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Group Citizenship Behavior in Healthcare Organization, Doctor-Patient Relationship, Work Engagement and Turnover Intention: A Moderated Mediation Model

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ABSTRACT

The effective functioning of health care organizations depends on the inter-professional collaboration among healthcare professionals from diverse backgrounds, representing different work units, to provide quality services. This study aims to understand how group citizenship behavior (GCB) that supports other work groups may moderate the relationship between doctor-patient relationship (DPR), work engagement and turnover intention.

The data for this study were collected through two waves of questionnaire survey at a tertiary public hospital in China. The hypothesized model was tested by Hayes's PROCESS macro. There were significant differences of perceived GCB across different professional units with work units practicing a multidisciplinary working approach and working in the high-stake working environment reported higher levels of GCB. The results show that work engagement mediates the relationships between DPR and turnover intention and GCB accentuates the positive relationship between DPR and work engagement. Specifically, the path between DPR and work engagement was stronger for individuals with high perceived GCB than those with low perceived GCB.

The study contributes to the development of Job Demands-Resources model with integrating GCB into the model and enriching the challenge job demand conceptualization by focusing on DPR in Chinese health care setting. In practice, the hospital administrators should encourage GCB to improve organizational effectiveness and doctors' attitudes.

Keywords: Group citizenship behavior (GCB), doctor-patient relationship (DPR), work engagement, turnover intention, job demands-resources (JD-R) model

Highlights:

- Discretionary behaviors across different professional units are essential for health care organizations to provide effective and quality services.
- There were significant differences of perceived GCB across different professional units with work units practicing a multidisciplinary working approach and working in the high-stake working environment reported higher levels of GCB.
- Work engagement mediates the relationships between DPR and turnover intention and GCB accentuates the positive relationship between DPR and work engagement.
- DPR as challenge job demand has motivation potential for Chinese healthcare workers.
- Hospital administrators should encourage GCB to improve doctors' work engagement.

Introduction

The marketization of healthcare in China, along with its associated reforms and insufficient government funding for public hospitals, has forced public hospitals to become commercial organizations with patients as “clients” and doctors as medical service providers.¹ This new provider-client relationship leads to a growing situation of mutual distrust between doctors and patients and an associated growth in medical disputes.²

The complexity of the Chinese healthcare system, with its numerous stakeholders and profound change, has prompted the use of more organizational-directed approaches to understand and more effectively manage the evolving nature of the DPR.² Such approaches are encouraging more attention to the demands of the job, available resources, and the relationships among colleagues in organizational contexts. Scholars have argued that organizational citizenship behavior (OCB) employees’ and discretionary behavior that is not directly or explicitly recognized by a formal reward system enhance organizational functioning and effectiveness by contributing to the development of social exchange and social capital in organizations.³⁻⁵ In the healthcare setting, the effective functioning of the organization (e.g., hospital) depends on the inter-professional collaboration among healthcare professionals from diverse backgrounds, possibly representing different work units, to provide services for the benefit of healthcare users.⁶ In other words, discretionary behaviors across different professional units are essential in healthcare organizations. We are therefore interested in understanding how organizational citizenship behavior in work groups (group citizenship behavior, GCB) in healthcare organizations affects the relationship between DPR and doctor’s work attitude (work engagement and turnover intention).

The Job Demands–Resources (JD-R) model is a good fit in guiding such investigations, as the framework incorporates a wide range of working conditions into the analyses of organizations and employees and considers both negative and positive drivers and outcomes

of employee well-being.⁷ In this study, we argue that in the current Chinese healthcare setting, DPR acts as a challenge job demand, given its characteristics of being not only physically and psychologically stressful, but also financially and professionally rewarding, which will be elaborated further in literature review. This study aims to make a theoretical contribution in the JD-R literature by exploring the nature of the DPR as a challenge demand that has the potential to improve doctors' engagement and reduce turnover intention. The conceptual development of this construct of challenge job demand is cited as an area for future research towards establishing a more robust model⁸. For instance, Lesener, Gusy, and Wolter⁹ in their meta-analysis report that there is evidence that challenging job demands such as workload, time pressure, or job responsibility may be judged not only as stressful, but also challenging demands that have the potential to foster work engagement, personal growth, and future gains.

Given the well-established motivational process in JD-R model studies, we expect DPR as a challenge job demand promotes work-related motivation and thus stimulate positive employee well-being and organizational outcomes. We are keen in understanding the association between DPR and work engagement rather than others like job satisfaction or organizational commitment because given the intense relationship between doctor and patient in China, work engagement is much more relevant. In a healthcare workplace, work engagement reflects a state of devoting all the energies towards work to make a difference in providing treatment and patient care.

In addition, building on the concept of "social resources" in the JD-R model¹⁰ and OCB literature, we argue that GCB, the work group behaviors that support other work groups¹¹, can promote social exchange that in turn strengthen the motivation process in the JD-R framework.

Thus, the aim of this study is twofold: first, we aim to theoretically integrate and explore DPR as challenge job demand for healthcare workers in the JD-R model, contributing to the development of JD-R model. Second, we want to investigate the moderating effect of GCB as a resource in the healthcare industry on the relationship between DPR, work engagement, and turnover intention. By so doing, we provide empirical support for the association between OCB and social exchange (e.g., Konovsky & Pugh, 1994).¹²

JD-R model and DPR as challenge job demand

The JD-R model is a useful framework to study work environments and occupations in which employees work with people,¹³ with healthcare professionals being the target of past research.¹⁴⁻¹⁶ The central idea of the JD-R model is that working conditions, which are specific to every occupation, can generally be classified as either job demands or job resources.⁷ Job demands refer to the physical, social, or organizational aspects of the job that require the 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.⁷

In extensions of the model,^{17, 18} job demands include challenges (e.g., workload, time pressure, and responsibility) and hindrances (e.g., role conflict, role ambiguity, hassles, among others).¹⁹ 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 as being instrumental to achieve valued outcomes such as work goal attainment.¹⁸ More recently, researchers extended the JD-R model by distinguishing two types of job resources: task resources and social resources by integrating Guanxi/social exchange into the JD-R framework.¹⁰

In this study we argue that the DPR in current Chinese healthcare setting acts as a

challenge job demand, because DPR for Chinese doctors on the one hand is physically and psychologically stressful, on the other hand financially and professionally rewarding. DPR herein refers to the interaction between doctors and patients in the medical process as a specific interpersonal relationship with the two as the main subjects.²⁰ In the context of healthcare setting in China, doctors engage a high-pressure workplace, in which employees in healthcare occupations are regularly confronted with demanding patients.¹⁶ For example, Chinese doctors need to deal with emotionally demanding patients and/or their families who tend to consider themselves as “clients”.²¹ Such emotional demands, interpersonal conflicts and harassment by patients are typical job demands.²² However, unlike “lack of reciprocity” in the exchange relationship with patients in Western public healthcare organizations,¹⁴ Chinese doctors benefit from both (potential) financial and professional reciprocity in their relationships with patients. This “pragmatism-based model” of DPR is focused on an economic exchange whereby 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.²³ In other words, working with patients presents doctors with the opportunity to expend their efforts to successfully meet these challenging demands to reveal to themselves and to others that they are competent and high-performing health professionals.²⁴ Furthermore, such a sense of pride, responsibility, and professionalism may facilitate their personal and professional development.

Based on the JD-R model, DPR acts as a challenge job demand that can be conceptualized as a resource that has the motivational potential to boost levels of work engagement.^{22, 25} For example, challenge job demands were positively related with work engagement (i.e., vigor) because they yielded beneficial outcomes such as goal achievement and need satisfaction.¹⁸ While Chinese doctors might need to invest their professional and

emotional efforts in managing their DPR, in doing so they gain both financially and through professional recognition. Further, DPR essentially represents a form of interpersonal relationship. A positive DPR helps to improve patient compliance, patient care, and patient satisfaction, and reduces medical costs as well,²⁶ thus enhancing the doctor's sense of professional achievement and the meaningfulness of the work itself, which is significantly related to work engagement in earlier studies.²⁷ For example, it was found that dentists' pride in the profession predicted their work engagement.²⁸ Empirical studies in China reveal that positive DPR can boost medical staff's professional identity, work engagement, and work enthusiasm,²⁹ and reduce turnover intention.³⁰

Reviews of the literature suggest that work engagement is negatively associated with turnover intention. For example, job resources were predictors of dedication (a dimension of work engagement), which in turn was related to turnover intentions.³¹ That is, dedication acted as a mediator between job resources and turnover intentions. Drawing on the JD-R theory and empirical evidence on the motivation-driven process,³¹ we argue that 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). In Chinese healthcare organizations, DPR may play an extrinsic role because it is instrumental in achieving financial gain. But DPR also plays an intrinsic motivational role because it satisfies a doctor's high-end needs for professional pride and sense of achievement. These motivation roles may promote work engagement and reduce turnover behavior or intention. Indeed, the limited empirical study to date suggests that Chinese doctors' perceived positive DPR has a significant negative impact on turnover intention.³² Thus, we hypothesize that:

H1: Work engagement mediates the relationship between doctor-patient relationship and doctors' turnover intention.

Group citizenship behavior as a moderator in the JD-R model

Organizational scholars have long called for more unit-level GCB study, but there are different conceptualizations of unit-level or group GCB.³³ In the present study GCB is defined as “*a distinct group-level phenomenon concerning the extent to which work groups engage in behaviors that support other work groups and the organization as a whole*”.¹¹ This conceptualization suggests that GCB refers to a variety of behaviors directed to other groups or the organization, not toward individuals inside the group or in other groups. Group-level phenomena may be of special interest for investigation in the Chinese context, and in healthcare organizations. China is a collectivist society³⁴ where individuals are inclined to follow social norms in groups, and value harmony to maintain mutually beneficial relationships.¹¹ It is therefore natural for Chinese to engage in GCB that strengthens relationships across different groups or departments for the interests of the group *per se* and for the overall interest of the organization. In addition, it is well documented that in healthcare organizations, groups are professionally specific, such as doctors and nurses,³⁵ and each health care profession has a different culture and shared behavior.³⁶ However, due to the task complexity and high-stake work environment, inter-professional or inter-professional group collaboration is becoming increasingly recognized for patient care quality.³⁷

Taking all these features together, GCB is particularly important for the research into Chinese health organizations. However, there is limited empirical research about GCB in healthcare organizations and its association with individual attitudes and organizational outcomes. Therefore, we introduce GCB and investigate its moderating role in the JD-R model, as we expect that GCB promotes social resources (i.e., work-related interactions across work groups) proposed.¹⁰ Specifically, we are interested in understanding whether GCB moderates the mediated relationship between DPR and turnover intention via work

engagement.

Researchers argue that citizenship behaviors contribute to the development of social capital and social exchange in organizations.^{4,12} More recent study provided empirical support for the link between GCB and social capital within the group.⁵ Social exchange theory and the norm of reciprocity offer insightful reasoning to explain functioning of GCB in the JD-R model.³⁸ In the Chinese context reciprocity is reflected in the exchange of “favor” (*renqing*, in Chinese). When persons receive benefits or support from somebody at a particular time, normally from one’s social network, they have an implicit obligation to subsequently return the favor (*renqing*), which is a normative standard for regulating social exchange.¹⁰ GCB in support of other work groups or the organization, may not only produce strong social relationships with other work groups, but also lead to the return of favors from other work groups or more support from the organization. As a result, engaging in GCB may provide the group and its group members with more job resources (e.g., information and knowledge sharing, mutual trust, supports). Having more job resources available is expected to strengthen the motivation process in the JD-R model. In the context of Chinese healthcare organizations, we expect that GCB enables doctors to access and benefit from more resources (e.g., social and emotional supports) from other groups or departments, which in turn will strengthen the motivation effect of DPR as a challenge job demand. Thus, we hypothesize that:

H2: Group citizenship behavior strengthens the mediated doctor-patient relationship and turnover intention via work engagement, such that the mediated relationship is stronger under high perceived group citizenship behavior than under low perceived group citizenship behavior.

Method

Participants and procedure

This study was designed to test the hypotheses with two waves of self-reported data. The participants were 460 doctors who were randomly selected from 920 working in the same Chinese public hospital. A total of 460 registered doctors were randomly selected for the first survey in September 2017 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, GCB and demographic variables with a response rate of 94%. Three months later, the follow-up questionnaire in the second study phase (T2) was sent to the 431 doctors identified in the first survey. The second survey measured work engagement and turnover intention among other factors. A total of 381 valid questionnaires from the two surveys were obtained. Among them, 225 participants were males (59.06%) with an average age of 38.27 (± 7.97) years old. Most of the participants (62.47%) had work experience of 10 years or more.

Measurements

The demographic variables included gender, age, education, tenure, and work unit (department). We used a six-point Likert scale (1= "strongly disagree", 2= "disagree", 3= "partially disagree", 4= "partially agree", 5= "agree", 6= "strongly agree") to measure all the scales, because Chinese subjects tend to take a middle position due to the influence of the "golden mean" tradition and culture.³⁹

Group citizenship behavior. GCB was measured by the scale developed by Chen et al. (2005).¹¹ An example item is "My work group as a whole provides assistance to other work groups with heavy workload". The Cronbach's α in the present study was 0.91.

Doctor-patient relationship. DPR was measured with the DPR scale in China (DPR-C) .⁴⁰ The scale includes two components of doctor's perceptions of the doctor-patient relationship: (1) patient-centered treatment, including "*I provide the optimal treatment to my patient after considering many alternatives*"; and (2) mutual trust between the patient and doctor, including "*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 the Utrecht Work Engagement Scale (UWES-9).⁴¹ An example item is "*At my work, I feel bursting with energy*". The Cronbach's α was .90.

Turnover intention. The turnover intention was measured with the scale.⁴² An example item is "*I have thought of leaving this hospital*". The Cronbach's α was .90.

Data analysis strategy

Statistical analyses were performed using SPSS20.0 and AMOS17.0 software. First, we conducted the analyses of descriptive statistics, correlations, and One-way ANOVA. Then, hypotheses were tested using SPSS PROCESS macro program (version 3.2). We used the bootstrapping confidence interval of 95 per cent (based on 5000 bootstrap samples) to assess the significance of the indirect effects.⁴³

Results

Measurement Model

All scales used in the study were subjected to CFA analysis with model fit cut-offs: $\chi^2/df \leq 3$, RMSEA $< .08$, CFI and TLI $> .97$, and SRMR $< .05$.⁴⁴ Our measurement model was composed of four latent factors: GCB, DPR, work engagement, and turnover intention. The confirmatory factor models (Table 1) showed that the four-factor model yielded a better fit to the data ($\chi^2/df = 1.79$, RMSEA = .05, CFI = .98, TLI = .97, SRMR = .05) than alternative models. We

assessed the common method variance (CVM) by conducting a single factor CFA solution and judging its goodness of fit.⁴⁵ Results reported a poor fit for the one-factor model (CMIN= 3243.30, df = 170, RMSEA = .22, CFI = .41, TLI = .34, SRMR = .17). Furthermore, given this finding and two-wave data collection over times 1 and 2, common method bias is not seen to be a concern for this study.

Insert Table 1 about Here

Preliminary analyses

The means, standard deviations and correlations for the key variables are reported in Table 2. The results showed that GCB was positively associated with DPR ($r = .53, p < .01$) and work engagement ($r = .33, p < .01$), but negatively associated with turnover intention ($r = -.20, p < .01$). DPR was positively associated with work engagement ($r = .29, p < .01$), but negatively associated with turnover intention ($r = -.20, p < .01$). Lastly, work engagement was negatively associated with turnover intention ($r = -.40, p < .01$). All significant correlations are in the expected direction.

Insert Table 2 about Here

For the comparison between groups, we first used Levene's test to assess homogeneity of variances, which revealed that the p value is lower than 0.05 ($F(6,374) = 4.18, p < .05$). We then adopted Tamhane's T2 test⁴⁶ in view of the unequal variance in the groups. The results are reported in Table 3. There were significant differences of perceived GCB across different professional units. Respondents of the Oncology Unit and Rehabilitation Unit reported the highest GCB mean (5.85 ± 0.48), which was significantly higher ($p < .05$) than that of other units. GCB of Emergency, Anesthesiology, and Intensive Care (mean = 5.42, SD = 0.58) was

significantly higher ($p < .05$) than that of the Internal Medicine Unit (mean = 4.92, SD = 0.70). No significant differences were observed among the Surgery Unit, Units of Obstetrics and Gynecology, and Pediatrics, Community-based Health Service Center and Other Units, and Medical Technologies.

Insert Table 3 about Here

Hypothesis testing

Tables 4 and 5 show the results of analysis on the mediating and moderating models. By controlling variables of gender, age, marital status, tenure, and educational background, the hypothesized model was tested by estimating the mediation and moderation effects with a 95% confidence interval.

We followed the four-step procedure to test the mediation effect and the results met the mediation conditions.⁴⁷ Specifically, in the first step, DPR negatively predicted turnover intention ($\beta = -.30, p < .001$, see Model 1 of Table 4). In the second step, DPR positively predicted work engagement ($\beta = .47, p < .001$, see Model 2 of Table 4). In the third step, after controlling for DPR, work engagement negatively predicted turnover intention ($\beta = -.34, p < .001$, see Model 3 of Table 4). Lastly, the bootstrapping results indicated a significant indirect effect of DPR on turnover intention via work engagement ($\beta = -.16$; 95% CI $-0.24, -.10$). Overall, the four criteria for mediation effect were fully satisfied, and thus Hypothesis 1 was supported.

Insert Table 4 about Here

Moderated mediation analysis using Model 59 was conducted to test Hypothesis 2, and the results are reported in Table 5. The present study estimated the moderating effect of GCB on the following paths: the relationship between DPR and turnover intention (Model 1); the relationship between DPR and work engagement (Model 2); and the relationship between work engagement and turnover intention (Model 3). Moderated mediation was established if either or both of two patterns existed:⁴⁸ the path between DPR and work engagement was moderated by GCB, and/or the path between work engagement and TI was moderated by GCB.

Insert Table 5 about Here

As shown in Table 5, in Model 1 there was a significant main effect of DPR on turnover intention ($\beta = -.21, p < .05$), and this effect was moderated by GCB ($\beta = -.23, p < .05$). Model 2 showed that the effect of DPR on work engagement was significant ($\beta = .28, p < .01$), and this effect was also moderated by GCB ($\beta = .26, p < .05$). Finally, Model 3 indicated that the effect of work engagement on turnover intention was significant ($\beta = -.33, p < 0.001$), but this effect was not moderated by GCB. We plotted predicted work engagement against DPR separately for low and high levels of GCB (Figure 1). Simple slope testing showed that the association between DPR and work engagement is stronger for high GCB participants than for low GCB participants. In addition, the moderated mediation index obtained from the PROCESS estimation indicated that the effect of group citizenship on the indirect relationship between DPR and work engagement has a moderating effect value of $-.09$ (with a confidence interval of $-.16, -0.09$). Therefore, Hypothesis 2 was supported.

We further performed HLM analysis to analyze the cross-level moderation effect GCB in which GCB was treated as a unit-level variable. The result revealed that GCB at unit level

accentuates the positive relationship between DPR and work engagement ($\beta = .80, p < .01$), providing further evidence for the moderation effect of GCB.

Insert Figure 1 about Here

Discussion

Using a two-wave survey of 381 doctors from a tertiary public hospital in China, this study showed that work engagement played a mediating role in the relationships between DPR and turnover intention, and GCB moderated the mediating effect. The results support our proposition that GCB may develop social resources, and our argument that DPR in China's commercialized and mistrusting healthcare setting acts as a challenge demand.

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 (i.e., DPR) and integrating GCP as antecedent of social resources into the JD-R model with evidence from the healthcare occupation in China. The findings and implications are now discussed in more detail.

DPR as a challenging job demand

DPR was positively related to work engagement and was negatively related to turnover intention through the mediation 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.¹⁷ These findings provide further support for the argument that challenge demand has the

motivational potential to promote work engagement.²² The result of this study suggests that DPR engage doctors more in work (work engagement), which in turn reduces their tendency to leave. As challenge job demand, the challenging DPR may stimulate doctors to pursue more challenging work goals and improve their sense of accomplishment in the process of patient care, which increases work engagement and lowers turnover intention.

GCB difference across professional groups and its moderating role

This study revealed that there were significant differences in the level of GCB across different professional units in healthcare sectors. Respondents working in oncology and rehabilitation units reported the highest GCB, significantly higher than that of other units. And respondents from units of emergency, anesthesiology, and intensive care reported the second highest GCB and it was significantly higher than that of the internal medicine unit. Our interpretation is the following: diagnosing and treating cancer is complex, and patients in the above medical units normally need to stay hospitalized for a longer period and the condition of some patients receiving palliative treatment could evolve quickly, and with fatal consequence. Therefore, doctors working in these units are in greater need of collaboration and support from other professional units, and thus develop a stronger GCB toward other work units due to social exchange with those units. Similarly, doctors of emergency, anesthesiology, and intensive care units care for patients who are often seriously ill or require complex investigations. They are working in highly pressured, fast-changing, and live-or-die situations and the effectiveness of their work involves expertise and skills of several different medical and health professionals through inter-professional collaboration or units' cross work and cooperation.

On the contrary, respondents of the internal medicine unit reported the lowest GCB, significantly lower than those of oncology, rehabilitation, emergency, anesthesiology, and intensive care units, because physicians specializing in internal medicine typically care for

patients with undifferentiated disease, and most often these physicians focus on diseases affecting particular organs or organ systems. Thus, their work is less complex and more independent, compared with their colleagues in oncology, emergency, and intensive care units, and thus they perform less GCB toward other work units.

Taking the results together, it can be concluded that those professional units that engage in complex and high-stake tasks reported higher levels of GCB in their work units. In other words, healthcare work units that engage in complex and demanding inter-professional collaboration from other work units, as well those that involve high-pressure and high-stake tasks tend to engage in greater GCB toward other work units. In short, the results of this study highlight two themes that could be antecedents for GCB in healthcare organizations. One theme is that a multidisciplinary approach to working may help develop GCB in the work unit care team. Another theme is the high-stake working environment that is indicated by high levels of GCB reported in emergency, anesthesiology, and intensive care units. Literature suggests that a significant cause of an employee's helping behavior is that the employee has received OCB from coworkers.⁴⁷ In other words, the high level of GCB from oncology, rehabilitation, emergency, anesthesiology, and intensive care units can be considered as reciprocal behaviors for the support received from other work units.⁴⁹

The results of this research provide further support for the argument that employees reciprocate in the form of GCB support from their organization.⁵⁰ On the basis of norm of reciprocity,⁵¹ when a work unit receives support from another work unit, it has an obligation to pay that support back so that the work unit can maintain the good will and relationship, and to continue to receive benefits in the future. This finding seems to indicate a virtuous circle for GCB: a work unit (e.g., intensive care unit) receives help from other work units, and then it (intensive care unit) tends to engage in more GCB toward other work units that offer help. As a result, a work culture of reciprocity may be developed and the reciprocity

relationship among work units is maintained and strengthened. Next, we discuss the benefit of high levels of GCB among work units that were found in this study.

The correlation analysis revealed that GCB was positively associated with DPR and work engagement while negatively associated with turnover intention. Researchers⁵² found that health care employees' favorable perceptions of coworker support improve work engagement which in turn increase intention to remain. Our results may imply that favorable perceptions of GCB have a similar outcome. Such findings indicate the positive effect of GCB on employees' work attitudes. The most significant finding is that GCB accentuated the indirect relationships between DPR and turnover intention through work engagement. The results showed that GCB accentuated only the path between DPR and work engagement. The relationship between DPR and work engagement was much stronger among doctors with a high level of GCB. Our interpretation is that doctors working in units that exhibited a high level of GCB may have more support from other work units due to norm of reciprocity, as discussed above. From the job resources perspective, GCB may enable the members of a work unit to access more resources (e.g., social, and emotional resources) from other work units. The benefits of GCB thus strengthen the motivational process from DPR to work engagement.

Theoretical contribution

This study makes three theoretical contributions. First, in literature there has been limited study on the consequence of GCB, and rarely in the healthcare sector. We contribute to OCB research by exploring the role of OCB at the group level (GCB) in affecting employees' work attitude and by focusing on healthcare professionals who are encouraged to engage in inter-professional collaboration to perform their job. This study demonstrates that due to different levels of task complexity, stake, and necessity for inter-professional collaboration, emergency and intensive care units exhibited higher levels of GCB than an internal medicine unit. The

results are in line with subculture study in healthcare sectors, ⁵³ but highlight the value of GCB in promoting positive work attitudes of healthcare professionals.

Second, the current study contributes to the development of the JD-R model by integrating the concept of GCB (an under researched but important construct) into the JD-R framework. Social resources are important in the motivational process of the JD-R model,¹⁰ and there is increasing evidence for the link between citizenship behavior and social capital/social resources due to social exchange.^{4, 5} More recently there have been a few studies integrating OCB in JD-R, ⁵⁴ but as far as we know, this is the first study including GCB in the JD-R model. The results of the present study may open new lines of research for better understanding the role of OCB/GCB in the JD-R model, in particular OCB/GCB as antecedent of social resources.

Lastly, we advance job demands research by examining DPR in China as a challenge demand in the JD-R model. The findings provide preliminary evidence for our argument that the DPR as a challenging job demand and provide new evidence for the development of the JD-R model in the Chinese context. Given Chinese healthcare organizations' unique and challenging characteristics, this study identified DPR as a challenge job demand that is embedded in a specific working context. Moreover, this study provides support for the conceptualization of challenge job demand (DPR in this case) and its motivational potential in the JD-R framework. Thus, this study advances knowledge and theoretical developments in the job demands research.

Practical implications

Our study has important practical implications for hospital managers and doctors. First, although DPR is a challenging issue in the healthcare sector, DPR as a challenge job demand has motivation potential. Hospital managers should develop policies to leverage the motivational roles of DPR. We believe that it would be sustainable for hospitals to focus more on DPR's intrinsic motivational role of achieving a doctor's high-end needs for

professional development and professional pride rather than on the extrinsic role of achieving financial gain. In addition, at a more micro level, encouraging “patient-centered treatment” and “mutual trust between doctor and patient” (two dimensions of DPR in this study) helps to increase a doctor’s work engagement and in turn lower turnover intentions.

Second, our study found that the positive relationship between DPR and work engagement is stronger for doctors who perceive higher level of GCB in their work unit. That is, citizenship behavior of a work unit toward other work units helps to strengthen the positive influence of DPR on work engagement, which ultimately lowers turnover intention. The results suggest the benefits of promoting GCB in healthcare organizations. The results indicate that GCB is a critical factor that can be leveraged to increase the doctor's work engagement and lower turnover intentions.

However, it is important to recognize that different professional work units in healthcare organizations differ in their practice of GCB, as this study revealed. The finding that higher levels of GCB were observed in the work units practicing a multidisciplinary working approach and working in the high-stake working environment may imply that promoting multidisciplinary or cross-disciplinary working practices or job rotation in different work units may help inter-professional collaboration across different work units. Based on present study results, we propose that promoting a work culture of reciprocity may help to develop GCB in healthcare organization, thus creating a virtuous circle between reciprocity and GCB.

Limitations and future research

The following limitations are acknowledged. First, the sample was from a tertiary public hospital. This choice limited the generalizability of the findings to other Chinese hospitals and those outside China. 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. Third, our

argument that DPR is a challenge demand needs to be further examined in future research. For example, in this self-reported data, DPR might be inflated due to social desirability bias. In this regard, future research may use supervisor-rated DPR to understand how DPR might have motivational and health impairment dual effects on doctors. Finally, GCB in this study was measured at the individual level, not at the group level. Future study may measure the GCB at group level in healthcare sectors. Future research may also use qualitative methods to understand how social exchange occurs in different work units in the healthcare setting.

Conclusion

Doctors in China are working in an increasingly commercialized healthcare environment. There is the need for innovative actions by institutions in response to the complexity of healthcare delivery including the need to drive change in such bureaucratic systems. This application of the JD-R model to understand the relationship between GCB, DPR, work engagement, and turnover intention suggests that developments that focus upon GCB might offer feasible approaches to improve DPR, which in turn might additionally increase doctors' work engagement and lower their turnover intentions.

Ethical approval

Ethical considerations related to human rights of subjects.

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Table 1. Comparison of measurement models

Model description	$c\chi^2$	df	χ^2/df	$\Delta\chi^2$	RMSEA	CFI	TLI	SRMR
1. Four-factor model (GCB, DPR, WE, TI)	296.15	165	1.79	—	.05	.98	.97	.05
2. Three-factor model (GCB and DPR combined as one factor)	1190.38	168	7.09	894.23	.13	.80	.78	.09
3. Three-factor model (WE and TI combined as one factor)	1345.85	165	9.16	1049.70	.14	.77	.74	.15
4. Two-factor model (GCB, DPR, and WE combined as one factor)	2213.50	169	13.10	1917.35	.18	.61	.56	.15
5. One-factor model (all items combined as one factor)	3243.30	170	19.08	2947.15	.22	.41	.34	.17

GCB = Group Citizenship Behavior. DPR = Doctor-patient Relationship. WE = Work Engagement. TI = Turnover Intention.

Table 2. Means, standard deviations, and correlations among the key variables. Chronbach's alpha on the diagonal

Variable	Mean (SD)	1	2	3	4
1. GCB	5.18 (0.67)	(.91)			
2. DPR	5.23 (0.54)	.53**	(.88)		
3. Work engagement	4.83 (0.86)	.33**	.29**	(.90)	
4. Turnover intention	1.67 (0.81)	-.20**	-.20**	-.40**	(.90)

** $p < .01$. GCB = Group Citizenship Behavior. DPR = Doctor-patient Relationship

Table 3 ANOVA results of perceived GCB by work units

Work Unit	Score
Oncology and Rehabilitation (n=23)	5.85±0.48 ^a
Emergency, Anesthesiology, and Intensive Care Unit (n=45)	5.42±0.58 ^{ab}
Obstetrics and Gynecology, and Pediatrics (n=44)	5.19±0.45 ^a
Surgery (n=112)	5.17±0.73 ^a
Community-based Health Service Centers and Other Institutions (n=27)	5.16±0.60 ^a
Medical Technologies (n=47)	5.13±0.59 ^a
Internal Medicine (n=83)	4.92±0.70 ^{ab}
F	7.55***

Note: Mean values are reported with standard deviations in parentheses; Means with the same superscript letter (a or b) are significantly different at the .05 level by post hoc Hochberg's GT2 test; ***p < .001.

Table 4. Testing the mediation effect of DPR on TI

Predictors	Model 1 (TI)		Model 2 (WE)		Model 3 (TI)	
	β	t	β	t	β	t
DPR	-.30	-4.02***	.47	5.98***	-.14	-1.91
WE					-.34	-7.49***
R2	.04		.09		.17	
F	16.19***		35.79***		37.35***	

*** $p < .001$. DPR = Doctor-patient Relationship. WE = Work Engagement. TI = Turnover Intention.

Table 5 Testing the moderated mediation effect of DPR on TI

Predictors	Model 1 (TI)		Model 2 (WE)		Model 3 (TI)	
	b	t	b	t	b	t
DPR	-.21	-2.42*	.28	3.12**	-.12	-1.46
GCB	-.16	-2.24*	.31	4.29***	-.06	-.81
DPR× GCB	-.23	-2.26*	.26	2.53*	-.15	-1.51
WE					-.33	-6.89***
WE× GCB					-.02	-.25
R2	.07		.14		.17	
F	8.78***		20.65**		15.50***	

* $p < 0.05$; ** $p < .01$; *** $p < .001$

GCB = Group Citizenship Behavior. DPR = Doctor-patient Relationship. WE = Work Engagement. TI = Turnover Intention.

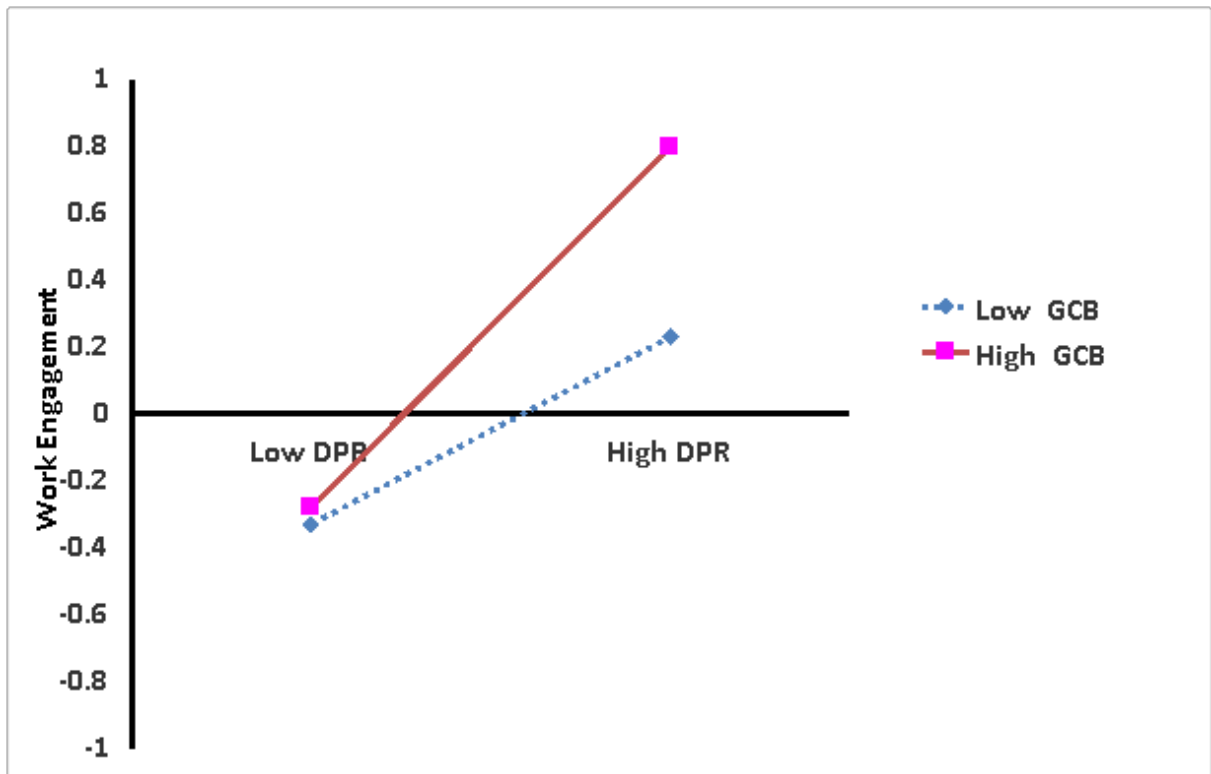


Figure 1. The interaction between GCB and DPR on Work Engagement