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**Exploring the effects of doctor-patient relationship as challenge job demand in
Chinese public hospital: Modeling associations between leader-member
exchange, doctor-patient relationship, work engagement and turnover intentions**

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Exploring the effects of doctor-patient relationship as challenge job demand in Chinese public hospital: Modeling associations between leader-member exchange, doctor-patient relationship, work engagement and turnover intentions

Abstract

In the increasingly commercialized healthcare environment in China, doctor-patient relationship (DPR) act as a job demand for doctors that is linked to various motivational outcomes. Drawing on the Job Demands–Resources (JD-R) model and the conservation of resources theory, we develop a preliminary conceptual model that links Leader Member Exchange (LMX) as a job resource, and DPR as a challenge job demand, to the levels of work engagement and turnover intentions of doctors working in this healthcare environment. Using two-wave data collected from 381 doctors in a public hospital, we found support for the hypothesized model. Results of a series of SEM analyses revealed that LMX was positively related to DPR and work engagement, while DPR partially mediates the path from LMX to work engagement. In addition, LMX is negatively related to turnover intentions through DPR and subsequently work engagement. Theoretically, this study contributes to the development of the JD-R model by investigating the concept of challenge job demand, and its role in the motivational process, with new evidence from healthcare occupations in China. Practically, this study contributes to the limited number of studies on managing the changing nature of the DPR in China, and in seeking potential solutions based on established organizational constructs.

Keywords: Doctor-patient Relationship (DPR), Leader-member Exchange (LMX), Job-Demands Resources (JD-R) model, Challenge Job Demand, Work Engagement, Turnover Intention

Introduction

The doctor-patient relationship (DPR) is the set of interactions between a doctor and patient in the context of doctor's delivery of all medical care (Hakanen, Schaufeli and Ahola, 2008; Wee, 2018). It is a core feature of any healthcare system, and one that is facing major change in many contexts. In particular in China, the marketization of healthcare with associated reforms, and insufficient government funding to public hospitals, has driven public hospitals to become "commercial medical service providers" with patients as "customers" who pay for the healthcare service with money out of their own pockets (Ma *et al.*, 2017). Indeed, doctors are prescribing unnecessary diagnostic tests, drugs and therapeutic interventions, partly for hospital revenue and personal income, but also for defensive purposes against being accused of misdiagnosis by patients and their families (He, 2014; Pan *et al.*, 2015). However, these overprescribing and over-diagnosing practices result in higher costs for healthcare delivery, with an associated growth in medical disputes. In addition, in this emerging pragmatism-based model of the DPR, there is evidence of growing mutual distrust between doctors and patients, more incidents of impersonal and ineffective communication and more short-lived and transactional relationships (Ma *et al.*, 2017). Poor DPR not only negatively impacts upon the patient care and patient satisfaction (Wang, 2016), but also affects doctors' wellbeing and work attitudes such as their levels of work engagement and turnover intentions (Moreno-Jiménez *et al.*, 2012).

As Ma and his colleagues (2017) point out, the complexity of the Chinese healthcare system with its numerous stakeholders and high levels of change has promoted the use of more organizational-directed approaches to understand and to manage more effectively the changing nature of the DPR. Such approaches are encouraging more attention to the demands of the job, available resources and the relationships between leaders and others in organizational contexts towards adopting a more organizational level examination of the doctor-patient relationship.

The Job Demands–Resources (JD-R) model (Demerouti et al., 2001) is a useful framework to study healthcare professionals (Bakker et al., 2000; Demerouti et al., 2009; Elfering et al., 2017). Job demands refer to the physical, social or organizational aspects of the job that require employee’s sustained physical or psychological costs. Job resources pertain to the physical, psychological, social, or organizational aspects of the job that are functional to achieve work goals and stimulate personal growth and development (Demerouti et al., 2001). In extensions of the model (Crawford, LePine and Rich, 2010; Van den Broeck et al., 2010), job demands include challenges and hindrances. Challenge job demands have a duality in their characteristics, on the one hand being energy-depleting, and on the other hand, simultaneously stimulating as they are perceived instrumental to achieve valued outcomes such as work goal attainment (Van den Broeck et al., 2010). Examples of challenge demands include high levels of job responsibility, time urgency, and a high workload that employees can perceived as opportunities to learn, achieve and to be rewarded (Crawford, LePine and Rich, 2010).

Guided by the JD-R model, in this study we argue that in the current Chinese healthcare setting, the DPR acts as a challenge job demand, given its characteristics of being not only physically and psychologically stressful, but also financially and professionally rewarding. In general, employees in healthcare occupations are regularly confronted with demanding patients (Xanthopoulou *et al.*, 2007). Interacting with the demanding patients who have low trust in doctors and hospitals requires not only professional competence, but also emotional demands (Bakker and Sanz-Vergel, 2013). However, different from “lack of reciprocity” in the exchange relationship with patients in Western public healthcare organizations (Bakker *et al.*, 2000), Chinese doctors benefit both potential financial and professional reciprocity in their relationship with patients. In China, public hospitals are essentially “for-profit” business organizations through user charges and drug mark-ups” (Cooke and Zhan, 2013) to balance insufficient subsidies from governments. Doctors’ pay and bonus are associated with the number of patients they receive and the hospital’s drug sale revenue from their patients (He, 2014). This “pragmatism-based model” of DPR is focused on an economic exchange where doctors are reciprocated with financial gains for their services. Nevertheless, it is also acknowledged that many Chinese doctors derive a sense of pride and responsibility from their professional service that is developed based on good DPR (Hellin, 2002).

However, as noted there is “cost” for such economic reciprocity and professional pride. Specifically, profit-oriented medical practices by hospitals and doctor, expensive medical costs and high out-of-pocket fees lead to mistrust, hostility and violence against

the doctor (Ma *et al.*, 2017; Wee, 2018). In China, attacks on doctors are so common that they have a name: “Yi Nao” (医闹, medical disturbance). Given the hostile working conditions, Chinese doctors may need to deal with emotionally demanding patients or their families and conflicts. Such emotional demands, interpersonal conflicts and harassment by patients are typical job demands (Schaufeli and Taris, 2014).

Leader-Member Exchange (LMX) theory holds that leaders maintain a close relationship with members in the inner circle and both sides enjoy high-quality LMX (Graen and Uhl-Bien, 1991). High-LMX subordinates enjoy more support, increased responsibility, and access to information which increases the meaning of work for these subordinates (Aryee and Chen, 2006). In particular, LMX constitutes a relevant job resource for doctors to deal with the DPR issue, as the leader is a key job resources provider (Loi, Chan and Lam, 2014) and supervisor support per se is a key job resource (Demerouti et al., 2001). Therefore, we hypothesized that:

H1: LMX is positively related to DPR.

Based on the JD-R model, as a challenge job demand DPR has a potentially positive relationship with engagement. As discussed earlier, DPR acts as a challenge job demand, and as a positively valued demand could be conceptualized as a resource which has the motivational potential to boost levels of work engagement (see Schaufeli and Taris, 2014). Thus, we hypothesize that:

H2: DPR is positively related to work engagement.

The JD-R model proposes that job resources lead to increased motivation and performance while job demands lead to strain and health impairment (Bakker and Demerouti, 2017; Schaufeli and Taris, 2014). Crawford, Lepine and Rich (2010) argue that a job resource such as leadership is positively associated with engagement. Considering our earlier argument on the positive association between DPR and work engagement (Hypothesis 2), we anticipate that:

H3: DPR partially mediates a positive relationship between LMX and work engagement.

Drawing on the JD-R theory and empirical evidences on the motivation-driven process (e.g. Bakker, Demerouti, and Schaufeli, 2003), we argue that similar to job resources, challenge job demand (DPR, in this case) fosters goal accomplishment and stimulates positive work behavior such as work engagement, which reduces the intention to leave the organization (i.e. turnover intention). Considering our previous argument that DPR is positively related to work engagement (Hypothesis 2), we hypothesize that:

H4: DPR is negatively related to turnover intention through the mediation effect of work engagement.

Considering the overall relationships between LMX, DPR, work engagement and turnover intention, LMX acts as job resource (Loi, Chan and Lam, 2014) that helps to promote positive DPR by the provision of support, feedback and reward. Furthermore, DPR as a challenge job demand has the potential for both extrinsic and intrinsic

motivation (e.g. financial gain, a sense of accomplishment) (Crawford, LePine and Rich, 2010). Thus, the motivations from an improved DPR will promote work engagement, which in turn will reduce turnover intention. In summary, in line with the JD-R model, LMX as job resource is negatively associated with turnover intention (see Schaufeli and Bakker, 2004) through DPR and work engagement. Therefore, we hypothesized that:

H5: LMX is negatively related to turnover intention through a sequential indirect effect through improved (a) DPR and subsequently (b) work engagement.

Method

Participants and procedure

This two-wave study utilized questionnaire data collected in September 2017 (T1) and December 2017 (T2) at a tertiary public hospital with 2500 beds and 920 registered doctors in Guangxi Province, Southwest of China. A total of 460 registered doctors were randomly selected for the first survey from the 920-doctor list provided by the human resource department of the hospital. The selected doctors were invited to complete an anonymous questionnaire in their office hour and were assigned a unique code that allowed the authors to match the data from two-wave surveys. The first survey (T1) obtained 431 valid questionnaires which measure DPR and demographic variables with a response rate of 94%. The follow-up questionnaire in the second study phase (T2) was sent to those who returned the valid response at T1. A total of 381 returned

the completed questionnaire, yielding a response rate of 88%. The second survey measured LMX, work engagement and turnover intention. Most participants were male (59%), married (85%) and aged under 50 years of age (88%). Clinicians accounted for 88% (334), including 150 from the department of internal medicine and 169 from the department of surgery. Most respondents (68%) had worked in the surveyed hospital for more than five years.

Measures

Except for the control variables, we used a six-point Likert scale (1= “strongly disagree”, 6= “strongly agree”) to measure all the scales.

Leader-Member Exchange. LMX was measured with LMX-7 scale (Graen and Uhl-Bien, 1995; Scandura and Graen, 1984). The Cronbach’s α was .89.

Doctor-Patient relationship. DPR was measured with the nine-item doctor-perceived DPR scale in China (DPR-C) developed by Zeng, Ma and Gou (2018). The scale includes two components of doctor’s perceptions of the doctor-patient relationship: (1) patient-centered treatment, e.g., “*I provide the optimal treatment to my patient after considering many alternatives*”; and (2) mutual trust between the patient and doctor, e.g. “*My patient trusts that I will put his or her medical need in the first place*”. The Cronbach's α was .88.

Work Engagement. We measured work engagement with nine items of the engagement scale developed by Schaufeli *et al.*, 2002(Schaufeli *et al.*, 2002). High

scores indicate high work engagement. The Cronbach's α was .90.

Turnover Intention. The turnover intention was measured with the scale developed by Rosin and Korabik (1991)(Rosin and Korabik, 1991), including four items. The Cronbach's α was .92.

Data analysis strategy

The SPSS20.0 and AMOS17.0 statistical software were used to perform the statistical analyses. First, confirmatory factor analyses were conducted to verify the convergent and discriminant validity. Next, hypotheses were tested by structural equation modelling. Following the recommendation by Danner, Hagemann and Fiedler (2015), a chi-square test was performed to assess the significance of the differences among models. We used the bootstrapping confidence interval of 95 per cent (2000 bootstrap samples) to assess the significance of the indirect effects (Preacher and Hayes, 2004).

Results

Descriptive statistics

The means, standard deviations and correlations for the key variables are reported in Table 1. There is a significant positive correlation between LMX and DPR ($r = .22$, $p < .01$); LMX and DPR are both significant positively correlated with work engagement ($r = .59$, $r = .29$, respectively, $p < .01$); LMX, DPR, and work engagement are significant negatively correlated with turnover intention ($r = -.34$, $r = -.20$, $r = -.40$, respectively, p

< .01). All significant correlations are in the expected direction.

Insert Table 1 about Here

Measurement Model

All scales used in the study were subjected to CFA analysis. Our measurement model was composed of four latent factors (LMX, DPR, work engagement and turnover intention). The confirmatory factor models (Table 2) showed that the four-factor model yielded a better fit to the data (CMIN=295.54, df=145, RMSEA=.05, CFI=.93, TLI=.96, SRMR=.05) than alternative models. The common method variance (CVM) was assessed by conducting a single factor CFA solution and judging on its goodness of fit (Podsakoff, MacKenzie and Podsakoff, 2012). Results reported a poor fit for the one-factor model. Therefore, common method bias may not be a matter of concern for this study.

Insert Table 2 about Here

Structural Model

We employed SEM to test our hypothesized model. Specifically, we followed Mao, Chiu, Owens, Brown, & Liao (2019) and compared different models (Table 3) to test the three-path sequential mediation model: LMX-DPR-work engagement-turnover intention. We first tested the hypothesized sequential mediation model (i.e. the full model) which included both the direct path and the indirect path (Hypotheses 1-5). Results showed that the model fitted well with the data ($X^2 = 282.07$, $df = 145$, $CFI = .97$, $TLI = .97$, $RMSEA = .05$, $AIC = 410.07$, $SRMR = .04$). Next, we tested a “work engagement as mediator only” model (Alternative model 1), and it showed a significantly worse model fit than the full model. Similarly, we tested a “DPR as mediator only” model (Alternative model 2) and again this alternative model was significantly worse than the full model. Moreover, we conducted a “direct effect only” model testing (Alternative model 3). In this model, all indirect paths were constrained to zero. Again, it showed a significantly worse model fit than the full model. Lastly, we tested a reversed mediation model (Alternative model 4) in which the order of the two mediators (DPR and work engagement) was reversed. This alternative model was a significantly poorer fit than the full model. In addition, we tested a “reversed causality” model (Alternative model 5) by reversing the order of LMX and DPR. This alternative model was also significantly worse than the full model. In summary, these model comparison results showed that our proposed theoretical model had the best fit to the data (Figure 1).

Insert Table 3 about Here

Insert Figure 1 about Here

Based on the results of the full model, we examined our hypotheses as follows: 1) LMX was positively related to DPR and therefore H1 is supported. 2) DPR was positively related to work engagement, supporting H2. 3) LMX was positively related to work engagement directly and indirectly through DPR. The bootstrapping procedure showed that the indirect effect of LMX on work engagement through DPR was significant (95 per cent confidence interval = [0.03, 0.12]). Therefore, H3 was supported. 4) DPR was negatively related to turnover intention through work engagement . The bootstrapping procedure showed that the indirect effect of DPR on turnover intention through work engagement was significant (95 per cent confidence interval = [-0.15, -0.06]), supporting H4. 5) LMX was negatively related to turnover intention through the sequential mediation of DPR and work engagement, and the bootstrapping procedure showed that the indirect effect was significant (95 per cent confidence interval = [-0.35, -0.18]), supporting H5. Table 4 summarized the direct and indirect effects among the paths.

Insert Table 4 about Here

Discussion

Using a two-wave survey of 381 doctors in China, this study applied the JD-R model to examine the relationships between LMX, DPR, work engagement and turnover intention among Chinese doctors. Our theoretical model was successful in supporting our arguments that DPR in China's commercialized and mistrusting healthcare setting acts as a challenge demand and the proposition was supported that DPR can be improved with LMX. The results also suggest that LMX and DPR positively influence work engagement directly, but negatively influence turnover intention indirectly. LMX was positively related to DPR and work engagement, and DPR partially mediates the path from LMX to work engagement. In addition, LMX is negatively related to turnover intention through DPR and subsequently work engagement.

This study contributes to the number of limited studies on managing the escalating DPR issue in China from an organizational perspective (Ma *et al.*, 2017). In addition, this study expands previous studies on the JD-R model, and contributes to the continued development of the JD-R model by investigating the challenge demand concept with evidence from healthcare occupations in China.

LMX was positively related to DPR. This finding suggests that LMX as a job resource can improve DPR. In line with the conservation of resources theory, to cope

with the stressful job characteristics of DPR (e.g. emotional and demanding patients), doctors must gain additional resources to achieve their work goals. It is possible that high-quality LMX may provide doctors with resources such as feedback, emotional support, recognition and rewards. Specifically, LMX may compensate for the doctors' consumed resources caused by strained DPR, and help doctors to better focus on patient-centered treatment and improve the degrees of mutual trust between doctors and patients. On the one hand, this outcome could have been achieved by doctors gaining resources from supervisors (Loi *et al.*, 2011) On the other hand, this outcome could have been achieved by the reciprocal efforts by the employee (i.e. doctor) who might work harder to meet the expectation of a supervisor due to motivations such as reciprocal obligation (Tsui and Farh, 1997).

DPR was positively related to work engagement and was negatively related to turnover intention through the mediation effect of work engagement. These findings provide preliminary evidence for our proposal of DPR in China as a challenge demand in the JD-R model because of its duality as a stressful demand and the potential for future gains and goal attainment (Crawford, LePine and Rich, 2010). Further, such findings provide support for the argument by Schaufeli and Taris (2014) that challenge demand has the motivational potential to promote work engagement. However, Crawford et al. (2010) warn that the appraisal of demand as a challenge can change as a result of experiences over time, and as a consequence, the relationships between the DPR and both engagement and turnover intention may change as well. For example, a doctor might come to believe that the DPR he or she faces is a hindrance rather than a

challenge (i.e., if the DPR becomes threatening to the self and a hindrance to accomplishing a sense of fulfilment). As a consequence, the relationship between the level of the DPR and engagement might become negative, while the relationship between DPR and turnover is positive.

DPR partially mediates the positive relationship between LMX and work engagement. While the JD-R literature assumes that job resource leads to work engagement via a motivational process, the result of this study suggests that challenge job demand (i.e. DPR) may intervene in the motivational process. The present study extends the JD-R literature by suggesting that the challenge demand helps to explain the relationships between job resource (e.g. LMX) and work-related well-being (i.e., work engagement).

LMX influences turnover intention through the sequential mediation of DPR and work engagement. These findings provide evidence to support the JD-R model assumptions that LMX as job resource, as well as DPR as challenge job demand, have a motivation potential by providing instrumental support for goal achievement (extrinsic motivation) and facilitating personal development (intrinsic motivation). In turn, employees may become more engaged in their job and have a lower turnover intention (Crawford, LePine and Rich, 2010). This proposal is in line with previous findings (e.g. Gerstner & Day, 1997). For example, researchers argue that doctors with high-quality LMX can obtain sufficient work resources and psychological resources to deal with the difficulties encountered in work, thus reducing turnover

intention (Huang *et al.*, 2010). Overall, our findings suggest that hospitals can improve doctor's work engagement and retain their talents by developing quality relationships between doctors and their supervisors which contribute to positive DPR.

Theoretical contributions

Near 20 years since the introduction of JD-R model by Demerouti and her colleagues (2001), the JD-R model has been applied in thousands of organizational studies across the world. The distinction of hindrance job demands and challenge job demands is being recognized as a breakthrough in explaining numerous mixed findings from tests of the model (Bakker and Demerouti, 2017).

This study contributes to the advancement and application of the JD-R model in two ways. First of all, we answer the call by Bakker *et al.* (2003, p. 413) that “[t]hus a task of researchers and practitioners is to uncover the specific constellations of job demands and job resources that are prevalent in specific job types, since this may facilitate primary and secondary workplace interventions”. Indeed, most studies on JD-R model use standardized scales or concepts to measure job resources (e.g. social support, supervisor support, autonomy, performance feedback) and job demands (e.g. workload, physical demands, emotional demands, cognitive demands, role demands), while every organization may have its own specific characteristics. Given this, it is important to apply the JD-R model to a broader range of demands and resources. This study expanded the job demands (i.e. DPR) construct to a broader boundary by identifying DPR as a challenge job demand (Van den Broeck *et al.*, 2010) that is

embedded in a specific working environment in Chinese healthcare organizations. Moreover, this study provided support for the concept of challenge job demand (DPR in this case) and its role in the motivational process driven by job resources (LMX, work engagement and turnover intention in this case). Thus, our exploratory model does advance knowledge and theoretical developments in this regard (Daniels, 2016). As Van den Broeck and colleagues (2010) argue, the researchers' task is to enhance the comprehensiveness and robustness of the JD-R model towards enriching its theoretical and practical value. Second, this study makes a unique contribution by applying the JD-R model that has originated in Europe to the specific contexts of Chinese healthcare work environment. By so doing, we not only improve our understanding of the particular phenomena occurring in work and organizational settings in the Chinese healthcare sector, but also contribute to the JD-R model literature with samples from the healthcare professional group from a country with a different economic, social and cultural context.

Practical implications

The present study has implications for policymakers, hospitals and managers. First of all, our study suggests that LMX is a feasible approach to manage DPR at the organizational level. This is important because the DPR issue in China is complex, embedded in a large and complex bureaucratic healthcare system. The results of this study indicate that LMX can promote the level of DPR, which in turn improves doctor's work engagement and lowers turnover intention. Therefore, it is worthwhile for

policymakers and hospitals to invest in medical leadership training. Interestingly, Chinese hospitals, particularly public hospitals are managed by experienced clinicians rather than by professional managers. Thus, policymakers and hospitals may consider recruiting and selecting professional managers as an alternative for the current appointment of clinicians for management position.

In addition, in order to increase the doctor's work engagement and lower turnover intentions, DPR is a critical factor. In this study, DPR consists of two components, "patient-centered treatment" and "mutual trust between doctor and patient". At the macro level, policymakers and hospitals need to create and maintain a positive and trustworthy healthcare environment, because mutual trust between the doctor and patient must be built on the patient's experience and perceptions of the hospital and the healthcare sector as a whole. At the individual level, doctors need more than medical skills and expertise in order to develop a positive working relationship with the patient. For example, a doctor needs to have emotional management and communication skills to better cope with emotionally demanding patients and their families. Moreover, the doctor as a knowledge worker should focus more on intrinsic satisfaction (e.g. professional pride) and treat patients with compassion rather than aiming for financial gains.

Limitations and future research

The following limitations are acknowledged. First of all, the sample was from a tertiary public hospital. This choice limited the generalizability of the findings to other Chinese

hospitals. In addition, although we used two waves of survey of the same hospital, this method did not allow us to test the causality relationship between variables, given the three-month interval and the variables measured in the two surveys. Finally, our argument that DPR is a challenge demand needs to be further explored and tested in future research. In this regard, future research may use qualitative methods to understand how DPR might have motivational and health impairment effects on doctors.

References

- Aryee, S., and Chen, Z. X. (2006). Leader-member exchange in a Chinese context: Antecedents, the mediating role of psychological empowerment and outcomes. *Journal of Business Research*, 59, 793-801.
- Bakker, A. B., and Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22, 273-285.
- Bakker, A. B., and Sanz-Vergel, A. I. (2013). "Weekly work engagement and flourishing: The role of hindrance and challenge job demands". *Journal of Vocational Behavior*, 83, 397-409.
- Bakker, A. B., Schaufeli, W. B., Sixma, H. J., Bosveld, W., and Van Dierendonck, D. (2000). Patient demands, lack of reciprocity, and burnout: A five-year longitudinal study among general practitioners. *Journal of Organizational Behavior*, 21, 425-441.
- Bakker, A., Demerouti, E., and Schaufeli, W. (2003). Dual processes at work in a call centre: An application of the job demands–resources model. *European Journal of Work and Organizational Psychology*, 12, 393-417.
- Cooke, F. L., and Zhan, C. (2013). Between market and bureaucracy: public healthcare reforms in China and nurses' terms and conditions. *The International Journal of Human Resource Management*, 24, 3178-3195.
- Crawford, E. R., Lepine, J. A., and Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. *Journal of Applied Psychology*, 95, 834-848.
- Daniels, K. (2016). An editorial in four parts, *European Journal of Work and Organizational Psychology*, 25, 329-334.
- Danner, D., Hagemann, D., and Fiedler, K. (2015). Mediation analysis with structural equation models: Combining theory, design, and statistics. *European Journal of Social Psychology*, 45, 460-481.
- Demerouti, E., Bakker, A. B., Nachreiner, F., and Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499-512.
- Demerouti, E., Le Blanc, P. M., Bakker, A. B., Schaufeli, W. B., and Hox, J. (2009). Present but sick: a three-wave study on job demands, presenteeism and burnout. *Career Development International*, 14, 50-68.
- Elfering, A., Grebner, S., Leitner, M., Hirschmüller, A., Kubosch, EJ, & Baur, H. (2017). Quantitative work demands, emotional demands, and cognitive stress symptoms in surgery nurses. *Psychology, health & medicine*, 22 (5), 604-610.

Farh, J. L., Tsui, A. S., Xin, K., and Cheng, B. S. (1998). The Influence of Relational Demography and Guanxi: The Chinese Case. *Organization Science*, 9, 471-488.

Gerstner, C. R., and Day, D. V. (1997). "Meta-Analytic Review of Leader–Member Exchange Theory: Correlates and Construct Issues". *Journal of Applied Psychology*, 82, 827-844.

Graen, G. B., and Uhl-Bien, M. (1991). The transformation of professionals into self-managing and partially self-designing contributors: Toward a theory of leadership-making. *Journal of Management Systems*, 3, 25-39.

Graen, G. B., and Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly*, 6, 219-247.

Hakanen, J. J., Schaufeli, W. B., and Ahola, K. (2008). The Job Demands-Resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress*, 22, 224-241.

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 & Medicine*, 123, 64-71.

Hellin. (2002). The physician-patient relationship: recent developments and changes. *Haemophilia*, 8, 450-454.

Huang, X., Chan, S. C. H., Lam, W., and Nan, X. (2010). The joint effect of leader–member exchange and emotional intelligence on burnout and work performance in call centers in China. *International Journal of Human Resource Management*, 21, 1124-1144.

Lepine, J. A. , Podsakoff, N. P. , & Lepine, M. A. . (2005). A meta-analytic test of the challenge stressor--hindrance stressor framework: an explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal*, 48, 764-775.

Loi, R., Chan, K. W., and Lam, L. W. (2014). Leader–member exchange, organizational identification, and job satisfaction: A social identity perspective. *Journal of Occupational and Organizational psychology*, 87, 42-61.

Loi, R., Ngo, H. Y., Zhang, L., and Lau, V. P. (2011). The interaction between leader–member exchange and perceived job security in predicting employee altruism and work performance. *Journal of Occupational & Organizational Psychology*, 84, 669-685.

Ma, S., Xu, X., Trigo, V., & Ramalho, N. J. (2017). Doctor-patient relationships (DPR)

in China: Managers and clinicians' twofold pathways from commitment HR practices. *Journal of Health Organization and Management*, 31, 110-124.

Mao, J., Chiu, C. Y., Owens, B. P., Brown, J. A., and Liao, J. (2019). Growing Followers: Exploring the Effects of Leader Humility on Follower Self-Expansion, Self-Efficacy, and Performance. *Journal of Management Studies*, 56, 343-371.

Pan, Y., Yang, X. H., He, J. P., Gu, Y. H., Zhan, X. L., Gu, H. F., 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*, 23, 111-116.

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

Preacher, K. J., and Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36, 717-731.

Rosin, H. M., and Korabik, K. (1991). Workplace variables, affective responses, and intention to leave among women managers. *Journal of Occupational & Organizational Psychology*, 64, 317-330.

Scandura, T. A., and Graen, G. B. (1984). Moderating Effects of Initial Leader-Member Exchange Status on the Effects of a Leadership Intervention. *Journal of Applied Psychology*, 69, 428-436.

Schaufeli, W. B., and Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25, 293-315.

Schaufeli, W. B., and Taris, T. W. (2014). A critical review of the Job Demands-Resources Model: Implications for improving work and health. In *Bridging occupational, organizational and public health* (pp.43-68): Springer.Dordrecht.

Schaufeli, W. B., Salanova, M., Gonzalez-Roma, V., and Bakker, A. B. (2002). The Measurement of Engagement and Burnout: A Two Sample Confirmatory Factor Analytic Approach. *Journal of Happiness Studies*, 3, 71-92,

Tsui, A. S., and Farh, J. L. (1997). Where guanxi matters: Relational demography and guanxi in the Chinese context. *Work and Occupations*, 24, 56-79.

Uhl-Bien, M., and Maslyn, J. M. (2003). Reciprocity in Manager-Subordinate Relationships: Components, Configurations, and Outcomes. *Journal of Management*, 29, 511-532.

Van den Broeck, A., De Cuyper, N., De Witte, H., and Vansteenkiste, M. (2010). Not all job demands are equal: Differentiating job hindrances and job challenges in the Job Demands–Resources model. *European Journal of Work and Organizational Psychology, 19*, 735-759.

Wang, H., Law, K. S., Hackett, R. D., Wang, D., and Chen, Z. X. (2005). Leader-Member Exchange as a Mediator of the Relationship between Transformational Leadership and Followers' Performance and Organizational Citizenship Behavior. *Academy of Management Journal, 48*, 420-432.

Wee, S. (2018). China's Health Care Crisis: Lines Before Dawn, Violence and 'No Trust', *The New York Times*, p. Retrieved from <https://www.nytimes.com/2018/09/30/business/china-health-care-doctors.html>

Xanthopoulou, D., Bakker, A. B., Dollard, M. F., Demerouti, E., Schaufeli, W. B., Taris, T. W., Schreurs, P. J. (2007). When do job demands particularly predict burnout? The moderating role of job resources. *Journal of Managerial Psychology, 22*, 766-786.

Zeng, W. L., Ma, S. Z., and Gou, L. (2018). Development and effectiveness evaluation of the Chinese doctor-patient relationship scale. *China Health Quality Management, 25*, 57-60.

Figures and Tables

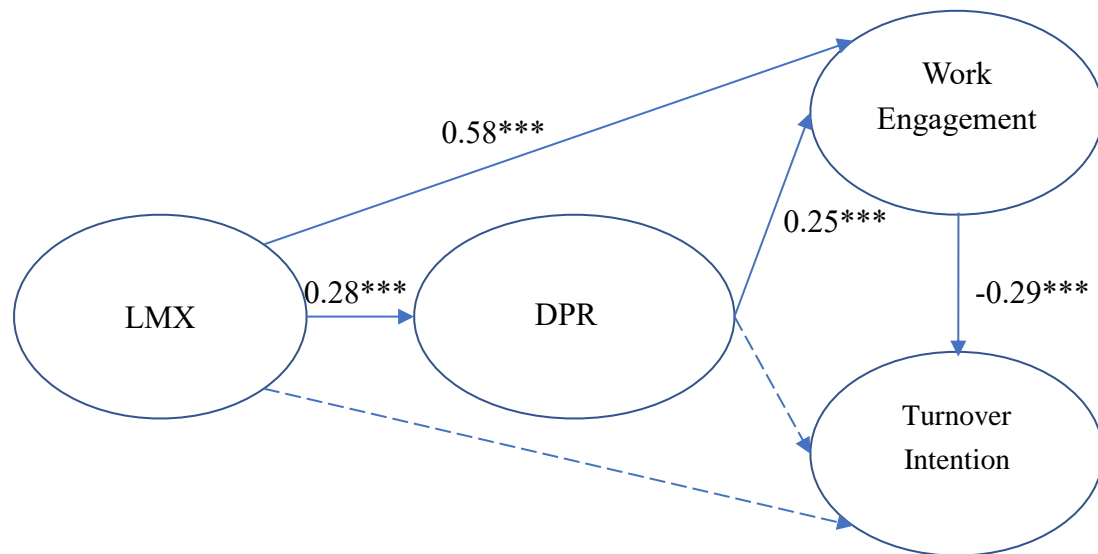


Figure 1 Standardized path coefficients of the overall model

Table 1 Means, standard deviations and correlations among the key variables

Variable	Mean (SD)	1	2	3	4	5	6	7	8
1.Gender									
2.Age		-.09							
3.Marital status		-.06	.32**						
4.Job function		.16**	.005	-.03					
5.Organization tenure		.00	.85**	.28**	.06				
6.LMX	4.79(0.86)	-.13*	.01	.03	-.17*	.02			
7.DPR	5.23(0.54)	-.04	.02	.12*	-.11*	.05	.22**		
8.Work Engagement	4.83(0.86)	-.16**	.08	.05	-.11*	.06	.59**	.29**	
9.Turnover Intention	1.67(0.81)	.05	-.02	.01	.002	.02	-.34**	-.20**	-.40**

Note: N=381. ** $P=0.01$; * $P=0.05$;

Table 2. Comparison of measurement models

Model description	X^2	df	X^2/df	ΔX^2	RMSEA	CFI	TLI	SRMR
1. four-factor model (LMX, DPR, WE, TI)	295.54	145	2.04	—	.05	.93	.96	.05
2. three-factor model (LMX and DPR combined as one factor)	1572.42	149	10.55	1276.88***	.16	.64	.67	.09
3. two-factor model (LMX, DPR and WE combined as one factor)	1981.45	151	13.12	409.03***	.18	.58	.58	.10
4. one-factor model (all items combined as one factor)	2909.97	152	19.15	928.52***	.22	.44	.37	.11

Note. N=381; *** $p < .001$; LMX=leader-member exchange; DPR=doctor-patient relationship; WE=work engagement; TI= turnover intention; df= degree of freedom.

Table 3. Procedure of structural equations modelling comparison

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA	$\Delta\chi^2$	Δdf	<i>p</i>	AIC	SRMR
Full model with sequential mediation (Final Model)	282.07	145	1.95	.97	.97	.05	—	—		410.07	.04
Alternative Model 1: WE as mediator only	321.72	147	2.19	.96	.96	.06	39.64	2	<.001	445.72	.11
Alternative Model 2: DPR as mediator only	466.59	147	3.17	.94	.92	.08	184.51	2	<.001	590.59	.18
Alternative Model 3: Direct effects only	484.68	148	3.28	.93	.92	.08	202.61	3	<.001	606.68	.19
Alternative Model 4: Reversed mediation	286.79	146	1.96	.97	.97	.05	4.72	1	<.05	374.79	.05
Alternative Model 5: Reversed Causality	286.79	146	1.96	.97	.97	.05	4.72	1	<.05	374.79	.05

Table 4 Standardized Effects

Structural path	Direct Effect	Indirect Effect (95% CI)	Overall Effect (95% CI)
DPR	0.28**(0.12, 0.42)	-	0.28**(0.12, 0.42)
LMX→	WE 0.58** (0.47, 0.67)	0.07** (0.03, 0.12)	0.65** (0.55, 0.74)
	TI -	-0.27** (-0.35, -0.18)	-0.27** (-0.35, -0.18)
DPR→	WE 0.25**(0.14, 0.38)	-	0.25** (0.14, 0.38)
	TI -	-0.10** (-0.15, -0.06)	-0.10* (-0.15, -0.06)
WE→	TI -0.41** (-0.52, -0.29)	-	-0.29** (-.52, -.29)

Note: * $p < .05$, ** $p < .01$; LMX=leader-member exchange; DPR=doctor-patient relationship; WE=work engagement; TI=turnover intention.