Findings to the Body of Knowledge in the Field

This research project investigates communication and KS problems between TCM and WM healthcare professionals in their collaborative and complementary provision of healthcare services to patients in Chinese hospitals. In addition, this project contributes to the body of knowledge by providing a first theory consisting of a number of barriers hindering the sharing of patient knowledge between the two types of healthcare professionals. In more detail, this research project contributes to two fields: health informatics, and knowledge management and sharing.

7.4.1. Health Informatics

The theory established in this study contributes to the field of health informatics in China. This is a field which is relatively under-developed and which has

recently received increasing attention from academic researchers and healthcare professionals (Zheng, 2010). However, the existing body of literature mostly concentrates on implementing hospital information systems to assist hospital management, computerising patient histories and records, and providing solutions to optimise patient flow in hospitals (Song, 2010; Chui, 2010; Sun, 2010; Li, 2010; Zheng, 2010). On the basis of an extensive search of literature, it was recognised that not much existing research investigates communication between individual healthcare professionals and the existing problems of interaction in Chinese hospitals.

The communication and KS problems investigated in this research project have not been studied previously. This research project therefore provides a first set of insights into the communication problems between WM and TCM healthcare professionals, and proposes a framework of KS barriers causing the communication problems existing in the collaboration between TCM and WM professionals.

7.4.2. Knowledge Management and Sharing

Knowledge management and sharing have been increasingly recognised as important to the provision of patient services in healthcare organisations (Dobbins et al., 2010). However, and despite the attempts made by Chinese hospitals to implement KM strategies and encourage KS activities (Li et al., 2010), KM and KS implementation in reality is not well studied and reported, and existing problems have not been identified and resolved (Bian et al., 2010). In

fact, the existing body of literature consists mostly of conceptual works without sufficient support based on empirical investigation and data collected in context.

This research project provides a perspective on the context of KS in Chinese healthcare organisations. Furthermore, this research project establishes a theory which consists of a number of barriers to communication and KS between TCM and WM healthcare professionals in Chinese hospitals.

The theory developed in this study can be used by hospital management and information professionals in Chinese hospitals to resolve the KS problems, to mitigate the effects of identified KS barriers, and to improve communication between TCM and WM medical communities. Moreover, the theory can provide useful indications and can be used as a theoretical foundation for KM and KS research studies in healthcare organisations in different contexts in different countries.

7.5. Conclusion

This chapter integrates the research findings, which are presented and discussed in Chapter 5, into an integrated model. Additionally, this chapter conceptualises the research findings and identifies that the sharing of patient knowledge between TCM and WM healthcare professionals is mainly hindered by philosophical and professional tensions.

Moreover, in this chapter, the integrated model emerged in this research project is compared with existing KS models in the literature. Also, this chapter identifies contributions to the existing body of knowledge and links the research findings to the reality of practice by eliciting implications.

The next chapter, Chapter 7, concludes the research project. Specifically, the next chapter provides a brief summary of the research findings, answers the research question and points out limitations and future work.

8. Conclusion

This thesis reports on a PhD research project aimed at identifying barriers to sharing patient knowledge in the collaboration of TCM and WM healthcare professionals in the context of Chinese hospitals. This chapter concludes this thesis. More specifically, this conclusion chapter discusses the following issues: summary of research findings, responding research questions, practical implications, limitation of this study and future works.

8.1. Summary of Research Findings

As discussed in Chapter 6, the data collected point to five main categories of KS barriers, namely:

- The contextual influences: The data analysis identified some contextual influences from the hospital external environment, constraining and impeding activities of sharing patient knowledge between TCM and WM healthcare professionals within the hospital environment. Specifically, the research findings point to three types of contextual influences, namely, political, economical and social influences. As revealed by the research findings, these contextual influences have created imbalances of professional standings and power in hospital, in which WM professionals possess relatively higher professional standings and hold considerably stronger power. These imbalances have formed professional tensions

between the two medical communities, demotivating and preventing individual professional from active and spontaneous interprofessional communication and KS of patient knowledge.

- Philosophical issues: The research findings reveal significant divergences of conceptual systems, theoretical ground, diagnostic and treatment methods, and professional terminologies used by the professionals of TCM and WM. These philosophical divergences have created ongoing philosophical tensions between the two groups, have resulted in conflicts of opinions and perspectives and a climate of distrust, disregard, and unwillingness to communicate in the two communities. Also as shown in the research findings, the philosophical tensions could be the result of a lack of interprofessional common ground to enable, facilitate and motivate communication and KS. The lack of interprofessional common ground is caused by the inadequate interprofessional education in the Chinese healthcare education and an absence of interprofessional training programmes in the hospital environment.

- Chinese healthcare education: The data collected revealed that the Chinese healthcare education consists of two almost insulated educational systems, one for TCM and one for WM. Students from both systems have limited knowledge and understandings about the other system. Thus, this national healthcare education system is incapable of establishing and developing an adequate interprofessional common ground to enable and

facilitate the interaction of patient knowledge between TCM and WM professionals. Also, this national healthcare education system has failed to build a foundation of trust and a collaborative and cooperative relationship between the two types of practitioners, and is not motivating or permitting voluntary and spontaneous interprofessional collaboration and communication.

- Interprofessional training: As shown in the research findings, professional training programmes, sessions and activities for TCM and WM practitioners in the hospital environment also are insulated in their respective fields. Therefore, the hospital professional training reinforces the lack of interprofessional common ground caused by the healthcare education and thus prevents active and voluntary interprofessional communication and the interaction of patient knowledge.

- Hospital management: The research findings point out that the hospital management provides more attention and support to WM departments, whereas the TCM Department is not only less supported, but also could be discriminated by the hospital management. As reflected in data collected, the hospital management has exacerbated the philosophical and professional tensions between communities of TCM and WM, encouraged interprofessional competition, augmented imbalances of power and professional standings. Thus, professionals from both communities are

not motivated and even unwilling to communicate and share knowledge with each other.

Conceptualising and synthesizing the research findings, it was identified that KS is mainly hindered by two types of interprofessional tensions: philosophical tensions and professional tensions.

The philosophical tensions are caused by the substantial divergence in philosophies, theoretical grounds 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 in the two communities. Additionally, the philosophical tensions are resulted by a lack of interprofessional common ground to facilitate communication and KS. The lack of interprofessional common ground is caused by lacking of interprofessional education in the Chinese healthcare education and by lacking of interprofessional training in the hospital environment.

The professional tensions are resulted by substantial asymmetries of power and professional standings between the two medical communities. The data analysis clearly revealed that neurosurgeons have relatively higher professional standings and have almost dominant power over patients. Therefore, they often explicitly instruct and regulate TCM doctors on what to do on the patient. Comparably, TCM doctors have lower professional standings and hold relatively less power. Therefore, TCM doctors are most likely to maintain a passive position when

collaborating with neurosurgical practitioners, avoid any confrontations and to follow instructions, instead of actively and voluntarily proposing their ideas, understandings and suggestions. Finally, there also seem to be an absence of influence by a third professional group that is fundamental in KS of patient knowledge: the nurses.

8.2. Responding Research Questions

In the introduction of this thesis, Chapter 1, the main research question for this research project is presented. The main research question is:

What are the barriers for sharing patient knowledge between healthcare professionals from traditional and Western medicines in their patient-centred interprofessional collaborations?

In order to respond to this main research question, it is more effective to answer the two more specified research questions, which are decomposed from the main research question.

1. What are the barriers that hindering the sharing of patient knowledge between TCM and WM healthcare professionals?

   The research project identifies in total forty-six barriers for sharing patient knowledge. These KS barriers have emerged from the five main

categories mentioned above and synthesised into the two main tensions also discussed above.

2.   What are the relationships between these barriers?

As emerged from data, the five main categories are closely related and interact with each other. To be more specific, and as shown in Figure 7.1, the category of philosophical issues, as the core category of the final theory, is related to all other four categories. Similarly, the category of contextual influences is also mutually related to all four categories. Moreover, the category of Chinese healthcare education is not only influenced by the contextual influences, but also affects categories of philosophical issues, hospital management, and interprofessional training. Finally, the category of interprofessional training receives influences from categories of contextual influences, Chinese healthcare education and hospital management and is mutually related to the philosophical issues.

8.3. Practical Implications

As reflected from the research findings, in order to improve KS and mitigate barriers, efforts need to be made aiming at resolving the philosophical and professional tensions existing between TCM and WM healthcare professionals. Specifically, actions need to be made from both inside and outside of the hospital environment.

8.3.1. Internal Actions

Firstly, within the hospital environment, there is a need to formalise the process of interprofessional collaboration and formally demand and regulate activities of interprofessional communication and sharing patient knowledge. Moreover, it is necessary to encourage nurses to be more participative to consultation meetings, where TCM and WM collaboration and KS occur, and to initiate and mediate activities of sharing patient knowledge.

Secondly, the hospital management should establish very specific interprofessional training schemes and programmes. For both types of healthcare professionals, these programmes and sessions could increase mutual understanding, acceptance of each other's philosophy and beliefs, could enhance a better understanding of each other's professional terminology and, more importantly, effectively put in place an interprofessional common ground to enable, facilitate and motivate interprofessional communication and KS.

Thirdly, in order to reduce and resolve the professional tensions, the hospital management needs to effectively establish and implement explicit strategies aiming at equally support TCM and WM departments, eliminate imbalances of power and professional standings and foster a harmonious hospital environment, which could be more conducive for interprofessional collaboration and communication.

Finally, it is important to emphasise that these solutions must be supported by the hospital managers and leaders in both medical communities, who should realise that the collaboration of TCM and WM is not just politically imperative, but may bring tangible benefits through mutual trust aiming at maximising the patient welfare.

8.3.2. External Actions

In addition, as shown in the findings, these internal actions implemented within the hospital environment may not be adequate. Strategies and actions need to be initiated and implemented at the national strategic level. Specifically, four implications are elicited from the research findings and are presented as follows.

Firstly, the Chinese central government should realise that the existing national healthcare policies, which are established aiming at maintaining the equity and the coexistence of TCM and WM medical communities in the national healthcare system, are not effective and not fully implemented. Thus, more specific, clear and strong national policies should be formulated.

Secondly, the central government should recognise that the Market Economy Policy (MEP) has had a negative impact on the national healthcare system, the operation of healthcare organisations in the country and has diluted the centre of patient. Therefore, strategies need to be made aiming at reducing the negative effects of MEP and re-emphasise the centre of patient in the national healthcare service.

Thirdly, the Chinese government has the mission of educating people. This should include educating health professionals and the public on advantages and disadvantages of Traditional Chinese Medicine and Western Medicine. In this case, the two types of healthcare professionals could have more balanced social standings and could be equally respected by the public.

Finally, it is critically important to embed and increase interprofessional education programmes in both TCM and WM universities and educational institutions. Therefore, graduates from both healthcare education systems can have a foundation of trust, formulate more cooperative and collaborative relationships, an interprofessional common ground collaboration, communication and KS.

8.4. Limitations of This Study and Mitigation Strategy Adopted

The main limitation of this study lies in the selected research methods. As discussed in this thesis, this research project adopted GT as the overarching research methodology to guide the analysis of data collected in a single case-study design. The problem is, as discussed by Yin (2003), the single case-study design provides little basis for scientific generalisation. Therefore, a frequently heard question is "how can you generalize from a single case?" (Yin, 2003: 10). Similarly, like some other qualitative research methodologies, GT is often criticised as limited in generalisability (Morse, 1999). Strauss and Corbin (1998)

defend that usually a GT research study aims at developing a substantive theory, which is "developed from the study of one small area of investigation and from one specific population" (Strauss and Corbin, 1998: 267). A substantive theory can explain "specifically for the populations from which it was derived and to apply back to them" (Strauss and Corbin, 1998: 267). This research project aims at generating a substantive theory applicable to the case-study only, not aiming at generalising a theory to a broader population. Nevertheless, and certainly, the generalisability can be achieved by future studies in the purpose of generalising the substantive theory established in this project.

Another limitation is that the researcher himself grew up in a social environment very similar to the research site. Therefore, even though the personal experience helped enhancing the contextual sensitivity, it was very difficult for the researcher to be completely immersed in data, without receiving any influences from the past experience. In this case, the researcher adopted the coding definition list, quotation list and concept map to assist the practice of data analysis as well as to maintain an objective stance. The use of these analytical tools has been discussed in-depth in Chapter 4.

Furthermore, this project is conducted solely by the researcher. The identification of KS barriers is relying on the researcher's own interpretation and dependent on the theoretical and contextual sensitivities of the researcher. Nevertheless, and considering this project is the first inductive qualitative research conducted by the researcher, his own interpretation, evaluation and judgement of the data collected

may not a way, have been the best. In order to effectively minimise this limitation, three strategies were used. Firstly, during the processes of data analysis, the researcher has frequently consulted his advisor, who is a very experienced expert in the qualitative research approach and the Grounded Theory methodology, to discuss the latest findings and to thoroughly report the application of coding, constant comparative analysis and the conceptualisation of research findings. Secondly, for several times, the findings of this research project have been presented and discussed openly among academics and researchers in research seminars organised by the Information System Research Group in the Information School. In addition, the research processes and findings are reported in some papers authored by the researcher and are published in peer-reviewed international conferences and academic journals. A list of publications is presented at the beginning of this thesis.

Finally, since the aim of this project is to identify KS barriers impeding the sharing of patient knowledge, the cause and consequence relationships, which could exist between individual barriers, is not included in this study. This could be considered as an additional limitation to this study and can be explored by future works.

8.5. Future Works

This research project points to seven potential areas, which should be further explored and studied by future work.

Firstly, future work could aim at continuing the progress made in this study. That is, future work can explore the cause and consequence relationships between individual KS barriers and thus gain deeper understandings to the communication problems between TCM and WM healthcare professionals.

Secondly, the substantive theory generated in the study can be expanded and generalised by investigating other medical fields (e.g. cardiology and orthopaedics). Also, the theory generalisation can be achieved by studying other hospitals in other geographical regions in China. For this type of future work, the research findings of this project can be used as a theoretical foundation.

Thirdly, future work can focus on identifying and creating opportunities and channels for TCM and WM healthcare professionals to interact and share patient knowledge, both during the patient consultation meeting and in general processes of diagnosis and treatment provision.

Fourthly, in order to improve communication and KS between TCM and WM healthcare professionals, future works can be conducted aiming at exploring and formulating specific and practical hospital management strategies, on the basis of the identification of barriers to sharing patient knowledge.

Fifthly, as revealed by the data collected, the hospital investigated in this study does not have any information systems implemented aiming at facilitating interprofessional communication and the externalisation, storage and

transmission of patient knowledge. Therefore, future studies could be conducted to design this type of computerised communication platform connecting individual practitioners of WM and TCM, to observe problems occurred in the system implementation, and to evaluate the utilisation and effect of this system in the real life context.

Sixthly, this research study concentrates on the exchange of patient knowledge between TCM and WM practitioners. However, this study does not attempt to understand the behaviour and pattern of sharing patient knowledge within teams of TCM and WM. Therefore, future work can investigate the activities, processes and barriers of sharing patient knowledge within each medical team and examine how these internal KS behaviours affect interprofessional communication and KS.

Finally, according to the research findings, consultation notes and patient records, which are currently used in interprofessional collaboration, only include technical knowledge of patient. Thus, future works can explore the utilisation of these tools to facilitate the externalisation and transmission of patient knowledge in the processes of TCM and WM collaboration. Moreover, it is perceived that implementing ICT infrastructure and digitising these two documentations could create a more effective, efficient and convenient communication and KS platform. This could also be explored in the future.

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Appendices

To support the description of research processes and the discussion of research findings in this PhD thesis, three appendices are attached.

Appendix 1 is a sample of interview scripts used for interviewing neurosurgical professionals at the very beginning of the main study. Appendix 2 is a sample of coding definition list, which was used interactively with a quotation list, a sample of which is shown in appendix 3. These three tools have been discussed extensively in Chapter 4 Research Methodology and Design.

Appendix 1: A Sample of Interview Script for Neurosurgical Practitioners

Section 1: General Research Context
1. What is your role in the hospital?
您在医院担任什么样的工作？
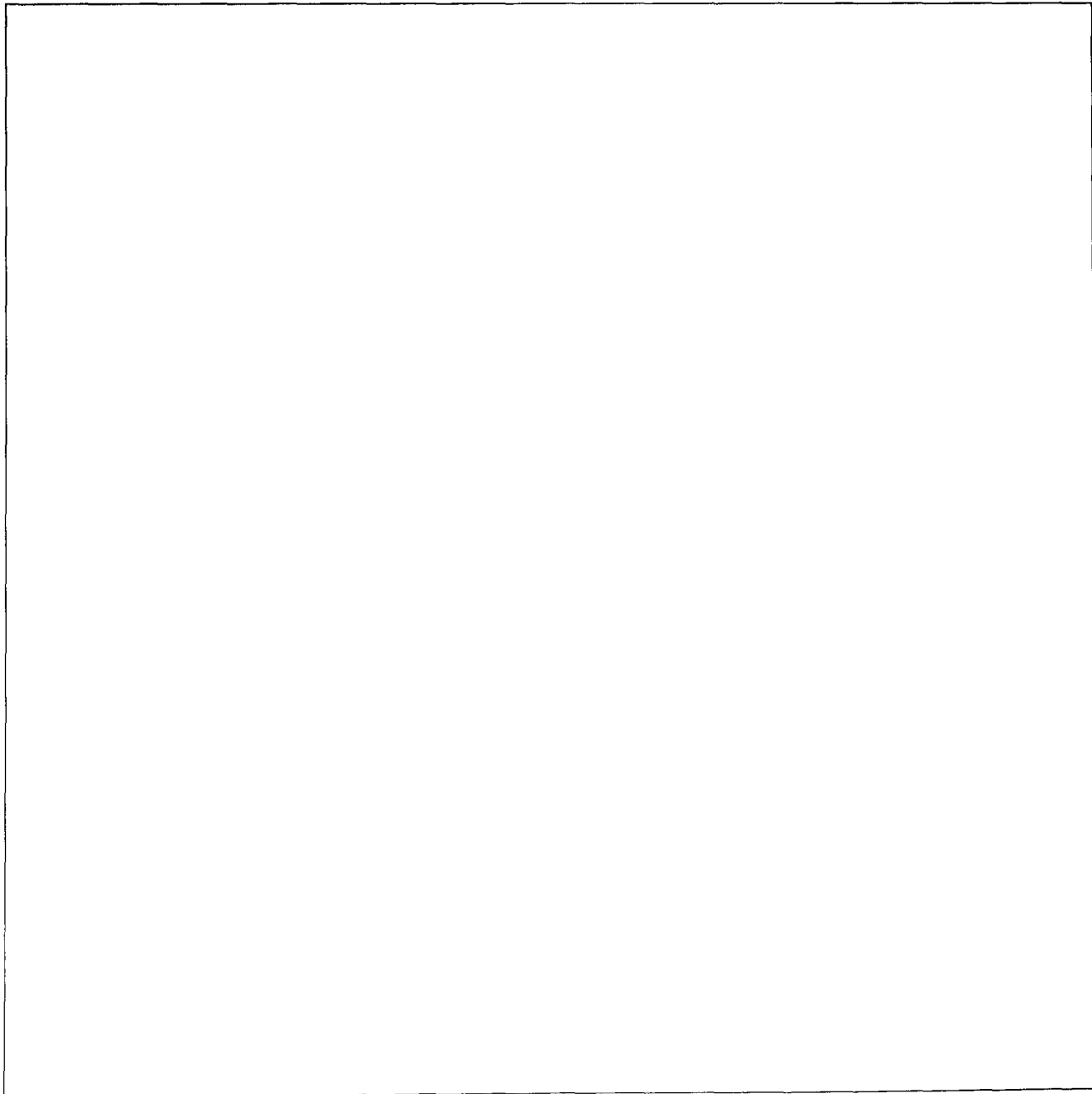
Trigger Question:
What does it involve?
这个工作具体有哪些内容？

2. Could you please generally introduce your department?

请您大概地介绍一下您的科室？

What is the role of your department in this hospital?
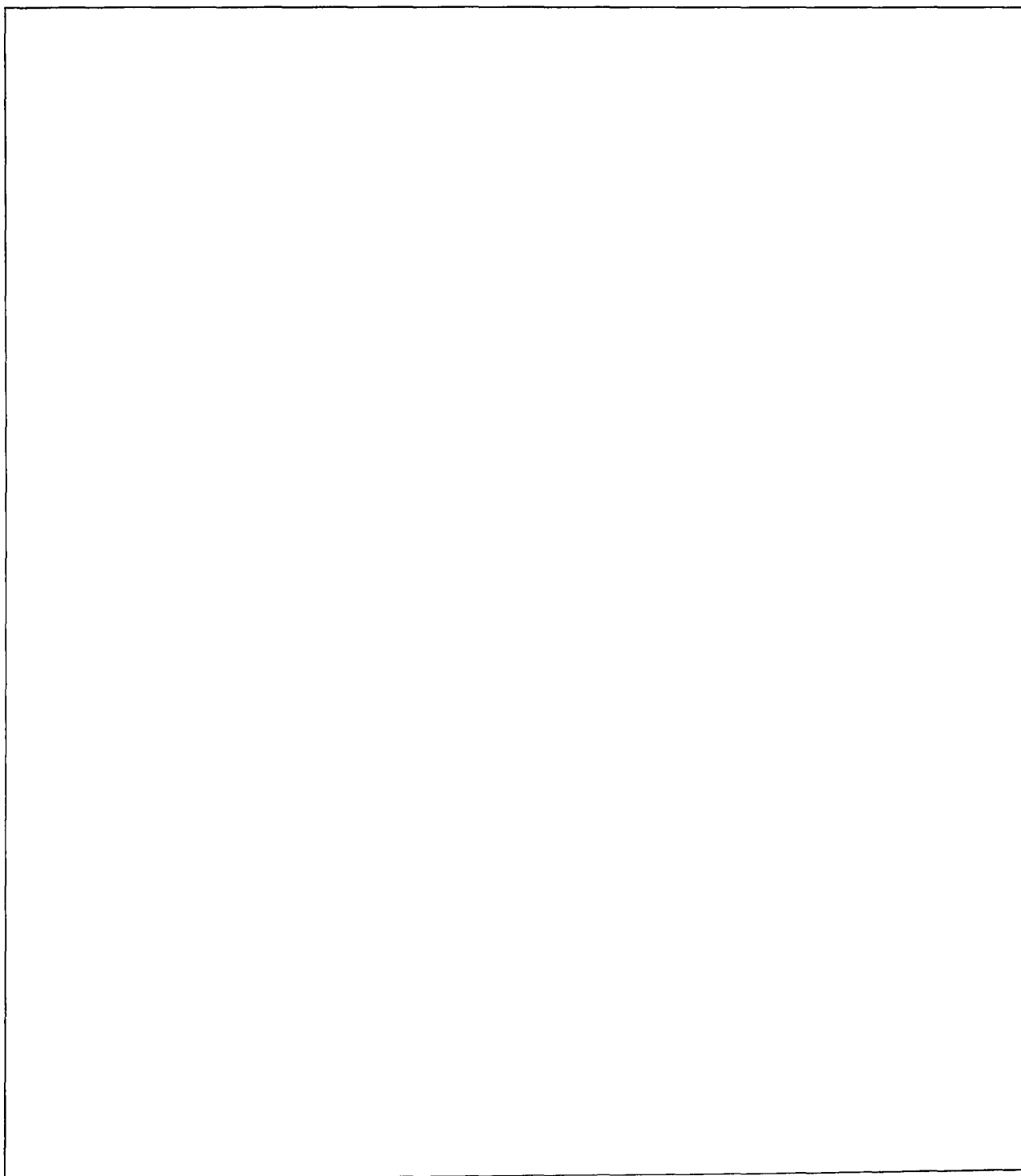
您的科室在医院里担任一个什么样的角色?

How many doctors are there in your department?

科室有多少医生？

What about your annual patient number and income?

科室每年收治多少个病人？年收入大概是多少？

3. Do you think there is a need for TCM in your treatments?

您认为在您的治疗过程中需要一些中医的帮助？

Trigger Questions:

In your practice of medicine, which areas do you think you need TCM collaboration?

有哪些地方需要中医的帮助？

What reasons do you think that you need TCM involvement?

有哪些原因使您想使用中医？

4. What do you think of this collaboration?

您怎样看待这种中西医的合作？

Trigger Question:
Do you think this kind of collaboration valuable?

您觉得这种合作有价值吗？

What do patients think?

病人是如何看待中西医合作的？

5. Are there any political emphasises on TCM and WM communication and collaboration?

国家有没有政策性的强调中西医的互相沟通以及合作呢？

Trigger Questions:
How these political emphasises effect your practice of medicine?

这些政策上的强调对您的日常诊疗有什么影响？

6. In terms of communication, how do you usually communicate with TCM doctors?
对于沟通渠道而言，通常您是如何与中医交流的？

<u>Trigger Questions:</u>
What communication channels you are using both formally and informally?
在这种沟通当中，正式的和非正式的沟通渠道有哪些？
What do you think about these communication channels?
您如何评价这些沟通渠道？

<u>Follow-up Questions:</u>
Are there any limitations on consultation as formal communication channel?
会诊这种沟通渠道有什么局限性？
What strategy do you think can improve the communication across these two communities?
有哪些策略能够加强中西医之间的沟通？
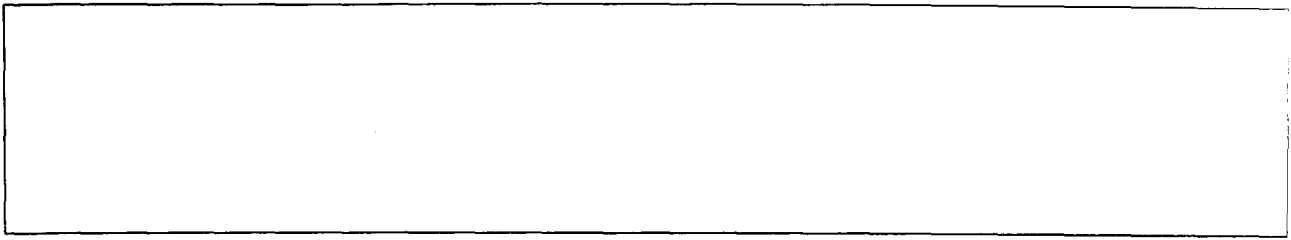
Section 2: Exploration of KS Barriers
7. What are the philosophical differences between TCM and WM?

中医和西医的理论有哪些区别？

<u>Trigger Questions:</u>
How do these differences impact on interaction about individual patients when you are working with TCM doctors?

这些理论上的区别是如何影响必要的信息交流，关于病人的情况和一些相关信息？
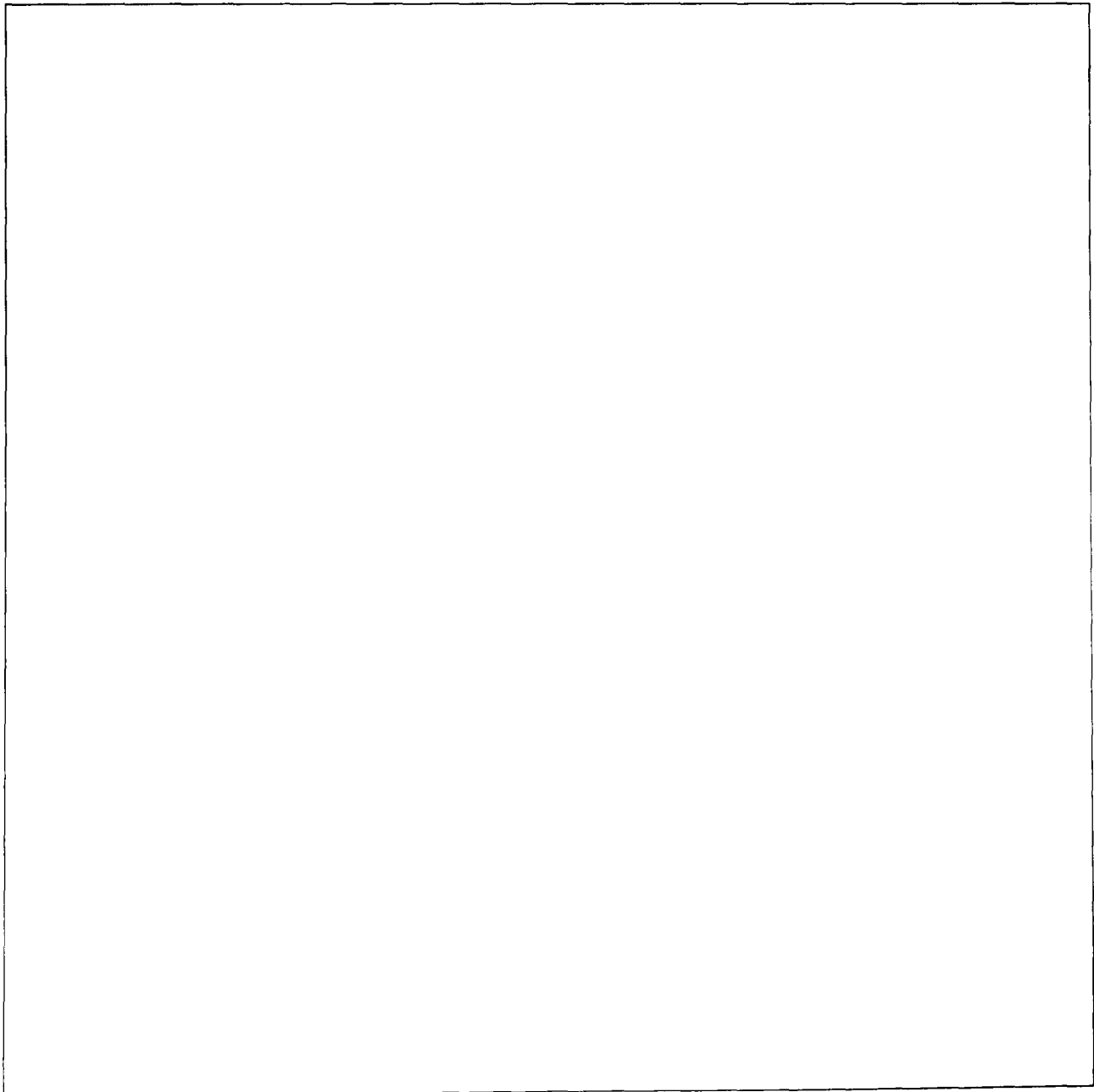
8. Certainly that WM and TCM professionals use rather different professional terminologies, how do these differences effect your communications and KS about patient?

中西理论上的差别当然也造成了中西医的术语体系的不同。这些术语体系的不同是如何影响中西医之间关于病人的一些沟通和知识共享？

Follow-up Questions:
What would you do when you find out you can't understand each other's language?

在沟通过程中如果遇到不懂得专业术语，您会如何处理？

What strategies you use in order to overcome these terminological differences?

您使用那些方法来减小专业术语的不同给交流和知识共享带来的障碍？

9. There were two movements in history intended to eliminate TCM, what do you think of these movements?

在中国的近代史上有两次政治运动目的在灭除中医。您是怎样看待这两次运动的？

<u>Follow-up Questions:</u>
What are the impacts caused by these two movements to the current situation?

这两次运动对现在有什么样的影响？
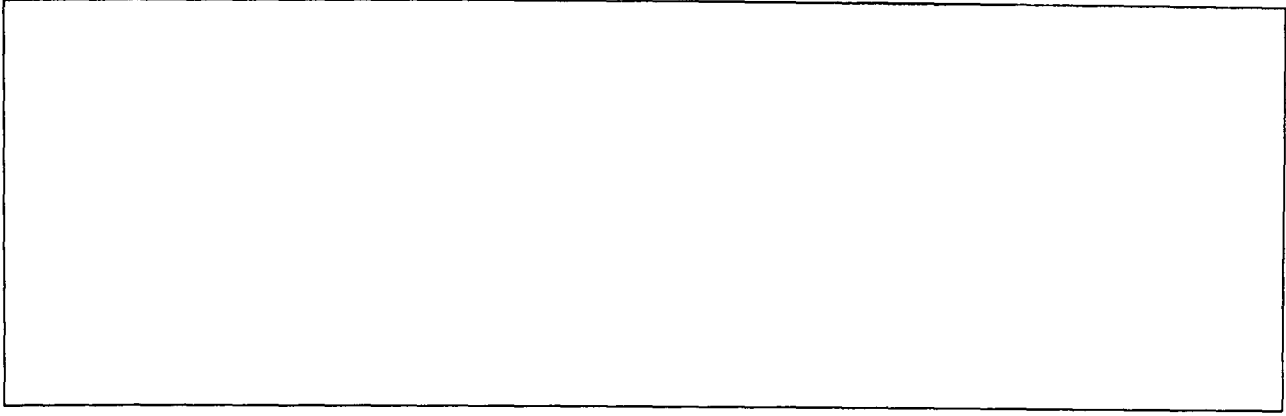
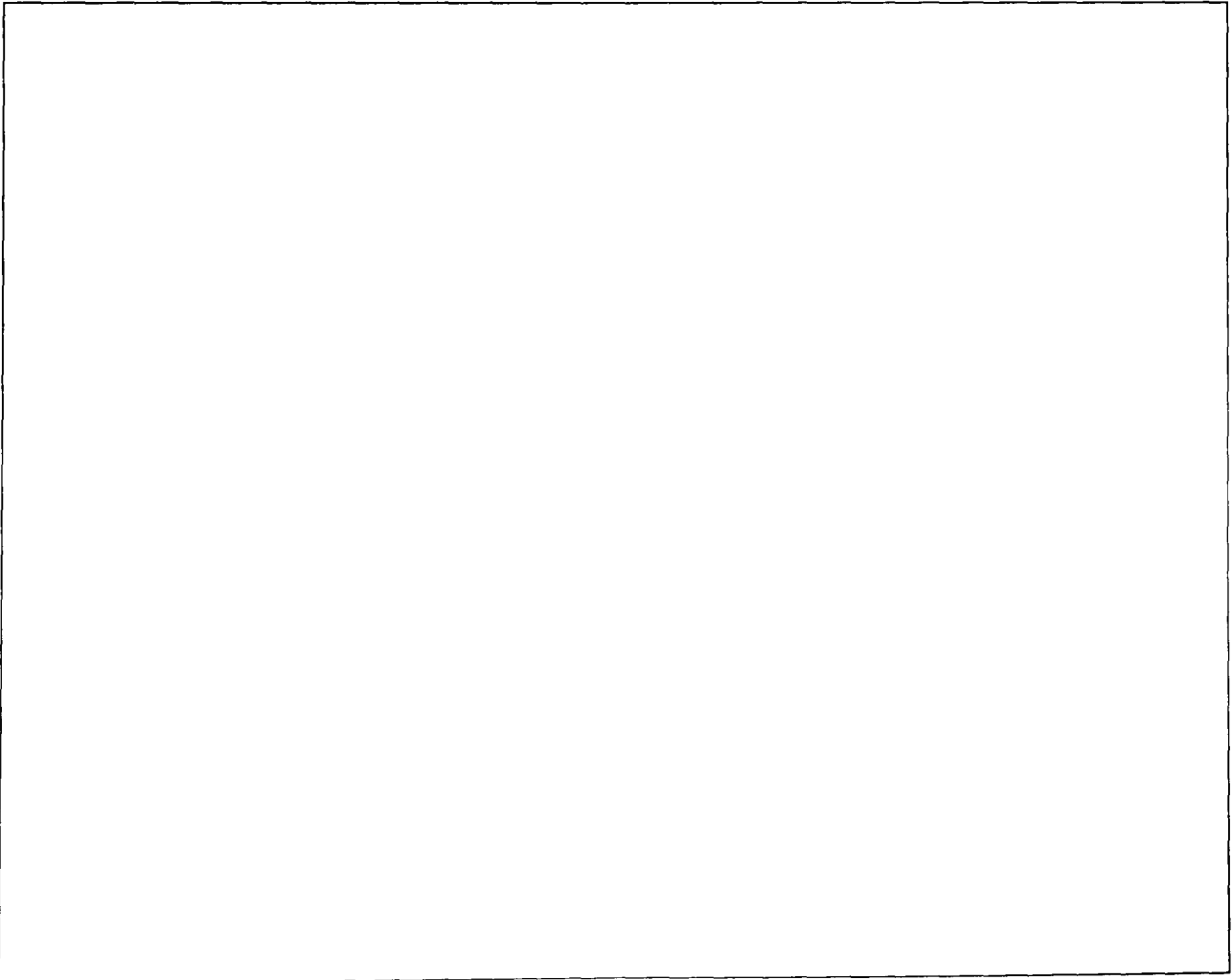10. Can you generally introduce WM and TCM education systems in China?
您能不能大概的介绍一下西医和中医的教育？

Trigger Questions:
What do you think of this education structure in terms of supporting WM and TCM communication?
从支持西医和中医的交流上，您如何看待中国的医疗教育体系？
Why did the government design educational structure in this way?
从支持西医和中医交流的角度出发，政府在设计这样一个中西医的教育结构上是出于一个什么样的考虑？

11. What professional learning strategies have been implemented in your hospital?
现在您们医院有没有一些策略来促进医生的学习？

Follow-up Questions:
What do you think of these learning strategies in supporting TCM and WM communication and collaboration?
这些促进医生学习的策略对中西医的合作有没有一些帮助？

12. Can you generally introduce doctors' and nurses' career progression in your department?

您能不能介绍您们科室医生晋升的情况？

Follow-up Questions:
Do TCM doctors have the same career progression structure?

中医的医生是不是大致也是这样一个情况？
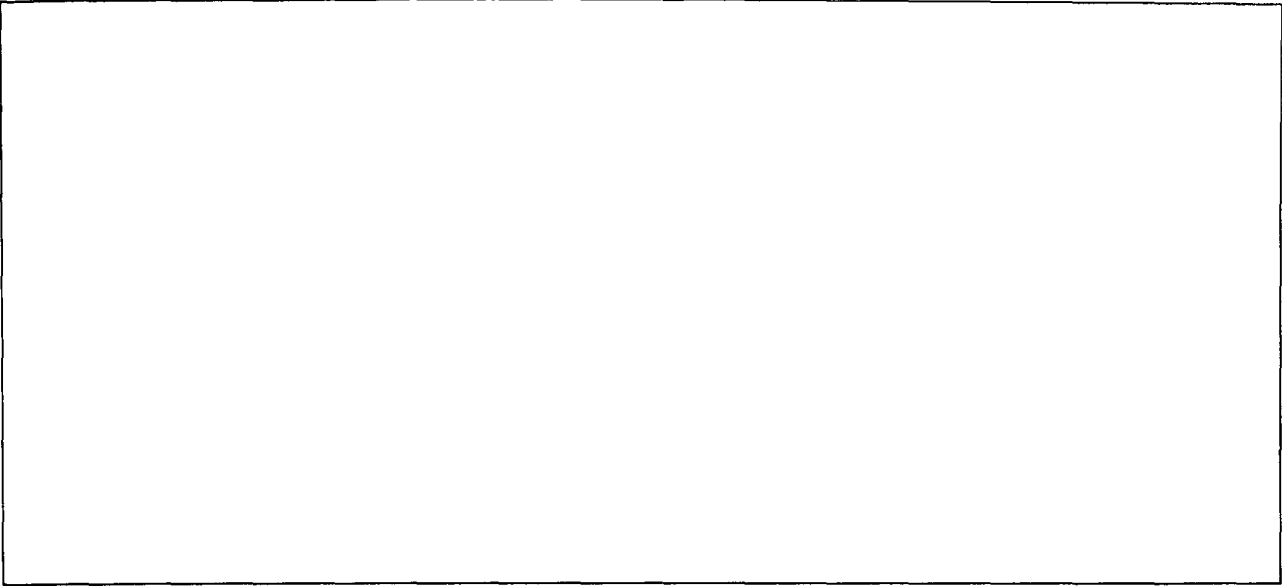
13. What is the role of hospital management in encouraging knowledge sharing and communication between TCM and WM?

在支持中西医交流和知识共享这方面，医院的管理者是充当一个什么样的角色？

Follow-up Questions:
Is there any inequality in management support between TCM and WM departments?
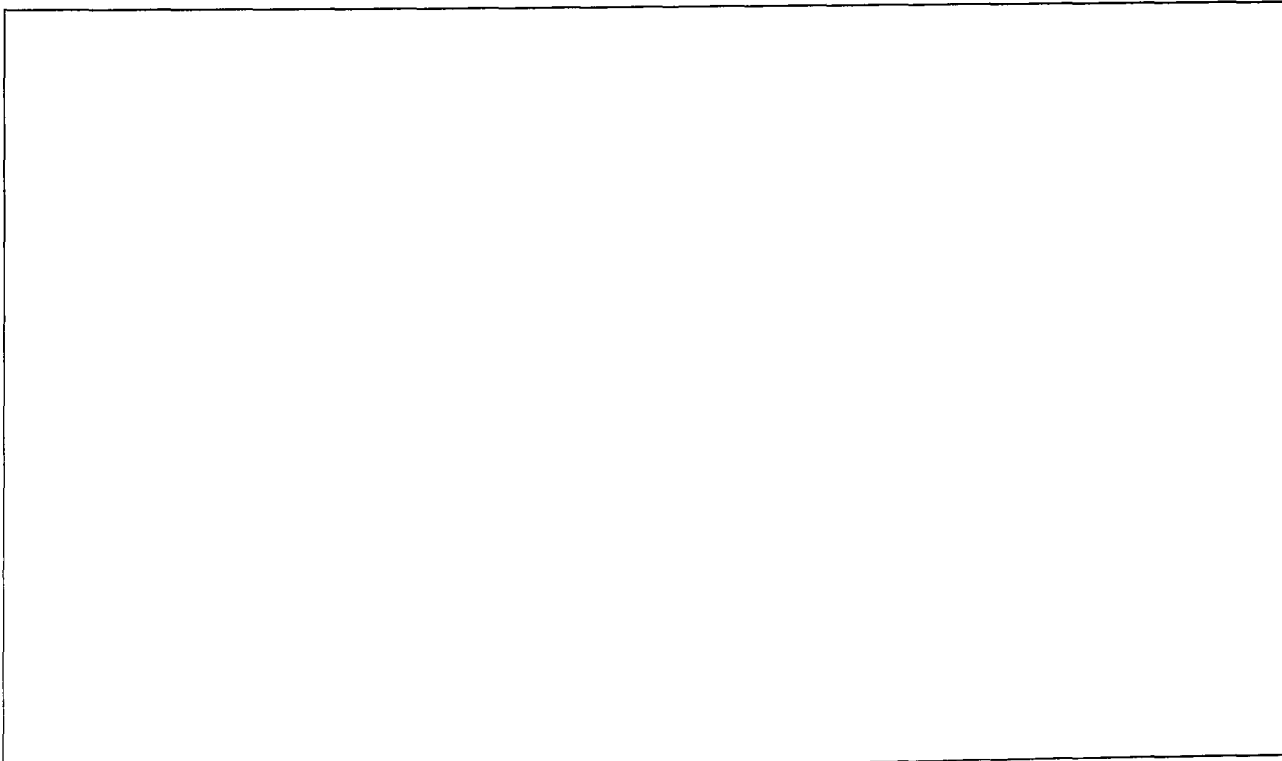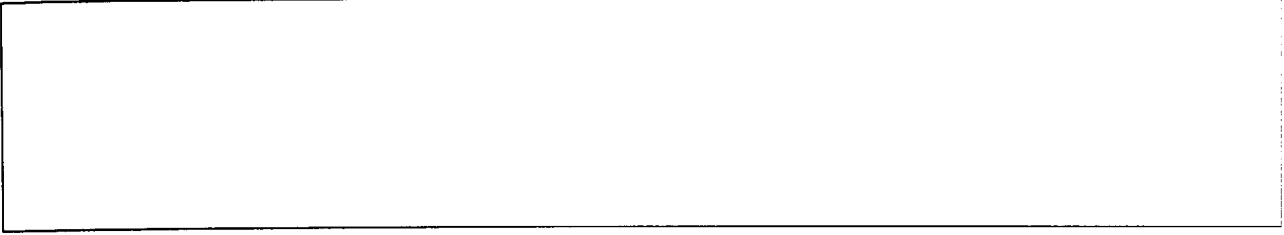
医院管理在对中西医科室的扶持上，会不会有偏差？

Any reason for this?

您觉得原因是什么？

What do you think about the market economy? Is it a strong impact to TCM?

您是怎样看待市场经济的？是不是对中医有比较大的打击？

Appendix 2: A Sample of Code Definition List

Category of Philosophical Issues

Sub-Categories	3rd Level Categories	Concepts	Codes	Definition
Philosophical Conflicts	Different Conceptual Systems	Holistic VS Localised Approach to Practice	[TCM took holistic view, whereas WM took micro view of patients' problem]	TCM doctors take a holistic view to see patient, where WM doctors use a micro view.
		Different Diagnostic Methods	[TCM and WM have very different diagnosis methods]	TCM and WM professionals use very different diagnostic methods.
		Different Treatment Methods	[TCM and WM have different treatments]	TCM and WM professionals use very different treatment methods to resolve patient problems.
		Divergent Theoretical Grounds	[Non-Quantify of TCM WM]	From WM professionals' perspective, WM is based on accurate quantification, whereas TCM is not quantifiable.
			[None-Quantify of TCM TCM]	From TCM professionals' perspective, WM is based on accurate quantification, whereas TCM is not quantifiable.

		Terminology Discrepancies	[Terminology Difference]	From WM professionals' perspective, terminologies of TCM and WM are entirely different.
			[Terminology Difference TCM]	From TCM professionals' perspective, terminologies of TCM and WM are entirely different.
		Conflicts of Philosophical Beliefs	[Disagree WM]	TCM doctors do not agree with WM methods and beliefs.
			[Don't Believe TCM TCM]	TCM doctor provided that WM doctors do not believe TCM philosophy.
			[Feel Discriminated]	Due to WM doctors do not believe TCM philosophy, TCM doctors felt discriminated, pessimistic, and sad.
		Inadequate Interprofessional Common Ground	[Communication Needs Basic Knowledge]	KS and communication needs mutual and common knowledge.

Appendix 3: A Sample of Quotation List

Category of Philosophical Issues

Sub-Categories	3rd Level Categories	Concepts	Codes	Quotations
Philosophical Conflicts	Different Conceptual Systems	Holistic VS Localised Approach to Practice	[TCM took holistic view, whereas WM took micro view of patients' problem]	**TCM 6.72** 这些有迷信色彩，但是涉及到宏观世界，微观世界觉得是一种迷信。这是观念和学术理论的不同的体系。如果不采取了解和包容的态度很可能认为是迷信。你说阴阳五行，从这个自然观念来看，排除迷信色彩，还是一环扣一环，跟这个生物链一样的。 **TCM 18.07** 基本上不可能把中医和西医完全结合在一起，因为中医采用的是宏观的角度看病人。这个是最基本的理论基础 "It is almost impossible to integrate both TCM and WM methods into one medical procedure. It is because TCM takes a holistic view of human body, which is the philosophical foundation for TCM." Interview TCM 18.7

				WMD 24.9
				西医总是很微观的看身体具体的某一个部位。你如果头有问题就医头，如果脚有问题就医脚。但是中医是把病人看作一个整体。他们不光是看那一个病症，所以西医是从微观的角度，中医呢是从一个整体的角度。
				"WM always localises diseases into particular parts of human body. If you have a head problem, then treat the head. If you have problems with your feet, then treat the feet. However, TCM treats a patient as a whole. They [TCM doctors] are not just dealing with the disease itself. Therefore, WM is from a micro perspective, TCM is holistic". Interview WMD 24.9
				TCM Politician 34.3
				中医讲的是整体的治疗，讲宏观讲经验，或者说它是个模糊科学。西医就是来自于实验室的，它是一个精密科学。或者就是叫做数字科学。这两个体系要融合，融合起来不容易。