Curing Doctor-Patient Relationships (DPR) in China: managers and clinicians' twofold pathways from Commitment HR practices[1]

ABSTRACT

Purpose: The first objective of this research is to develop and test theory on how commitment human resource (HR) practices affect hospital professionals' job satisfaction that motivates them to generate desirable patient care and subsequently improve doctor-patient relationships (DPR). The second objective is to examine how commitment HR practices influence in different ways hospital managers and clinicians.

Methodology: Using a cross-sectional survey, data were collect from 508 clinicians and hospital managers from 33 tertiary public hospitals in China. Structural Equation Model (SEM) was employed to test the relationships among the constructs.

Results: Commitment HR practices positively affect the job satisfaction of the healthcare professionals surveyed. Results also show that they perceive a positive relationship between job satisfaction and DPR. Overall, the model indicates a reversal on the strongest path linking job satisfaction and DPR whereby managers' main association operates through extrinsic job satisfaction while for clinicians it occurs through intrinsic job satisfaction only.

Implications for Practice: DPR may be improved by applying commitment HR practices to increase both healthcare professional's intrinsic and extrinsic satisfaction. In addition, intrinsic factors may serve as stronger motivators for clinicians rather than hard economic incentives in achieving DPR improvements.

[1] This research was conducted under the Joint Doctor of Management Program of ISCTE University Institute of Lisbon, Portugal and Southern Medical University, China.

Originality/value: This study contributes to the small but growing body of research on HRM in the healthcare sector with new evidence from the perspective of clinicians and hospital managers in the Chinese hospital context. It also demonstrates the importance of effective HRM in improving both hospital managers and clinicians' work attitudes.

Key Words: Doctor-Patient Relationship (DPR); Commitment HR Practices; Hospital Violence; Job Satisfaction; Chinese Hospitals; Healthcare Reform in China; Hospital Management;

INTRODUCTION

The escalating tension in doctor-patient relationships (DPR) is a burning issue in China's public healthcare and has been receiving increasing attention. From 2003 to 2013, 101 medical violence events have been reported in China, including 23 cases that resulted in the death of 24 healthcare professionals (Pan et al., 2015). Poor investment in hospitals from government, flawed healthcare system, marketization reform of healthcare, distrust between patients and doctors, media's sensationalism, and the unethical conduct of medical staff are considered the major factors leading to the issue (Cooke and Bartram, 2015; He, 2014; Hu and Zhang, 2015). Given the complexity of the public healthcare sector, there is no easy answer for turning around the situation and building a harmonious DPR in China, but there has been an increasing attention in applying Human Resource Management (HRM) to effectively manage the workforce in this sector (e.g. Baluch et al., 2013; Leggat et al., 2011; Zhang et al., 2013). There is also a growing evidence from China that investing in the management of human resources in the healthcare industry is an important tool for improving employee well-being and delivering high-quality patient care (Fan et al., 2014; Liu et al., 2015).

Human resource management practices can be classified as "control" or "commitment" practices (Arthur, 1994; Walton, 1985; Wood and de Menezes, 1998). The literature suggests that commitment-based HR practices motivate employees to contribute with higher levels of discretionary behaviors by aligning their self-interests with those of the organizations (Collins and Smith, 2006). Some empirical research suggests that commitment HR practices affect firm performance by creating positive employee attitudes (e.g. Kehoe and Wright, 2013). However, little has been discussed on the relationship between commitment HR practices and DPR so far (Leggat et al., 2010; Liu et al., 2015) and, as Hu and Zhang (2015: 1651) argued, "with China's current sociopolitical backdrop, reforming the health system is a complex and difficult task

with insecure effect", we believe that there is a need to understand how commitment HR practices affect healthcare professionals' job satisfaction that may ultimately influence DPR. Our first objective was then to develop and test theory on how commitment HR practices affect hospital professionals' job satisfaction that may motivate them to generate desirable patient care and subsequently improve DPR.

Moreover, literature suggests that sub-cultures exist among different types of healthcare professionals such as doctors and managers (Degeling et al., 2006; Kirkpatrick et al., 2008; Liu et al., 2015). For example, Degeling et al. (2006) assert that doctors in their sample were less inclined to support a systematized approach to clinical work compared with their managerial colleagues. More recently, Liu et al. (2015) argue that doctors have different occupational sub-cultures as compared with other professional groups. Our second objective was to examine how commitment HR practices influence in different ways hospital managers and clinicians who have the greatest impact on hospital performance and DPR. By so doing, we aim at contributing to the call of better understanding how line management implementation is linked to measures regarding quality of patient care across different national and cultural settings with comparative study design (Cooke and Bartram, 2015).

Our primary contribution involves the amalgamation of research on commitment HR practices, employee attitudes and patient care outcomes, which provides a more explicit integration of HRM and its outcomes for the healthcare workforce and patient care. The findings of this study aim at not only enriching the existing body of knowledge and literature, but also at furthering the study of commitment HR in the Chinese healthcare sector, a relatively underresearched setting (Leggat et al., 2011; Liu et al., 2015). Moreover, this study represents an initial attempt to address the issue of DPR with commitment HR practices theory. Practically, our study

produced a number of implications that may enhance hospital management and ultimately contribute to mitigate the tensions between doctors and patients.

We begin by introducing the current context of Chinese health care, particularly the health care reforms and intense tension of DPR. Next, we define commitment HR practices and theoretically link them to DPR as an outcome of patient care through their effects on healthcare professionals' job satisfaction. Finally, we test the hypotheses put forward in the next section and examine the effects of these HR practices on a sample of managers and clinicians from a specific sample of Chinese public hospitals.

BACKGROUND AND THEORETICAL FRAMEWORK

Chinese Healthcare Reforms and Doctor-Patient Relationship

Healthcare Reforms (1980s-Present)

Along with China's opening up policy at the end of 1970s, Chinese healthcare system has experienced two major phases of reform: the first round is market-oriented reforms from the early 1980s to 2002, and the second round is comprehensive reforms from 2003 to the present (WHO, 2015).

Generally speaking, China's healthcare system has been employing a medical model based on specialized department consultation in hospitals that originated in the former Soviet Union. Widely applied in the Second World War, this medical model of specialized practice is suitable for wartime as it encourages piecemeal and adhoc treatment solutions (Li, 2012), but cannot respond neither to basic healthcare services nor to higher demands of a growing number of affluent population. The success of general practice (or family medicine) in Western countries inspired the Chinese government to introduce it as part of the reforms encouraging patients

with minor illnesses to address community hospitals for this consultation mode, and in 2006 the Ministry of Health launched a pilot residency project for different specialties including general practice (Zhang, 2007). However success has been limited: long used to be examined by specialists for whatever disease or complaint, patients resist to consult family doctors as well as going to community hospitals doubting the skills of their staff and reputation. There is insufficient knowledge of the subject and shortage of quality professionals in the field; as a consequence large hospitals are severely overcrowded while community hospitals are underutilized.

The insufficient development of primary health care by general practitioners coupled with patients' preference to seek healthcare specialized consultation in large-scaled hospitals have led to the "difficulty in seeing a doctor" and "work overload" for doctors. According to China's Health and Family Planning Statistical Yearbook 2013, from 2002 to 2012, the number of patients consulting large-scaled hospitals increased by 104.5 percent, while the number of clinicians only increased by 56.3 percent. Consequently, doctors do not have sufficient time to examine patients while these, under the marketization meanwhile implemented, consider themselves as "customers paying high out-of-pocket fees" but not receiving enough attention and care.

In fact, an important outcome of the marketization reforms introduced in the first round has been the continuous reduction of government subsidies, which accounted for 50% of public hospital revenues before 1978 while in 1980 only 30% of the revenue of public hospitals came from the government budget (WHO, 2015). This was further and gradually reduced to less than 10% by 2000 (Ramesh and Wu, 2009). As a result, the marketization of public healthcare reforms since the 1980s in China has eventually turned public hospitals into "for-profit" business organizations so as to raise funds for investment in infrastructure and facilities through

user charges and drug mark-ups (Cooke and Zhan, 2013). Chinese hospitals have linked physicians' incomes to their revenue generation performance (Pei et al., 2000) thus motivating them to overprescribe drugs, medical tests and treatments so as to make for their personal pay and contribute to hospital revenues (He, 2014). User charges and drug sales from hospital owned pharmacies have thus become the major source of revenue for the development of the healthcare sector, which in fact has significantly advanced in what concerns healthcare facility construction and technology, and increased the overall capacity for supplying medical services, but at the cost of an increasing tension and conflict between hospital/doctor and patient and families as it will be discussed ahead in this paper.

The outbreak of SARS in 2003 challenged China's healthcare system and its existing policies, and thus directly prompted the country to launch a more comprehensive reform of the sector. After a long preparation, in March 2009, the Chinese government issued a guiding policy document, *Deepening the Health System Reform or 'New Healthcare Reform Plan' (Xin Yi Gai 新医改),* aiming to alleviate the economic burden for providing healthcare both in the short and in the long-term and to establish universal health coverage by 2020 (see Docherty et al., 2012). The main tasks of this round of reforms are to improve public hospitals, strengthen the delivery capacity of the system, and establish an essential medicine system with specific policies in healthcare financing reform, human resource development, and reform of management systems of healthcare institutions (WHO, 2015). Such reforms are aiming at a reversal in the heavy reliance on the market to finance hospitals (Yip and Hsiao, 2009) and thus placing public hospitals under a semi-state and semi-market control (Cooke and Zhan, 2013).

Under a planned economy approach, government used to own and manage all hospitals in China. As part of the reform or "*policy experimentation*" (Millar et al., 2016) initiated in 2009,

the Chinese government has encouraged non-government entities to invest in hospital services and encouraged medical staff to practice in both public and private hospitals freely. In 2012, public hospitals accounted for 57.8% of all hospitals – a 3.8% decrease compared with 2011. The remaining 42.2% were non-public hospitals (Ministry of Health, 2012). Along with the market-oriented reform, in order to cope with competition, Chinese hospitals introduced HRM to replace the traditional personnel management that typically focused on administrative and routine work under the planned economy system. The outbreak of SARS has also promoted management education among hospital executives and accelerated the application of management theories and practices in healthcare organizations in China, as hospital executives started to understand that "managing-by-experience" was not enough to cope with outbreaks such as SARS and that they were in need of professional management. Since then, Chinese hospitals have been increasingly exploring new managerial practices including high-performance work systems (HPWS). However, few studies have examined the implications of such management practices, particularly for hospital workforce and for patient care outcomes (Liu et al., 2015).

Doctor-Patient Relationship in China

The reduction of government financial support and the introduction of market mechanisms have prompted the increasing tension and conflict between hospitals/doctors and patients and their families in China. Patients and their families have increasingly taken radical actions to protest against the difficulty in accessing adequate healthcare services and the soaring costs of services and drugs (Cooke and Zhan, 2013; Hu and Zhang, 2015). Hospital violence happens frequently, and in nearly all units (Pan et al., 2015). The most common causes of violence are the dissatisfaction with the treatment or diagnosis (e.g. medical malpractice), services (e.g. long waiting times), expensive fees (e.g. high cost of treatment) and communication gaps between

doctors and patients (Duan et al., 2014; Pan et al., 2015). As Hu and Zhang (2015: 1651) note "patients' poor experiences can accumulate, result into doubt concerning an individual doctor's treatment and generate a general distrust in healthcare professionals and finally may break out into open doctor–patient conflicts". Patients would rather resort to violence than arbitration because they believe the latter is time consuming, unfair, and inefficient (Pan et al., 2015). A survey by the Chinese Hospital Association in December 2012 showed that violence against medical staff had increased from 20.6 assaults per hospital in 2008 to 27.3 in 2012 (Xu, 2014). Since hospital disputes occurred more often in full-service tertiary hospitals in which attending doctors or those ranked above were more likely to be involved (Pan et al., 2015). This study focuses precisely on this type of hospitals.

Because doctors are afraid of being accused of misdiagnosis and personal assaults by patients and or the families, they resort to defensive behaviors, particularly overprescribing and over diagnosing in order to avoid potential medical disputes and retain essential evidence in case of lawsuits (He, 2014, Pan et al., 2015). For example, He (2014: 70) revealed that "more than 80% physicians reported the practice of defensive medicine in the form of prescribing unnecessary diagnostic tests, drugs and therapeutic interventions", and argued that physicians' disputes with patients and low income motivated the overprescribing behavior. The overprescribing and overdiagnosing make patients pay more than necessary for treatment and become more hostile to doctors. As a result, a vicious cycle has emerged in the tension and conflict between doctors and patients from overprescribing and overdiagnosing to mutual distrust and violence again doctors, and doctors' defensive behaviors with overprescribing and overdiagnosing. Figure 1 summarizes the key stakeholders and their roles in the adversarial doctor-patient relationship.

Insert Figure 1 about Here

In sum, DPR in the current context of China mainly follow a "pragmatism based model" focused on economic exchange, where patients see themselves as customers and hospitals/doctors seek financial benefits to balance insufficient subsidies from governments. Lacking the family doctor system that exists in most Western countries, there is an atmosphere of lack of trust or rather there is a mutual distrust between doctors and patients; communication is impersonal and remote; and relationships are instant or short-lived due to the constant changing of consultation hospitals by patients.

However it is important to note that the Chinese healthcare reform is evolving in a very dynamic way, and the same is bound to happen to the current state of DPR. For example, in June 2016, as we were conducting this research, China's State Council formulated a *Guideline to Promote Family Doctor Service Provision* aiming to establish a general practitioners system as the core of a primary care infrastructure across the country by 2020. This is yet another effort to encourage and motivate patients to visit local clinics or community hospitals and consult family doctors rather than rushing to large-scaled hospitals in search of specialists.

Commitment HR Practices and their Impact on Job Satisfaction and Patient Care Outcome

Strategic human resource scholars have argued that organizations can effectively influence the attitudes and behaviors of employees through different human resource (HR) practices (Collins and Smith, 2006; Huselid, 1995). In this regard, control and commitment HR practices represent two different HR approaches in the literature (Arthur, 1994; Boselie et al., 2003; Ma et al., 2016; Wood and de Menezes, 1998; Xiao and Tsui, 2007). While control HR practices enforce employee compliance with rules and procedures, commitment ones focus on developing committed employees through higher levels of employee involvement in decision-making and team-focused activities (e.g. Arthur, 1994). Su and Wright (2012) assert that

China-based effective HRM systems consist of both control and commitment HR practices. More recently, Ma et al. (2016) provided further evidence on the presence of control and commitment HR practices followed by organizations in China.

In the literature the terms high commitment, high involvement, and high performance are often used interchangeably (e.g. Leggat et al., 2010). In this study, we continue the notion of commitment HR practices of previous studies in China (Ma et al., 2016; Su and Wright, 2012), and specifically focus on those that include sets of human resource practices such as participation in decision-making, internal communication, team work, information sharing, which affect employee commitment and motivation (Xiao and Tsui, 2007).

Although a growing body of studies has provided evidence of a relationship between commitment HR practices and organizational performance (Arthur, 1994; Jiang et al., 2012; Youndt et al., 1996), much less is known about the mechanisms through which these HR practices affect organizational performance (Collins and Smith, 2006). Empirical work seems to support the notion that HR practices affect firm performance and quality of patient care through employee attitudes (Kehoe and Wright, 2013; Liu et al., 2015; West et al., 2006). As per Iacobucci et al. (2007) employee's attitudes can been treated as mediators between HRM and patient care outcomes if there is a strong theoretical basis to do so. However in the case of the variables used in the present study, we have not found any indication in the theory explaining a direct relationship between commitment HR practices and DPR. Moreover, in the case of commitment-based HR practices, researchers sustain that there is no direct impact on performance although it fosters positive employee attitudes and behaviors - such as job satisfaction (Baluch et al., 2013; Bowen and Ostroff, 2004; Collins and Clark, 2003). We found theoretical support only for the relationship concerning commitment HR practices and job

satisfaction and for the one concerning job satisfaction and DPR (Bonias et al., 2010; Cooke and Bartram, 2015). Therefore building on these works, we hypothesize that

H1a: Commitment HR Practices are positively associated with job satisfaction;

H1b: Job satisfaction is positively associated with DPR.

Researchers contend that employee perceptions of HR practices vary at the job group level as a result of job group–level variance in the perceived HR practice employment (Kehoe and Wright, 2013). For example, supervisors and employees are likely to differ in how they experience and interpret HR practices (Leggat et al., 2011). Liao et al. (2009) found that managers rated HRM practices higher than employees did. Leggat et al. (2011) suggest that occupational groups in the healthcare sector moderate the relationship between HRM systems and attitudinal HR outcomes such as job satisfaction. Indeed, according to Degeling et al. (2006), there are variations between Chinese doctors and managers in their perception of clinical unit management and team-centered approach.

As noted, we focus on the employee outcomes of intrinsic job satisfaction, extrinsic job satisfaction, and DPR. Specifically, given the findings in the literature, we propose that occupational role moderates the relationships between commitment HR practices, and employees' intrinsic and extrinsic job satisfaction and DPR. We are interested here in how the extrinsic and intrinsic job satisfactions of the hospital managers and clinicians are likely to shape patient care outcomes in different ways. As managers have an important role on the generation of revenue and compensation for hospitals, we would expect that extrinsic job satisfaction will have a more significant relationship with DPR for managers than for clinicians. On the other hand, clinicians are likely to be keener on intrinsic satisfaction as they focus on independence of practice (Leggat et al., 2011). Thus, we hypothesize that:

H2: Occupational role (managers vs clinicians) moderates the associations between intrinsic and extrinsic job satisfaction with DPR.

H2a: The association between intrinsic job satisfaction and DPR is stronger for clinicians than for managers.

H2b: The association between extrinsic job satisfaction and DPR is stronger for managers than for clinicians.

METHOD

Sample

Public hospitals still dominate the healthcare sector in China and are also the places where most conflicts between doctors and patients occur (Duan et al., 2014). They are thus the targets of our study. A total of 1,500 questionnaires were sent to contact persons in 33 public tertiary hospitals of eight cities in Guangdong province. All of the contact persons are members of the Guangdong Hospital Association. The contact persons distributed the questionnaires in the hospitals they work for with an accompanying letter explaining the study purpose and calling for participation. These contact persons mailed them back upon completion. Six hundred ninety (690) copies have been returned with 508 valid questionnaires corresponding to an initial response rate of 46% and a final one of 34%. From these, 71% of the respondents have managerial responsibilities (e.g. doctor manager), 27% have only clinical responsibilities. The remaining 2% are supporting staff and thus have been excluded from the group comparison analysis. Whenever doctors had both clinical and managerial responsibilities, we included them in the "doctor management" group.

Most of the respondents work for large-scale hospitals with more than 1000 beds (70%). Forty-one percent have worked in healthcare for more than 15 years and 32% for 6 to 15 years. Men account for 56%, and the majority of the respondents are married (86%). Forty-three percent of the respondents have a PhD or a master degree.

Measures

The exact commitment HR practices in the literature differ across studies (see Collins and Smith, 2006). As Cooke and Bartram (2015) propose, developing HRM in context rather than using off-the-shelf HRM measures, contributes to new insights in HRM practices. This is even truer in healthcare settings in China in which HRM is underdeveloped and under-researched. Following Xiao and Tsui (2007) and our understanding of the work environment in Chinese hospitals, we constructed a 5-item scale to measure high commitment management practices which reflect key practices such as participation in decision-making, internal communication, and team work. The scale was scored on a 5-point rating scale ranging from (1) "strongly disagree" to (5) "strongly agree". The items, validity, and reliability indicators are shown on Table 1 for all constructs.

Six items were developed to build a scale for job satisfaction on the basis of Chen and Farh's study (2000). Job satisfaction comprehended two subscales, one for intrinsic and another one for extrinsic satisfaction each with three items. The scale was scored on a 5-point rating scale ranging from (1) "strongly dissatisfied" to (5) "strongly satisfied".

When measuring doctor-patient relationship, context matters (Eveleigh et al., 2012) and we could not find a reliable measure of DPR developed for the Chinese healthcare. Therefore, based on previous studies (e.g. Duan et al., 2014; Hu and Zhang, 2015), we reason that medical competence of clinicians, trust and communication between clinicians and patients

are essential elements of DPR. For example, Duan et al. (2014) found that the service quality of doctor visits and the examination quality had significant impact on patient satisfaction and trust, suggesting the importance of medical competence. In addition, distrust and poor communication between doctors and patients are widely considered the core reason for conflict and tension in DPR (see Hu and Zhang, 2015; Pan et al., 2015). Thus, DPR was measured with a 5-point rating scale ranging from (1) "strongly disagree" to (5) "strongly agree" concerning four key elements as depicted in Table 1.

Insert Table 1 about Here

To examine the possibility of common method variance (Podsakoff et al., 2012), we tested all indicator items for all variables as a single factor model. The results showed that this single factor model has unacceptable fit (CMIN/DF=6.10, p<.001; CFI=.88; PCFI=.75; RMSEA=.10; SRMR=.06). This result suggested that the data were not significant biased by an underlying common method factor.

Data analysis strategy

Data analysis started by testing the psychometric quality of measures. This was conducted with AMOS 20 via CFA using Maximum Likelihood estimation, which allows for the test of construct validity (Hair et al., 2010) and is complemented by convergent and divergent validity testing. We also computed for reliability testing with both Cronbach alpha and Composite Reliability. CFA and SEM goodness of fit have been assessed following Hair et al. (2010) recommendations. The ratio between Chi square and degrees of freedom (CMIN/DF) should be below 3 with possible significant p-value. The Comparative Fit Index (CFI) should reach .92, RMSEA should be lower than .07, and SRMR should be lower than .08.

Multigroup comparison was tested via Moderated Structural Equation Analysis (MSEM) following Byrne's (2001) recommendations. MSEM tested for goodness of fit between each comparison group's SEM following a process of imposing constraints as follows: Firstly we tested the unconstrained model, which requires matching paths and variables in both models (structural invariance). Next we additionally constrained the model to a matching structure and regression weights (measurement invariance). The significance of moderation effects per estimated path coefficient among latent variables was tested with z-score.

RESULTS

For clarity sake, we opted to write the descriptive statistics (means, standard deviation) and report the bivariate statistics in the Table 2 below. Managers see commitment HR practices as being more strongly present than clinicians (3.37 against 3.15; $F(1, 494) = 10.613$, $p<.01$). Likewise managers tend to report higher average for both intrinsic (3.60) and extrinsic job satisfaction (3.22) than clinicians (3.43; 2.89, respectively) with the ANOVA showing significant differences ($F(1, 494) = 7.84$, $p<.01$ and $F(1, 494) = 17.058$, $p<.01$, respectively). Both samples have equivalent report on DPR (managers 3.47, clinicians 3.46, $F(1, 494) = .047$, $p=.828$).

Insert Table 2 about Here

Hypotheses 1a and 1b were simultaneously tested using a Structural Equation Model (SEM). The results are presented in Figure 2. The overall model showed a good fit, as indicated by the fit indices (CMIN/DF=2.34; $p<.001$; CFI=.97; TLI=.78; RMSEA=.05; SRMR=.04). A positive relationship was found between commitment HR practices and intrinsic satisfaction ($b=.82$, $p<.001$), and also with extrinsic satisfaction ($b=.87$, $p<.001$). A positive relationship was found between intrinsic satisfaction and DPR ($b=.30$, $p<.001$), and also between extrinsic satisfaction and DPR ($b=.44$, $p<.001$). Thus, H1a and H1b were both supported meaning that

commitment HR practices are positively associated with job satisfaction and that job satisfaction is positively associated with DPR.

Insert Figure 2 about Here

For hypothesis 2, we conducted a nested multi-group path model to examine potential moderating effects of professional groups (managers vs. clinicians). In this approach, SEM is estimated separately for the two groups and the magnitude of the regression coefficients can be compared using a critical ratio z test (Byrne, 2013). The MSEM goodness of fit is judged by CMIN/DF, CFI, TLI, PCFI, and RMSEA using criteria as stated in the data analysis strategy section. The models compared are: the null model, the unconstrained model, the constrained for equal loadings, the constrained for equal regression weights and lastly the constrained for both factor loadings and regression weights. Table 3 shows fit indices while Figure 3 shows the standardized regression coefficients for both managers and clinicians.

Insert Table 3 about Here

Insert Figure 2 about Here

Managers show a stronger association between high commitment practices and intrinsic satisfaction than clinicians. Such intrinsic satisfaction has a positive but considerable weaker association with DPR when compared with clinicians. Actually the leading path between job satisfaction and DPR for clinicians is through intrinsic satisfaction only.

Managers and clinicians have equivalent association between commitment HR practices and extrinsic satisfaction. However, the association between this variable and DPR occurs only for managers. Overall, the model shows a reversal on the strongest path linking job

satisfaction and DPR where managers' main association operates through extrinsic job satisfaction while for clinicians it occurs through intrinsic satisfaction only.

The z-score (Table 4) shows that the occupational group moderates the regression weights concerning the association between all variables in the model to the exception of Commitment HR practices-Extrinsic Satisfaction, which has equivalent magnitude for both groups. Thus, H2, occupational role (managers vs. clinicians) moderates the associations between intrinsic and extrinsic job satisfaction with DPR, was partially supported. H2a, the association between intrinsic job satisfaction and DPR is stronger for clinicians than for managers, and H2b, the association between extrinsic job satisfaction and DPR is stronger for managers than for clinicians, are supported.

Insert Table 4 about Here

DISCUSSION AND IMPLICATIONS FOR PRACTICE

Using a cross-sectional survey of more than 500 clinicians and hospital managers from 33 tertiary public hospitals in Guangdong Province of China, this study has examined the relationship between commitment HR practices, job satisfaction and doctor-patient relationships in an attempt to contribute with insights from HR management to the healthcare sector in order to ease the growing tension and conflict in the doctor-patient relationships in China. The study revealed that commitment HR practices positively affect the job satisfaction of the healthcare professionals surveyed and that they perceive a positive relationship between job satisfaction and DPR. Furthermore, our results suggest that occupational groups (managerial and non-managerial clinicians) moderate the regression weights concerning the association between all variables in the model to the exception of commitment HR practices and extrinsic satisfaction.

This study contributes to the small but growing body of research on HRM in the healthcare sector with new evidence supporting the link between commitment HR practice and work attitudes, as well as work attitudes and patient care from the perspective of clinicians and hospital managers in China. Despite the increasing evidence on the association between HRM and the beneficial outcome in healthcare organizations (e.g. Leggat et al., 2010; Liu et al., 2015), this study represents an initial attempt to examine the associations among commitment HR practices, job satisfaction and DPR in the Chinese healthcare sector. Our findings provide evidence to support the value of commitment HR practices in the Chinese hospital context, and demonstrate the importance of effective HRM in improving both hospital managers and clinicians' work attitudes. The findings have critical implications for China's hospital management to consider enhancing HRM to cope with the escalating DPR as we discuss next.

First of all, in support of hypotheses 1a and 1b, job satisfaction was positively associated both with commitment HR practices and DPR in the overall sample. These findings imply that DPR might be improved by applying commitment HR practices to increase healthcare professional's intrinsic and extrinsic satisfaction. The results are consistent with earlier findings that HRM with a focus on participation and empowerment might improve patient care quality (e.g. Leggat et al., 2010; Liu et al., 2015). Chinese healthcare organizations should create a work environment that encourage teamwork, effective collaboration and open communication (e.g. Fan et al., 2014). Therefore, we argue that commitment HR practices characterized by participation in decision-making, good internal communication and team work can be a feasible and effective "solution" to the escalating DPR issue, given the complexity of the healthcare system and sociopolitical backdrop in China (Hu and Zhang, 2015).

Second, compared with the sample of clinicians, there is a stronger association between commitment HR practices and intrinsic satisfaction in the managers' sample. This finding is interesting because intrinsic satisfaction shows weaker association with DPR for managers than for clinicians. Compared with clinicians who focus more on medical practices, hospital managers' primary responsibility focus on managerial functions. In this way manager's sample is required to deal with commitment HR both as policy makers and implementers, and as end recipients of such management options. For example, more participation in decision-making might be a strong intrinsic motivator while team work and open communication may lead to positive performance outcome of the clinical unit. This may suggest hospitals managers champion and advocate more commitment HR practices than clinicians partly because of the motivation effect of those practices, and partly because of improved team or organizational performance outcome brought by those practices. The weaker association between intrinsic satisfaction and DPR for managers, compared with clinicians, might be justified by clinicians' more direct and frequent contact with patients through their service and managers less contact with patients although both report the same levels of DPR.

Third, it should be noted that the overall sample reported lower mean on extrinsic satisfaction (mean=3.13, S.D. =.80) than on intrinsic satisfaction (mean=3.55, S.D. =.62), illustrating a significant lower satisfaction with income than with intrinsic factors. Moreover, commitment HR practices exert significant and equal influence on extrinsic satisfaction in both clinician and managerial samples. This finding indicates the importance of compensation and benefit in managing the healthcare workforce in China. More recently Chinese researchers (Hu and Zhang, 2015; Pan et al. 2015) contend that underpayment was one of the factors for doctors' poor attitude towards patients. Therefore, compensation and benefits may be an important strategy to consider in HR designed to address the underpayment issue. Our study suggests

that it is important for compensation to be fair internally and be competitive externally in such HR design.

Lastly, the findings indicate that for clinicians only the intrinsic satisfaction affects DPR while for managers it occurs through both intrinsic and extrinsic satisfaction but the latter plays a more significant role. It is interesting to note that it is the intrinsic satisfaction that influences DPR in the clinician group. This may imply that for clinicians the solution to improve DPR might rely more on intrinsic factors rather than extrinsic factors such as pay. This finding is important as economic incentives for clinicians have been widely considered important factors in addressing the DPR issue (e.g. He, 2014; Pan et al., 2015) while intrinsic needs have been rarely discussed. Therefore, we argue that empowerment and autonomy in work, and the use of subjects' expertise and skills may serve as stronger motivators for clinicians rather than hard economic incentives in achieving DPR improvements. On the other hand, in this study, the surveyed hospital managers, extrinsic rewards play a more significant role in shaping DPR than intrinsic satisfaction. In reality, hospital managers' primary responsibility is to obtain revenue for their departments or hospitals, and their pay is closely linked to the revenue under the bonus payment system. Consequently, this has led to results that clinicians' intrinsic satisfaction shapes DPR while for hospital managers, extrinsic satisfaction plays a more significant role in shaping DPR than intrinsic satisfaction.

Some limitations of the study need to be addressed. The first one is the cross-sectional design, which makes it impossible to draw causal inferences. The other limitation is the use of self-report measures, which are subject to subjective bias on the part of the respondents. Lastly, this sample is not representative of the hospital workforce in general. For example, the majority of the respondents are from large-scale hospitals with more than 6-year working experience. This limits the generalizability of the findings to other Chinese healthcare

organizations. These limitations may be resolved in future studies by a longitudinal research design with a more representative sample and including objective measures such as patient complaints and specific doctor-patient conflicts. Following the research by Eveleigh et al (2012), we find it is particularly critical to promote larger consensus on a universal measure of doctor-patient relationship. Lastly, it would be worthwhile doing comparative study on the relationship between commitment HR practices and DPR in Chinese and Western health organizations.

Conclusion

This paper investigated the associations between high commitment HR practices, job satisfaction and DPR in a period of ongoing public healthcare reform and marketization in China. It aims at contributing to our understanding of the positive role that commitment HR practices may play in managing the workforce in healthcare organizations based on evidence from China. The findings suggest that commitment HR practices could be effective strategies in enhancing both hospital managers and clinicians' job satisfaction. Moreover, the deteriorating DPR might be improved by enhancing the intrinsic job satisfaction of clinicians through addressing their needs of autonomy in work, use of expertise and empowerment, and by enhancing the extrinsic job satisfaction of hospital managers with competitive and fair compensation and benefits.

References

Arthur, J. B. (1994), "Effects of human resource systems on manufacturing performance and turnover", *Academy of Management Journal*, Vol. 37 No. 3, pp. 670-687.

Baluch, A. M., Salge, T. O. and Piening, E. P. (2013), "Untangling the relationship between HRM and hospital performance: the mediating role of attitudinal and behavioural HR outcomes", *International Journal of Human Resource Management*, Vol. 24 No. 16, pp. 3038-3061.

Bonias, D., Bartram, T., Leggat, S. G. and Stanton, P. (2010), "Does psychological empowerment mediate the relationship between high performance work systems and patient care quality in hospitals?" *Asia Pacific Journal of Human Resources*, Vol. 48 No. 3, pp. 319-337.

Boselie, P., Paauwe, J. and Richardson, R. (2003), "Human resource management, institutionalization and organizational performance: a comparison of hospitals, hotels and local government", *International Journal of Human Resource Management*, Vol. 14 No. 8, pp. 1407-1429.

Bowen, D. E. and Ostroff, C. (2004), "Understanding HRM–firm performance linkages: The role of the "strength" of the HRM system", *Academy of Management Review*, Vol. 29 No. 2, pp. 203-221.

Byrne, B.M. (2013), *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Hoboken: Taylor and Francis.

Byrne, B. M. (2001), "Structural equation modeling with AMOS, EQS, and LISREL: Comparative approaches to testing for the factorial validity of a measuring instrument", *International Journal of Testing*, Vol. 1 No. 1, pp. 55-86.

Chen, C. S. and Farh, J. L. (2000), "Quality of worklife in Taiwan: An exploratory study", *Management Review*, Vol. 19 No. 1, pp. 31 – 79. In Chinese

Collins, C. J. and Smith, K. G. (2006), "Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms", *Academy of Management Journal*, Vol. 49 No. 3, pp. 544-560.

Cooke, F. L. and Bartram, T. (2015), "Guest Editors' Introduction: Human Resource Management in Health Care and Elderly Care: Current Challenges and Toward a Research Agenda", *Human Resource Management*, Vol. 54 No.5, pp. 711-735.

Cooke, F. L. and Zhan, C. (2013), "Between market and bureaucracy: public healthcare reforms in China and nurses' terms and conditions", *International Journal of Human Resource Management,* Vol. 24 No. 16, pp. 3178-3195.

Degeling, P., Zhang, K., Coyle, B., Xu, L., Meng, Q., Qu, J. and Hill, M. (2006), "Clinicians and the governance of hospitals: a cross-cultural perspective on relations between profession and management", *Social Science and Medicine*, Vol. 63 No. 3, pp. 757-775.

Docherty, M., Cao, Q. and Wang, H. (2012), "Social values and health priority setting in China", *Journal of Health Organization and Management*, Vol. 26 Vol. 3, pp.351 – 362.

Duan, G., Qiu, L., Yu, W. and Hu, H. (2014), "Outpatient service quality and doctor-patient relationship: a study in Chinese public hospital", *International Journal of Services, Economics and Management*, Vol. 6 No. 1, pp. 97-111.

Eveleigh, R. M., Muskens, E., van Ravesteijn, H., van Dijk, I., van Rijswijk, E., & Lucassen, P. (2012). An overview of 19 instruments assessing the doctor-patient relationship: different models or concepts are used. *Journal of Clinical Epidemiology*, Vol. 65 No.1, pp. 10-15.

Fan, D., Cui, L., Zhang, M. M., Zhu, C. J., Härtel, C. E. and Nyland, C. (2014), "Influence of high performance work systems on employee subjective well-being and job burnout: empirical evidence from the Chinese healthcare sector", *International Journal of Human Resource Management*, Vol. 25 No.7, pp. 931-950.

Hair, J. F., Black, W., Babin, B. and Anderson, R. (2010), *Multivariate Data Analysis (7th Ed.),* Upper Saddle River: Pearson.

He, A. J. (2014), "The doctor–patient relationship, defensive medicine and overprescription in Chinese public hospitals: Evidence from a cross-sectional survey in Shenzhen city", *Social Science and Medicine*, Vol. 123, pp. 64-71.

Hu, Y. and Zhang, Z. (2015), "Patient education-A route to improved patient experience in Chinese hospitals?" *Patient Education and Counseling*, Vol. 98 No. 12, pp. 1651-1652.

Huselid, M. A. (1995), "The impact of human resource management practices on turnover, productivity, and corporate financial performance", *Academy of Management Journal,* Vol. 38 No. 3, pp. 635-672.

Iacobucci, D., Saldanha, N. and Deng, X. (2007), "A meditation on mediation: Evidence that structural equations models perform better than regressions", *Journal of Consumer Psychology*, Vol. 17 No. 2, pp. 140-154.

Jiang, K., Lepak, D. P., Hu, J. and Baer, J. C. (2012), "How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms", *Academy of Management Journal*, Vol. 55 No. 6, pp. 1264-1294.

Kehoe, R. R. and Wright, P. M. (2013), "The impact of high-performance human resource practices on employees' attitudes and behaviors", *Journal of Management,* Vol. 39 No. 2, pp. 366-391.

Kirkpatrick, I., Shelly, M., Dent, M. and Neogy, I. (2008), "Towards a productive relationship between medicine and management: reporting from National inquiry", *International Journal of Clinical Leadership*, Vol. 16 No. 1, pp. 27-35.

Leggat, S. G., Bartram, T., Casimir, G. and Stanton, P. (2010), "Nurse perceptions of the quality of patient care: Confirming the importance of empowerment and job satisfaction", *Health Care Management Review*, Vol. 35 No. 4, pp. 355-364.

Leggat, SG, Bartram, T. and Stanton, P. (2011), "High performance work systems: the gap between policy and practice in health care reform", *Journal of Health Organization and Management*, Vol. 25 No. 3, pp. 281-297.

Li, J. (2012). Primary care in China. *Practical Journal of Clinical Medicine*, Vol. 9 No. 3, pp. 37-38.

Liao, H., Toya, K., Lepak, D. P. and Hong, Y. (2009), "Do they see eye to eye? Management and employee perspectives of high-performance work systems and influence processes on service quality", *Journal of Applied Psychology*, Vol. 94 No. 2, pp. 371.

Liu, C., Bartram, T., Casimir, G. and Leggat, S. G. (2015), "The link between Participation in Management Decision-making and Quality of Patient Care as Perceived by Chinese Doctors", *Public Management Review*, Vol. 17 No. 10, pp. 1425-1443.

Ma, S., Silva, M. G., Callan, V. J. and Trigo, V. (2016), "Control and commitment HR practices, job satisfaction and turnover intentions: a comparison between local and multinational firms in China", *International Journal of Human Resource Management,* Vol. 27 No. 9, pp. 974-990.

Millar, R., Jian, W., Mannion, R. and Miller, R. (2016), "Healthcare reform in China: making sense of a policy experiment?" *Journal of Health Organization and Management*, Vol. 30 No. 3, pp. 324-330.

Ministry of Health. (2012), "Health Statistics Yearbook 2012", available at: http://www.nhfpc.gov.cn/htmlfiles/zwgkzt/ptjnj/year2012/index2012.html. (Accessed July 12, 2016)

Pan, Y., Yang, X., He, J. P., Gu, Y. H., Zhan, X. L., Gu, H. F., Qiao, Q.Y., Zhou, D.C. and Jin, H. M. (2015), "To be or not to be a doctor, that is the question: a review of serious incidents of violence against doctors in China from 2003–2013", *Journal of Public Health*, Vol. 23 No. 2, pp. 111-116.

Pei, L., Legge, D. and Stanton, P. (2000), "Policy contradictions limiting hospital performance in China", *Policy Studies*, Vol. 21 No. 2, pp. 99-113.

Podsakoff, P. M., MacKenzie, S. B. and Podsakoff, N. P. (2012), "Sources of method bias in social science research and recommendations on how to control it", *Annual Review of Psychology*, Vol. 63, pp. 539-569.

Ramesh, M. and Wu, X. (2009), "Health policy reform in China: lessons from Asia", *Social Science and Medicine*, Vol. 68 No. 12, pp. 2256-2262.

Su, Z. X. and Wright, P. M. (2012), "The effective human resource management system in transitional China: A hybrid of commitment and control practices", *International Journal of Human Resource Management*, Vol. 23 No. 10, pp. 2065-2086.

Walton, R. E. (1985), "From control to commitment in the workplace", *Harvard Business Review,* March-April, pp. 77-84.

West, M. A., Guthrie, J. P., Dawson, J. F., Borrill, C. S. and Carter, M. (2006), "Reducing patient mortality in hospitals: the role of human resource management", *Journal of Organizational Behavior*, Vol. 27 No. 7, pp. 983-1002.

Wood, S. and De Menezes, L. (1998), "High commitment management in the UK: Evidence from the workplace industrial relations survey, and employers' manpower and skills practices survey", *Human Relations*, Vol. 51 No. 4, pp. 485-515.

World Health Organization (2015), "People's Republic of China health system review" (Health Systems in Transition), Vol. 5 No. 7.

Xiao, Z. and Tsui, A. S. (2007), "When brokers may not work: The cultural contingency of social capital in Chinese high-tech firms", *Administrative Science Quarterly*, Vol. 52 No. 1, pp. 1-31.

Xu, W. (2014), "Violence against doctors in China", *The Lancet,* Vol. 384 No. 9945, pp. 745.

Yip, W. and Hsiao, W. (2009), "China's health care reform: A tentative assessment", *China Economic Review*, Vol. 20 No. 4, pp. 613-619.

Youndt, M. A, Snell, S. A, Dean, J. W, and Lepak, P. A (1996), "Human resource management, manufacturing strategy, and firm performance", *Academy of Management Journal,* Vol. 39 No. 4, pp. 836-866.

Zhang, K. (2007) Exploration of general practitioner training in Shanghai and reviews in home and abroad. *Applied Journal of Practice,* Vol. 5 No. 10, pp. 847-848.

Zhang, M., Zhu, C. J., Dowling, P. J. and Bartram, T. (2013), "Exploring the effects of high-performance work systems (HPWS) on the work-related well-being of Chinese hospital employees", *International Journal of Human Resource Management*, Vol. 24 No. 16, pp. 3196-3212.

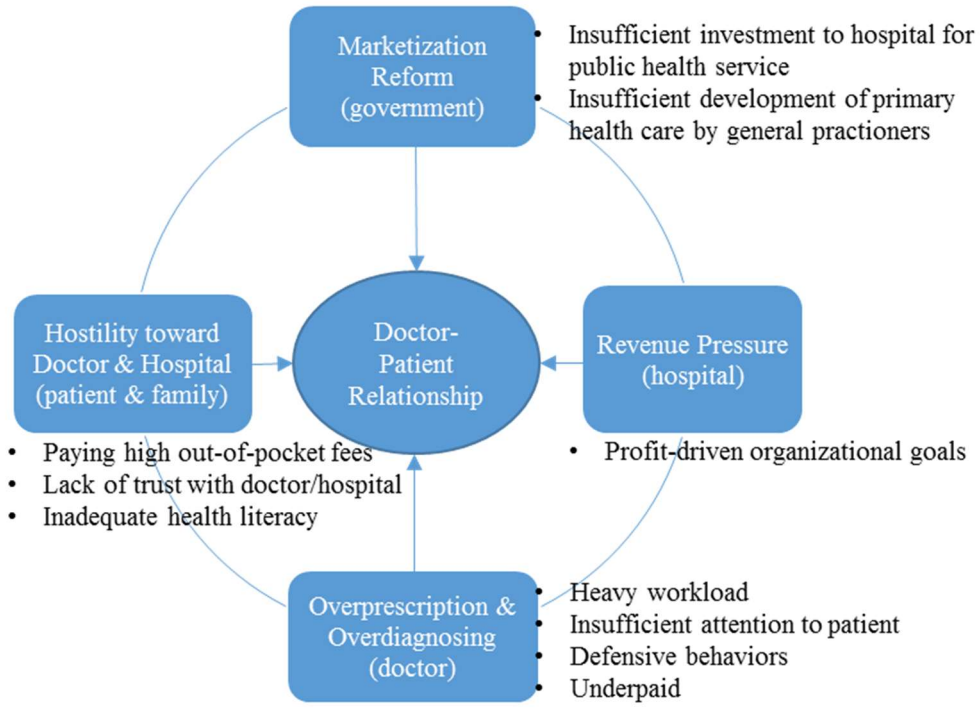

Figure 1. Key Stakeholders in Doctor-Patient Relationship in China

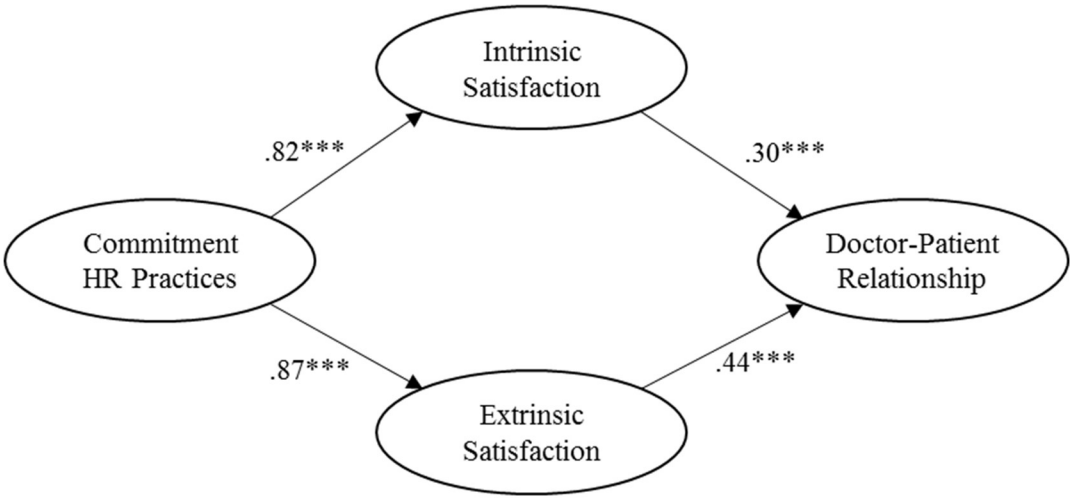

Figure 2. Standardized path coefficients of the overall model (n=508) ***p<.001

Figure 3. Standardized path coefficients of the MSEM-analysis in managers (n=360) and clinicians (n=136). *p<.05; **p<.01; ***p<.001

Table 1 Validity and Reliability of Constructs

Construct	Items	CFA Index	Cronbach's alpha	Composite Reliability	AVE
Commitment HR Practices	1) participation in decision 2) internal communication channels 3) leadership's acceptance of suggestions from employees 4) teamwork 5) people oriented management systems in place	CMIN/DF=2.200; p=.05; CFI=.99; PCFI=.50; RMSEA=.05; SRMR=.018	.85	.86	.55
Intrinsic Satisfaction	1) empowerment 2) use of skills 3) autonomy in work	(CMIN/DF=1.71; p=.09; CFI=.99; PCFI=.53; RMSEA=.04; SRMR=.019)	.76	.77	.52
Extrinsic Satisfaction	1) fair compensation 2) benefits 3) external equity compensation		.79	.79	.57
Doctor-Patient Relationship	1) medical competence 2) communication between doctor and patient 3) patient's trust in the treatment process 4) problem-solving through communication	CMIN/DF=1.18; p=.308; CFI=0.99; PCFI=.33; RMSEA=.02; SRMR=.01	.79	.80	.52

Table 2 Correlations

	Gender	Marriage	Hospital size	Education	Tenure	CHRP	InJS	ExJS	DPR
Gender	-	.14	.14	.396*	.20	.37	.25	.28	.26
Marriage	.09	-	.02	.15	.47**	-.173*	.04	-.18*	-.08
Hospital Size	.09	-.08	-	.04	.16	-.01	-.09	.00	.01
Education	.28**	.10	-.07	-	-.15	-.01	.16	.02	.01
Tenure	.11	.22**	.116*	-.06	-	-.11	-.09	-.15	-.16
CHRP	.20	.01	.05	.07	-.05	-	.58**	.70**	.59**
InJS	.16	.05	-.03	.10	.01	.63**	-	.54**	.48**
ExJS	.16	-.02	.00	.07	-.02	.67**	.53**	-	.40**
DPR	.13	.00	.16**	.113*	-.05	.59**	.43**	.51**	-

** p<.01, * p<.05, clinicians above diagonal, managers below diagonal, for gender Cramer's V is reported. CHRP=Commitment HR Practices; InJS=Intrinsic Job Satisfaction; ExJS=Extrinsic Job Satisfaction; DPR=Doctor Patient Relationship.

Table 3 Fit indices of the additive models (Multi-group analysis)

Model	CMIN/ DF	p	CFI	TLI	PCFI	RMSEA [LO90-HI90] PCLOSE
Null	18.63	<.001	.00	.000	.00	.19 [.18-.19] .000
Unconstrained	1.62	<.001	.97	.97	.78	.04 [.03-.04] .999
Same factor loadings	1.59	<.001	.97	.97	.83	.04 [.03-.04] 1.00
Same regression weights	1.67	<.001	.97	.96	.80	.04 [.03-.04] .99
Same factor loadings and regression weights	1.60	<.001	.97	.97	.85	.04 [.03-.04] 1.00

CMIN/DF = Chi-square / df; CFI=Comparative Fit Index; TLI = Tucker-Lewis Index; PCFI=Parsimony CFI; RMSEA=Root Mean Square Error of Approximation

Table 4 Z-score Analysis

			Managers		Clinicians		
			Estimate	P	Estimate	P	z-score
InJS	<---	CHRP	0,81	***	0,46	***	-3,43***
ExJS	<---	CHRP	0,93	***	0,85	***	-0,548
DPR	<---	InJS	0,18	0,018	0,51	0,002	1,790*
DPR	<---	ExJS	0,38	***	0,14	0,128	-2,15**

*** p<.001; ** p<.01; * p<.05. CHRP=Commitment HR Practices; InJS=Intrinsic Job Satisfaction; ExJS=Extrinsic Job Satisfaction; DPR=Doctor Patient Relationship.