Comparing doctor–elderly patient communication between traditional Chinese medicine and Western medicine encounters: Data from China

YING JIN AND DENNIS TAY
Hong Kong Polytechnic University

Abstract
Effective doctor–patient communication has been widely endorsed as pivotal for optimal medical care and the building of a positive and lasting relationship between caregivers and patients. While the literature suggests that traditional Chinese medicine (TCM) doctors have better interpersonal skills than Western medicine (WM) doctors, and that the doctor–patient relationship in TCM is more lasting, a comparison of specific communication behaviors in both encounters has not yet been carried out. This paper examines the similarities and differences in communication behaviors between these two types of consultations in relation to doctor–elderly patient communication. Forty-five consultations were included for analysis using the Roter Interaction Analysis System (RIAS). Significant differences were found in communication behaviors at the level of lifestyle and psychosocial exchanges, type of questions, non-medical small talk, and emotional disclosure. The study's limitations and implications are discussed.

Keywords: elderly patients; lifestyle and psychosocial topics; RIAS; traditional Chinese Medicine; western medicine

1. Introduction

Western medicine (WM) and traditional Chinese medicine (TCM) coexist as a medical dualism in China, their two approaches differing in their nature, philosophy, and means of diagnosis. For example, WM doctors frequently rely on medical apparatus or laboratory tests to identify the cause of an illness, whereas TCM doctors diagnose a disease via a series of physical examinations including *wang* (inspection), *wen* (auscultation and olfaction), *wen* (inquiring), *qie* (palpation), and *zhen* (diagnosis) (Gu 1999; Xu and Yang 2009), all of which require close interactions between doctors and patients. With a belief that the human body is a holistic unity, TCM highlights the regulation of the human organism as a whole and therefore 'pays more attention to the diseased patient rather than the disease' (Luo *et al.* 2013: 305). A number of studies have reported better communication in TCM than in WM consultations: in contrast with WM, TCM encounters feature (1) a continuity in the doctor–patient relationship (Gu 1996, 1999), (2) more intensive listening on the part of the doctor (Chung *et al*. 2009; Zhang and Sleeboom-Faulkner 2011), (3) more small talk (Wang 2010), and (4) a free flow of communication as both doctors and patients initiate topics and share experiences (Zhang 2007). However, no systematic comparison has been conducted regarding participant communication behaviors, even though there has been a recent trend both in China and elsewhere to combine TCM and WM services within one hospital, and a majority of elderly patients in China have TCM consultation experience. An exploration of the differences in communicative styles is thus important, for two reasons: different communicative styles may affect the performance and expectations of both doctors and patients in clinical consultations, and therefore patient satisfaction; and with the trend to combine TCM and WM, with Chinese patients tending to use concurrently (Lam 2001), understanding of clinical practices in both forms may facilitate

intra-professional communication so that doctors from both practices can know how other professionals communicate with their clients. This paper presents a study of the similarities and differences between TCM and WM clinical consultations in relation to doctor–elderly patient communication behaviors in China. This is a subject that is very under-researched in both language studies and health profession studies. The paper begins with a review of scholarly approaches to doctor–elderly patient communication in WM practice, followed by a description of methodological concerns, including participant recruitment, transcription, and coding. Findings are then discussed in detail in the results and discussion sections. The paper concludes with a brief summary of the findings and a reflection on methodological limitations.

2. Doctor–elderly patient communication in WM

As the population ages, elderly patients represent an increasingly large segment of healthcare service users. Moreover, several factors complicate the diagnosis and treatment of this group: elderly patients often have multiple physical disorders, while deteriorating cognitive impairment may make them more prone to medication-related problems (Pelicano-Romano *et al.* 2013). Elderly patients are also frequently psychologically more dependent than younger patients, and have special communication needs (see e.g. Williams *et al.* 2007). The subject of doctor–elderly-patient communication in WM has been considered by a series of path-breaking studies, in many cases by Ronald Adelman and Michele Greene and colleagues. These studies have noted the less-preferred status of elderly patients in their communications with their doctors (Greene *et al.* 1986; Adelman *et al.* 1990), insufficient regard for the psychological concerns of elderly patients (Rost and Frankel 1993; Greene and Adelman 1996), a lack of responsiveness to issues raised by elderly patients (Adelman *et al.* 1991), less shared decision making in clinical consultations (Greene *et al.* 1994), and that young patients raise more psychosocial topics than the elderly (Greene *et al.* 1987; Greene and Adelman 1996; see also more generally Adelman *et al.* 1990). However, while doctor–patient behaviors in WM practice have been researched both qualitatively and quantitively, TCM has not been explored in the same way.

3. Methodology

3.1. Research context

The study was undertaken at a public hospital in mainland China. Medical institutions in China are ranked in accordance with a three-tier healthcare provision system (Tang 2011), and then further graded within each level into first, second, and third grade. The chosen hospital is a third-level referral (first grade) hospital, which means that it provides a wide array of healthcare services, performs multiple tasks of teaching and research, and takes on the most serious medical-care responsibilities. The study was approved by both the Ethical Committee of the hospital and by Hong Kong Polytechnic University[1].

3.2. Recruitment of participants

All of the patient participants were drawn from a larger study of doctor–elderly-patient communication in the outpatient department of the hospital's Internal Medicine Division, and were receiving both TCM and WM services. Six doctors – three from the Division of Gastroenterology and three from the Division of Internal Traditional Chinese Medicine – participated, recruited with the cooperation of the director of the Division of Gastroenterology. The doctors were all females, as the male doctors were unavailable at the time of

data collection. Patients were approached by the researcher in the waiting area outside the outpatient department. To be eligible, patients had to be (1) at least 50 years old (age of retirement), (2) formally diagnosed with a legitimate clinical report of chronic gastritis, and (3) capable of independent communication, with no cognitive disorders. Chronic gastritis was chosen as the specific disease condition as this is a key specialism of the hospital, and the Division of Gastroenterology accepts a great number of outpatients and inpatients. Further, patients with a chronic illness more often consult both WM and TCM. Forty five patients (15 males; 30 females) were finally recruited for the study, with an age range from 50 to 84 years, averaging at 64 years. Written informed consent was collected from the patients after a brief verbal explanation of the research protocol. The patients were told in advance that their consultations would be audio-recorded. They were also reassured (1) that their names would not appear in any of the recordings, (2) that the study has no potential risks for the participants, and (3) that they were allowed to withdraw at any stage. Participant response rate was 37.5%.

3.3. Recording, transcription, and coding
Clinical consultations were recorded and then transcribed verbatim following the conventions of Conversation Analysis (CA) (Jefferson 1984, 2004). They were also coded following the conventions of Roter Interaction Analysis System (RIAS), using Nvivo 11 Professional. As noted by Sandvick *et al.* (2002), RIAS is less powerful in capturing the turn-by-turn sequence in a dyad, and so a combination of RIAS and CA allows quantitative analysis (the core function of RIAS) of different behaviors under qualitative investigation of the turn-by-turn context within which these behaviors are socially organized. As suggested by Robinson (2011), CA qualitatively validates RIAS, and RIAS quantitatively empowers CA. The average time of recording is 5.02 minutes (SD = 2.24) for TCM and 3.43 (SD= 2.07) for WM consultations. All the data were translated into English for illustrative purposes, but the contents were analyzed as per the original language.

3.4. Coding categories
The unit of analysis is the utterance, defined as 'the smallest discriminable speech segment to which a coder can assign a classification and which expresses or implies a complete thought' (Roter *et al.* 1987: 440). This unit can be as lengthy as a sentence with a full stop or as short as a single word. According to the RIAS system, each utterance is assigned one of 43 exclusive categories, comprising 29 instrumental and 14 socio-emotional categories tailored for both doctor and patient (Sandvik *et al*. 2002). These categories reflect both the form (e.g. giving directions) and the content (e.g. lifestyle) of the interaction. In this study, following Roter and Larson (2001), the categories were grouped into 11 types of communication behaviors, which were further aggregated into four general functional groupings based on shared commonalities (see Table 1 with examples). An additional type called *missing value* wasadded, which includes unfinished and unintelligible utterances that are difficult in terms of assigning their communicative functions. Unfinished utterances refer to cut-off utterances that are mainly caused by interruptions. Furthermore, an examination of the data shows that utterances concerning physical exams are frequently expected in WM consultations; they are not so in TCM interactions. Therefore, an extra content code labelled *physical exam* was added. It is noteworthy that while utterances were coded in exclusive terms, they are often multi-functional. The coding decision was made based on both the local context and the speaker tone. For example,

the utterance from a TCM doctor 不然的话这个化疗真的是蛮伤人的 ('otherwise, the chemotherapy really hurts very much') can either be a statement showing concern or a statement giving information about the therapeutic regimen. In this example, the doctor is recommending her patient take a PET-CT, a nuclear medicine technique used to acquire images of the body, for the diagnosis of metastasis. The underlined expressions 真的 ('really') and 蛮 ('very much') are used to highlight the intensity to which the word 'hurt' indicates. Thus, the doctor is persuading the patient to take a physical exam before choosing chemotherapy. Additionally, according to the RIAS manual, when an utterance can be coded as either instrumental or affective, the rule of thumb is to code it as affective so that implicit affective messages can be sought (Ong *et al.* 1998; Roter 2008). Therefore, the utterance in the example was coded as showing concern. Another challenge is the coding of psychosocial exchanges and emotional talk. The former describes behaviors of lifestyle-information giving and counseling. For example, in one of the WM consultations, the doctor said 饮食么你就注意一下哦 尽量吃容易消化的 ('be careful about your diet and eat something that is easy to digest').

Table 1. *Categories of the RIAS in this dataset*

Functional Grouping	Communication behavior	Categories	Examples Doctor	Examples Patient
Data gathering	Closed questions	medical condition; lifestyle; therapeutic regimen; physical exam; others	白天喝水多吗 'Do you drink lots of water in the daytime?'	这个吃饭服药吗 'Does it matter what I eat?'
	Open questions	medical condition; lifestyle; therapeutic regimen; physical exam; others	痰什么颜色 'What's the color of your sputum?'	我咳嗽胃有没有影响的 'Will the cough do any harm to my stomach?'
	Bid for repetition		什么 'What?'	啊 'Ah?'
Education and counseling	Biomedical information	giving information; counseling (medical; therapeutics; physical exam); bid for repetition; request for service (patient only)	胃肠道有点痉挛 'Your pain might be caused by stomach cramps.'	我头晕 'I feel dizzy.'
	Psychosocial exchange	giving information (lifestyle); counseling (lifestyle) (doctor only); self-disclosure (doctor only)	像你年纪大就不要吃得太凉啦 'Given your age, you should avoid eating cold stuff.'	最近我都不喝绿茶了。 'I stopped drinking green tea these days.'
Relationship building	Positive talk	agreement/approval; laughter; joke/humor; compliment (patient only)	好的 'Okay.'	嗯，对的。 'Yes, you're right.'
	Negative talk	disapproval; criticism	那是不可能的 'That's impossible.'	这指标对我来说没有任何意义。 'The index is meaningless to me.'
	Emotional talk	showing concern; reassurance/optimizing; legitimation	脸色那么难看 'You look so pale.' 大部分的人吃了这个药就会好的 'Most people infected with H. Pylori can be cured after taking the medicine.'	怎么经常有淤青的？ 'Why I always have bruises on my body?'
	Social talk	small talk unrelated to the purpose of the current medical visit	这么冷的天还去钓鱼啊 'You went fishing on such a bad day?'	这个还蛮好吃的 'That tastes good.'
Partnership building	Facilitation	ask for opinion (doctor only); ask for understanding; check/paraphrase, backchannels	嗯 'Um'	什么意思？ 'What do you mean?'
	Orientation	orientation	别动 'Don't move.'	医生啊左边盖个章 'Doctor, here, seal the document on the left.'
	Missing value	unintelligible; unfinished		

Emotional talk includes utterances that show speaker concern (Example 1) and those that are optimizing/reassurance (Examples 2 and 3). In each of the following examples, D stands for Doctor and P stands for Patient.

Example 1 (WM)
P: 我只怕到时候晚期了 那不是讨厌了啊。
i feel worried that by the time it becomes an end-stage disease it would be troublesome.

Example 2 (TCM)
D: 好一点了。
you're getting better.

Example 3 (TCM)
P: 好一点起来了啊?
am I?

In Example 1, the underlined expressions 怕 ('worried') and 讨厌 ('troublesome') reflect the emotional state of the patient. In Example 2, the doctor shows optimism to the patient by telling him that he is getting better. In Example 3, the patient asks for reassurance by repeating what the doctor had told him. Some RIAS categories were not consistently observed in all interactions, particularly the categories related to relationship building (positive and negative talk, and social talk), which has both quantitative and qualitative implications. This indicates that these categories are not prototypical, at least in the present datasets of TCM and WM consultations, and suggests a less-than-close relationship
 between doctors and patients.

3.5. Inter-rater reliability
To determine reliability, test-retest reliability was measured with the same order with a one-month interval (intra-class correlation coefficient is 0.9, indicating a high agreement). Most of the items were consistently coded, though minor disagreement was found on some utterances. For example, the utterance 可不可以做个肝功能 ('can I have the liver test') was coded differently by the researcher as either patient closed question (physical exam) or patient request for service. The disagreement was discussed with an experienced linguist in our department and consensus was finally reached: the former interpretation indicates an attempt to collect further information about a particular physical test, while the latter points to statements indicating a direct need of the patient, as in some cases such statements are phrased in a question format. Thus utterances like 结肠可以和直肠一起做吗 ('can I take the colonoscopy and proctoscopy together') are coded as patient closed question (physical exam) while utterances like 'can I have the liver test' were coded as request for service.

3.6. Variables and analytical procedure
Frequencies of different communication behaviors by both doctors and patients were counted. These raw frequencies were then converted into rates by dividing them by the total number of utterances that a speaker had produced during the consultation. Following Pahal and Li (2006), rates were then averaged over all the medical interactions in both TCM and WM encounters, to determine the mean percentage of different communication behaviors in the two types of medical encounters. Normal distribution was checked. Rates of the RIAS categories were treated as the dependent variables with type of consultation (TCM or WM) as the independent variables. Independent sample T-test was used for items that were normally distributed, and Mann-Whitney U for those of which normal distribution was not observed.

4. Results

4.1. Visit duration and number of utterance

TCM consultations are noticeably longer than WM consultations. Mean length of visit per consultation is 5.02 minutes (SD = 2.24) for TCM and 3.43 (SD = 2.07) for WM, $t(43)$ = 2.42, P < 0.02. Consequently, more exchanges were observed between TCM doctors and patients. The average number of utterances produced by participants was 91.06 (SD = 53.44) for TCM consultations and 57.93 (SD = 36.43) for WM consultations, $t(43)$ =2.48, P < 0.02. Although significant differences were identified in terms of both time and the overall number of utterances, no statistically significant variation has been found in relation to the number of utterances per minute between these two kinds of interactions.

4.2. General description

Mean percentages of different participant communication behaviors were averaged and summarized (see Table 2). Note that not all behavior categories appear consistently across the 45 consultations. For example, doctors' negative talk appears in only five of the 17 TCM consultations and two of the 28 WM consultations; for those categories, higher standard deviation than the mean was observed, indicating that not all the categories are prototypical in this dataset. In both types of consultations, doctors mainly engaged in data gathering by asking questions, and patient education by giving information. In TCM encounters, 32% of the doctor talk was related to data gathering, compared with 24% in WM consultations. Biomedical information giving comprised 18% and 33% respectively of doctor speech in TCM and WM consultations. Patient talk was characterized by the predominance in giving biomedical information (47% in TCM visits and 51% in WM visits), concerning mainly medical conditions and therapeutic regimen. Additionally, patients were also found to be verbally active in relationship-building behaviors mainly through giving positive comment (16% in TCM and 15% in WM visits). Table 3 and Table 4 are modifications of the SPSS output which display participant differences in communication behaviors between TCM and WM consultations. Comparisons were made at the level of both functional grouping and different communication behaviors. Only results with statistically significant differences were presented. Mean number of utterances meant for patient education and counseling by doctors was larger in number in WM (M = 0.23,SD = 0.15) than in TCM (SD = 0.33, SD = 0.18) consultations, $t(43)$ = 2.1, P < 0.05, d = 0.6. However, closer investigation of specific communication behaviors shows a different pattern. While WM doctors were observed to produce more utterances at the level of biomedical information collection, they contributed less in psychosocial exchanges (to be discussed further in detail in Sections 4.3 and 4.4). Although doctors' efforts in data gathering were statistically not significant, TCM doctors raise more open questions than their colleagues (Section 4.5). In relation to patient contributions, WM patients were observed to raise more questions, and especially closed questions, than TCM patients

Table 2. *Doctor–patient speech in this data (Roter and Larson 2001)*

Functional Grouping	Behavior categories	TCM				WM			
		Doctor		Patient		Doctor		Patient	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Data gathering	Closed questions	0.26	0.13	0.06	0.05	0.21	0.14	0.14	0.11
	Open questions	0.06	0.05	0.01	0.02	0.03	0.06	0.01	0.02
	Bid for repetition	0.01	0.02	0.01	0.01	0	0	0.02	0.03
Education and counseling	Biomedical information	0.18	0.14	0.47	0.11	0.33	0.19	0.51	0.19
	Psychosocial exchange	0.06	0.08	0.1	0.07	0.01	0.02	0.01	0.01
Relationship building	Positive talk	0.06	0.04	0.16	0.1	0.08	0.09	0.15	0.11
	Negative talk	0.01	0.02	0.01	0.01	0.01	0.06	0.01	0.02
	Social talk	0.06	0.06	0.08	0.09	0	0.02	0	0
	Emotional talk	0.04	0.04	0.02	0.03	0.01	0.02	0.02	0.06
Partnership building	Facilitation	0.18	0.12	0.06	0.05	0.19	0.11	0.1	0.09
	Orientation	0.11	0.09	0.02	0.05	0.11	0.1	0.01	0.03
Missing value	Unfinished	0	0	0	0	0.01	0.31	0.03	0.04
	Unintelligible	0	0	0.01	0	0	0.01	0.01	0.01

Table 3. *Significance value and effect size of doctor speech between TCM and WM encounters*

	Functional grouping	Encounters	Mean (std.)	Sig.	Effect size
Parametric	Patient education and counseling	TCM	0.23 (0.15)	$P<0.05$	$d=0.6$
		WM	0.33 (0.18)	$t(43)=2.1$	
	Communication behaviors	**Encounters**	**Mean (std.)**	**Sig.**	**Effect size**
Parametric	Questions (open)	TCM	28.03	$p < 0.05$	$r=0.3$
		WM	19.95	$U=152.5$	
	Biomedical information	TCM	0.18 (0.14)	$P<0.01$	$d=0.9$
		WM	0.33 (0.19)	$t(43)=2.9$	
	Communication behaviors	**Encounters**	**Mean rank**	**Sig.**	**Effect size**
Non-parametric	Psychosocial exchange	TCM	28.65	$p<0.01$	$r=0.5$
		WM	19.57	$U=142$	
	Social talk	TCM	31.29	$p<0.01$	$r=0.6$
		WM	17.96	$U=97$	
	Emotional talk	TCM	29.68	$p<0.01$	$r=0.5$
		WM	18.95	$U=124.5$	

(Section 4.5). Additionally, while no difference was found at the level of doctor relationship building, further investigation reported more doctor contribution at the level of social and

emotional talk in TCM interactions (Sections 4.6 and 4.7). Likewise, TCM patients also engaged more actively in social talk (Section 4.6).

4.3. Psychosocial exchange
Doctors in TCM consultations were significantly more informative at the level of psychosocial exchange than WM doctors, $U = 142$, $p < 0.01$, $r = 0.5$, indicating a large effect size. Similar to doctors' performance, patients in TCM visits engaged in significantly more psychosocial talk than those in WM visits, t(16) = 5.29, P < 0.01, d > 1. WM visits, $t(16) = 5.29$, $P < 0.01$, $d > 1$.

Table 4. Significance value and effect size of patient speech between TCM and WM encounters

	Functional grouping	Encounters	Mean (std.)	Sig.	Effect size
Parametric	Patient data gathering	TCM	0.07 (0.06)	P<0.01	d>1
		WM	0.17 (0.11)	t(43)=3.7	
	Patient relationship building	TCM	0.27 (0.11)	P<0.03	d=0.7
		WM	0.18 (0.14)	t(43)=2.3	
	Communication behaviors	**Encounters**	**Mean (std.)**	**Sig.**	**Effect size**
Parametric	Psychosocial exchange	TCM	0.1 (0.07)	P<0.01	d > 1
		WM	0.01 (0.01)	t(16)=5.29	
	Questions (total)	TCM	0.07 (0.06)	P<0.01	d = 0.9
		WM	0.15 (0.11)	t(42)=3.1	
	Questions (closed)	TCM	0.06 (0.05)	P < 0.01	d = 0.9
		WM	0.14 (0.11)	t(40)=3.52	
	Communication behaviors	**Encounters**	**Mean rank**	**Sig.**	**Effect size**
Non-parametric	Social talk	TCM	32.06	p<0.01	r = 0.7
		WM	17.5	U=84	

4.4. Biomedical information
For WM doctors, an average of 33% of their total utterances concerned biomedical information giving, compared to 18% in the case of TCM doctors, $t(43) = 2.9$, $P < 0.01$, $d = 0.9$ – which according to Cohen (1992) is a large-sized effect. No difference has been found in patient behaviors of this nature between the two types of consultations.

4.5. Questions
While no difference was found in terms of the mean number of doctor-initiated questions between TCM and WM encounters, the number of open ended questions asked by TCM doctors (28.03) was significantly higher than those by WM doctors (19.95), $U = 152.5$, $p < 0.05$, $r = 0.3$ – suggesting a medium-sized effect. A higher mean number of patient-initiated questions in WM than in TCM practice was identified, $t(42) = 3.1$, $P < 0.01$, $d = 0.9$. Furthermore, patients visiting WM doctors were found to ask more closed questions than those seeing TCM doctors, with a mean difference of 0.08, $t(40) = 3.52$, $P < 0.01$, $d = 0.9$ – an extremely large-sized effect.

4.6. Non-medical talk
Both doctors and patients in TCM consultations engaged in considerably more social talk, with

mean ranks of 31.29 (TCM) versus 17.96 (WM), $U = 97$, $p < 0.01$, $r = 0.6$ for doctors, and 32.06 (TCM) versus 17.5 (WM), $U = 84$, $p < 0.01$, $r = 0.7$ for patients.

4.7. Emotional talk
Doctors in TCM consultations initiated more emotional talk than their WM colleagues, $U = 124.5$, $p < 0.01$, $r = 0.5$. No statistically salient difference has been found in terms of patient behaviors in this regard.

4.8. Verbal dominance
Verbal dominance was computed by dividing doctor utterances by patient utterances. In both practices, doctors were found to be more verbally active than patients, with an average ratio of 1.19:1 and 1.21:1 respectively in TCM and WM consultations.

5. Discussion
Several intriguing findings were generated from the present dataset. Communication behaviors of both doctors and patients across TCM and WM consultations have both similarities and differences. The following sections describe the features of these similarities and differences, and explain why utterances such as initiation of open questions, psychosocial and lifestyle exchanges and social talk occur more in TCM practices (Section 5.5).

5.1. Lifestyle and psychosocial exchanges
Consistent with what has been reported in the literature with reference to WM practice, lifestyle and psychosocial exchanges were infrequently addressed in doctor–elderly-patient communication in both TCM and WM encounters. In WM visits, such exchanges only account for 1% of overall doctor and patient utterances. In addition, of all the doctor-initiated questions, lifestyle and psychosocial topics were particularly rare, with no probing (1%). Patient-initiated questions were also predominantly focused on therapeutic regimen and medical conditions. In TCM consultations, though similarly large proportions of data gathering and information exchange were found in both doctor and patient talk, there was a slightly more moderate contribution of biomedical information and psychosocial exchange, and 14% of the questions asked by doctors were related to lifestyle and psychosocial concerns. In accordance with doctors' behaviors, patients seeing TCM doctors also took the initiative in seeking professional advice on lifestyles, as 11% of patient-initiated questions were of this nature. Stronger evidence of the less-preferred status of lifestyle and psychosocial exchanges in WM consultations is further furnished by an examination of the sequential context within which topics of this nature unfold, extend, and close. While lifestyle and psychosocial exchanges may appear at any phase in TCM visits, they usually occur at the end of a WM consultation, when the doctor gives a prescription and the patient is about to leave. Additionally, once topics of this nature are raised, doctors and patients both respond actively in TCM consultations, and therefore the completion of current topic normally takes several turns. In WM visits, however, they close within two turns (see Examples 4 and 5).

Example 4 (TCM): diet habits
01 D: 最近橘子有没有吃多啊?
did you eat lots of oranges recently?
02 P: 橘子?我南瓜吃的很多。

oranges? I ate lots of pumpkins.
03 D: 南瓜少吃一点吧 我感觉你(.)吃的过量了。
don't eat too many pumpkins i think you (.) ate too much.
05 P: 哦 (.)过量了是吧?
oh (.) too much right?
06 D: 对的 不要吃太多。
yes don't eat too many.
07 P: 哦。
oh.
08 D: 你你对它已经代谢不了。
you you cannot absorb it.
09 P: 哦 黄黄的哦?
oh looks sallow right?
10 P: 前段时间脸都黄黄的。
i looked sallow a couple of days ago.
11 D: 嗯。
um.
12 D: 那你那个包括胡萝卜啊柑橘这种都最近一段时间少吃吧。
so you should avoid eating too much food like carrots and oranges recently.
13 P: 哦。
oh.

Example 4 occurs at the history-taking stage. Both the doctor and the patient are actively engaged in lifestyle exchanges. Prior to line 1, the patient was telling the doctor that recently she had always felt tired and drowsy. In line 1, the doctor initiates the lifestyle discussion through a polar question. The patient, however, responds by presenting a new piece of information concerning her diet; the doctor then accommodates the patient by giving up the prior question and by giving advice based on what the patient had presented. This advice is responded to by the patient with the unmarked acknowledgement token 哦 ('oh'). But after a short pause, marked by the dotted parentheses, the patient initiates a request for confirmation by paraphrasing what the doctor had previously said. Rather than just responding with the passive 'yes', in line 6, the doctor reiterates the advice on diet again. Both line 3 and line 6 are the doctor's dis-preferred responses, which are later elaborated in line 8. It is worth noting that this elaboration occurs after the unmarked sequence-closing signal 'oh' (Schegloff 2007) in line 7. Instead of closing the current talk in line 7, the doctor extends her previous turn through elaborating, and by grounding her advice in biomedical-information giving. The patient, in return, expands her problem presentation by telling her doctor that she had looked sallow recently. In response, the doctor gives more information on lifestyles in line 12. The lifestyle exchanges close at line 13 with the unmarked 'oh'. Example 5 occurs at the end of a medical visit.

Example 5 (WM): light diet
01 D: 饮食这两天就清淡一点 容易消化一点。
eat light and easily digestible foods these days.
02 P: 嗯。

um.

Prior to line 1, the patient was telling the doctor his symptoms. Similar to Example 4, the doctor's advice on diet is responded to by unmarked acknowledgement token 'um', which also has the sequence-closing effect. However, different from Example 4, in which the doctor gave further explanations of her suggestions to the patient, no further elaborations are made. In addition, in Example 4, the doctor exemplified specific foods that are recommended, rather than giving general advice as the doctor does in Example 5.

5.2. Questions

Many scholarly sources, through the comparison of question-asking behaviors between professionals and patients, have indicated an asymmetrical distribution of questions in medical consultations (West 1984; Frankel 1990; Ainsworth-Vaughn 1998, 2001). The present dataset corroborates with this observation. Consultations in both practices are characterized by more doctor-initiated than patient-initiated questions. Studies also indicate a strong preference by doctors to ask closed questions in eliciting patient information (Beckman and Frankel 1984; Nakayama *et al*. 2016), despite the fact that open questions are more efficient in encouraging patient storytelling (Boyd and Heritage 2006). A preponderance of closed questions in doctor utterances was also observed in the current dataset: doctor-initiated closed questions far outnumber open questions (4:1 in TCM versus 7:1 in WM). However, compared with WM consultations, doctors in TCM consultations showed more likelihood of asking open questions, mainly in the form of *Wh*-interrogatives (see Example 6) and the 'how are you feeling' format (see Example 7). In Example 6, the doctor uses a *Wh*-interrogative to invite patient problem presentation, which is responded to by the patient presenting her medical conditions.

Example 6 (TCM): face swollen
01 D: 你怎么不好呀?
what's the problem?
02 P: 我脸肿 已经肿了三四天嘞。
my face was swollen and it was swollen for a couple of days.

While this *Wh*-interrogative format is medically framed in nature that invites biomedical information (line 2), the 'how are you feeling' format in Example 7 can generate both biomedical and psychosocial information.

Example 7 (TCM): burning pain
01 D: 你自己感觉怎么样啊。
how are feeling?
02 P: 感觉还好。
i feel okay.
03 P: 就是这是这两边的感觉哦好像有点刺激。
just just the two sides of it feels a bit provoking.

The doctor's question 'how are you feeling?' in line 1 solicits patient self-evaluation of a particular concern, either biomedical or affective, and therefore allows patient information giving

along both the medical and psychosocial dimensions. In line 2, the patient responds at first by giving a positive evaluation of the current state, which, however, is immediately followed by 'a bit provoking', a negative evaluation of his physical health (line 3). The follow-up conversation is thus circumvented by a discussion of what exactly such 'provoking' is.

5.3. Non-medical talk
Social conversation is another difference that was observed between the two types of encounters. A severe scarcity of social talk was found in doctor– patient talk in WM encounters, compared with 5% in doctors' utterances and 8% in patients' utterances in TCM visits. The finding is not at odds with what has been described in the literature (Wang 2010), which reports few examples of small talk inWM consultations.

Example 8 (TCM): delicious egg
01 P: 我约好去钓鱼。
i had already asked my friend to go fishing together.
02 D: 钓鱼啊?
fishing?
03 P: 哎 哈哈哈。
yes haha
04 D: 钓鱼这个天太冷了吧?
isn't it too cold to go fishing in such a day?
05 P: 我们这帮人。
we as a group.
06 P: 冬天还没到。
it's not winter yet.
07 P: 在我们那个地方有个叫喜蛋哦。
in our hometown there is a type of egg with parts of the duck inside.
08 P: 很好吃的。
it tastes really good.
09 D: 鸭蛋? 喜蛋?
egg? with parts of the duck inside?
10 P: 哎 喜鸭蛋。
yes egg with parts of the duck inside.
11 D: 那东西鲜是蛮鲜的。
that tastes really good.

Example 8 illustrates how non-medical small talk unfolds naturally in talk. Prior to line 1, the doctor was recommending the patient to do more physical exercise for the benefit of building up physical strength – a piece of lifestyle advice. In line 7, the patient initiates non-medical small talk by introducing a specific type of food in his hometown, which is considered not relevant to the current visit. The doctor responds with positive evaluation in line 11.

5.4. Emotional talk

TCM doctors were more emotionally responsive than WM doctors, responding to patient anxiety through showing concern, and reassurance/optimizing.These are shown in Examples 9 to 11.

Example 9 (TCM)
D: 你怎么了? 脸色噶难看的?
you look so pale, what's wrong with you?

Example 10 (TCM)
D: 慢慢会好起来的哦。
you will get better gradually *ou*.

Example 11 (TCM)
D: 总的状况还是往好的转噢。
generally you're getting better *ou*.

In Example 9, the doctor showed her concern about the patient, as she felt the patient looked so pale that she thought that something might have happened to him. Examples 10 and 11 illustrate doctor's reassurance/optimizing behavior. In Example 10, the underlined expression慢慢 ('gradually') and the use of future tense会 ('will') explicitly signal that the doctor was trying to comfort the patient, who felt worried and nervous about her illness, by guaranteeing that she would get better, though it would need a little time. The final particle 噢 ('*ou*') is a specific feature in spoken Chinese which functions as a 'friendly warning' showing 'concern and caring on the part of the speaker' (Li and Thompson 1981: 311). In a similar vein, in Example 11, the use of present progressive tense and the final particle *ou* delineate how the doctor reassures the patient about his physical health.

5.5. The concept of holism in TCM
One might consider the more frequent occurrence of open questions, psychosocial and lifestyle topics, and non-medical small talk in TCM consultations as highly related to the concept of holism, the belief that the human body is a holistic unity (see Section 1) and that dysfunction in one part might be caused by and also affect the rest of the body. TCM doctors normally ask several questions so as to identify the cause(s) of an illness; in addition, this concept of holism also regards each individual as 'comprised of and subject to elements and forces of nature as a whole' (Wang and Li 2005: 177), which leads doctors in TCM practice to consider not only the physical, mental, and emotional health of the patient, but also his/her relations with the outside environment. Therefore, issues concerning a patient's daily activities, their surroundings, diet, and any other matters that might not be directly biomedical in nature are more expected in typical TCM consultations. This also explains why non-medical small talk occurs more in TCM than in WM consultations. Another consideration is the notion of medicine itself. In WM practice, once the cause is identified, the doctors need only prescribe. In TCM practice, though, doctors have to *manufacture* the medicine themselves, by adding different herbs with different effects within one treatment. To assure that the treatment for one illness will not result in another imbalance of the overall physiological functioning of the patient, the doctor has to fully understand the physical symptoms of the patient, but also his or her lifestyle and psychosocial state, so that all the ingredients in the individual-specific treatment are beneficial to the patient.

6. Conclusion

To summarize, this study explores the similarities and differences between TCM and WM in relation to specific doctor–elderly-patient communication behaviors. Five findings are reported to be significantly different across these two approaches to medicine. First, TCM visits are noticeably longer than WM visits: 5.02 minutes on average for TCM, compared with 3.43 minutes on average for WM. Second, psychosocial and lifestyle exchanges occur more frequently in TCM consultations. While in WM, topics of this nature make up only 1% of doctors' and patients' utterances each, in TCM this remains the same for patients but the figure rises to more than 5% of doctors' utterances. Consequently, more biomedical information-giving behaviors of the doctor are reported in WM (33%) than in TCM (18%) consultations. Third, the data also suggest that when eliciting patient information,while doctors in both TCM and WM practices predominantly prefer closed questions, TCM doctors use more open questions. Next, TCM doctors engage more in emotional talk, showing their concern to their patients and giving reassurance. Finally, non-medical small talk between doctors and patients was more frequently observed in TCM visits. The systematic categorization and analysis of different communication behaviors between TCM and WM provide insights into the nature of talk in two types of medical visits that coexist in China. The findings reported here will be also useful in future studies situated in different contexts where these two practices also coexist. One significant finding is the empirical evidence for a higher frequency of psychosocial and lifestyle exchanges, non-medical small talk, emotional talk, and open questions in TCM consultations. The application of RIAS to TCM consultations also provides methodological possibilities of categorizing and analyzing doctor–patient talk in other contexts. The originality of this work also lies in its efforts to combine CA with RIAS, not only answering questions about the differences in communication between TCM and WM, but also how these differences are presented between speakers.

This study is exploratory in nature, with a limited sample size of only 45 consultations. As noted above, participants were all recruited from the Division of Gastroenterology for WM practice and the Division of Internal Medicine for TCM practice. Therefore, interpretation of the present exploratory findings should be done with caution. In addition, only one coder coded the data, despite test-retest reliability. As the paper does not report patient satisfaction with their consultation experience, future studies can correlate the present observations with patient satisfaction ratings to establish the impact of communication behaviors.

Notes

1. Reference No. HSEARS20161101001.

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Ying Jin is currently a PhD candidate at the Hong Kong Polytechnic University. Her main research interest is in doctor–patient communication. Address for correspondence: AG 415 Department of English Chung Sze Yuen Building Hong Kong Polytechnic University, Hong Kong. Email: jinying0516@gmail.com

Dennis Tay is Associate Professor at the Department of English, The Hong Kong Polytechnic University. He is a cognitive linguist and discourse analyst, and has been researching the linguistic and discursive characteristics of psychotherapeutic metaphors in different cultural contexts including the United States, New Zealand, Hong Kong, and China. Address for correspondence: AG 413 Department of English Chung Sze Yuen Building Hong Kong Polytechnic University, Hong Kong. Email: dennis.tay@polyu.edu.hk