Research on the influence of physician-work environment fitting on turnover intention-mediating role of job burnout

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Abstract. From the perspective of Person-environment fit (PEF), this paper took job burnout as a mediating variable to study the influence of physician-work environment fitting on turnover intention. The mediating model of physician-work environment fitting, job burnout and turnover intention was fitted through the questionnaire survey results of 250 physicians in class3-A hospitals in Hubei province. The mediating effect accounts for 47.4% of the total effect between the two. The fitting degree between physicians-work environment in the class3-A hospitals in Hubei province was general (5.62±0.75), and the burnout situation and turnover tendency were not obvious (3.46±0.91, 3.67±1.34). The fitting degree between physicians and hospitals, as well as colleagues were important factors affecting the turnover of physician. In order to alleviate physicians burnout and reduce the turnover rate, the hospital should promote the cooperation and communication between physicians, face up to and meet the economic and psychological needs of physicians, and improve the fitting degree between physician-work environment. Finally, the paper puts forward some suggestions on the intervention of the hospital environment.

1. Introduction
In the future, the competition of hospitals is the competition of high-quality physicians, especially with the spread of new crown disease in the world. Whether physicians can be retained and encouraged to love their jobs and improve their performance has become a growing concern of hospital managers. There have been theoretical and empirical studies that job burnout is an important reason affecting the turnover of physicians. Physician Burnout is a global problem. According to Medscape's annual survey of more than 15,000 physician members worldwide, 50% of the surveyed physicians reported anxiety and 44% burnout, three times the rate for the general profession. Anxiety and burnout can lead to more medical errors, less care for patients, and difficulty working with colleagues [3-4]. As a society driven by interpersonal relationship, people in China are more likely to evaluate their psychological feelings of satisfaction, ennui and so on from the perspective of interaction between self and social relationship, for example, Chinese employees are more likely to derive psychological satisfaction from the quality of their interaction with the work environment (relationship-oriented) to judge their potential for self-development [5]. So this paper studies the relationship between physician-environment fit, burnout and turnover intention from the perspective of person-environment interaction (fit). Previous studies show that job burnout is the internal cause of the influence of physician-work environment match on physicians, and the degree of physician-environment match
negatively affects job burnout, and then has an effect on physicians' turnover intention. In conclusion, we propose the following hypothesis: Hypothesis 1: physician-work environment matching will affect the turnover intention of physicians; Hypothesis 2: Job burnout plays an intermediary role in the influence of physician-environment matching on turnover intention.

2. Data sources and methods

2.1. Object of study
The subjects were selected from 4 class-3A hospitals in Hubei Province (2 in Wuhan, 1 in Xiangfan City and 1 in Shiyan) from November 2019 to December 2019, in the outpatient department, Emergency Department and other different departments to take snowball sampling on-the-job Physicians on-the-spot investigation. A total of 250 questionnaires were distributed and 158 valid questionnaires were recovered, with an effective recovery rate of 63.2%.

2.2. Methodology
Personal information questionnaire. The contents include the basic information of the subjects (gender, age, marital status, educational level, professional title, department, Income and employment form, etc.).

Physicians-work Environment Fit (PEF) scale. The "environment" of this project is defined as "the internal working environment of the physician" 5, referring to the human-environment matching scale developed by Jansen (2006) [6] and Weng Qingxiong (2015) [5], including 6 dimensions, there were 6 types of match between physicians and occupations, between physicians and jobs, between physicians and organizations, between physicians and groups, between physicians and superiors, and between physicians and patients. The likert 7-point scale, ranging from very agree to very disagree, scored 7-1 points. The higher the score, the better the match [5-6].

Burnout inventory. Referring to Zhang Yimin (2011) [7] and Waddimba (2017) [8], the burnout scale included 9 questions in 3 dimensions (3 for emotional exhaustion, 3 for depersonalization and 3 for professional accomplishment). Using the Likert 7-point scoring method, the higher the total score, the higher the burnout degree [7-8].

Physicians' turnover intention type scale. Referring to Zhang Yimin's (2011) [7] physician turnover intention scale, the "physician turnover intention" in this project is to evaluate the re-selection of working environment after burnout, and is the next withdrawal behavior when employees experience dissatisfaction[7], by definition, it is equivalent to "turnover intention".

2.3. Statistical method
The data base was established by EPIDATA3.0 and analyzed by SPSS24.0. The confidence interval was 95%. A descriptive statistical analysis, Pearson Correlation Analysis and Regression analysis analysis were performed. The difference was statistically significant (p < 0.01). The measurement data (including the results of the scale) were expressed as X±S. The mediating utility analysis adopts the procedure of mediating effect test proposed by Wen Zhonglin et al. The Regression Coefficient is tested in three steps, and the original items are combined for data packing and centralization [10].

3. Results

3.1. The reliability and validity analysis
The reliability of each variable was analyzed, internal Consistency Cronbach's is between 0.794 and 0.974, indicating good internal consistency among variables. The results of confirmatory factor analysis showed that the factor load of each dimension was from 0.820 to 0.972, the combined validity CR was more than 0.7, AVE was from 0.604 to 0.850, the average variance extraction AVE was more than 0.5, and both AVE and CR met the standard.
3.2. Variables and correlation analysis of each dimension

3.2.1. Three variables are significantly correlated, the results are shown in Table 1:

| Variable                        | Physicians and environment fit | Career burnout | Turnover intention |
|--------------------------------|--------------------------------|----------------|--------------------|
| physicians and environment fit | 1                              |                |                    |
| career burnout                 | -0.26**                        | 1              |                    |
| turnover intention             | -0.34**                        | 0.67**         | 1                  |

**P<0.01

3.2.2. Correlation between dimensions. In order to study the relationship between turnover intention type and physician-environment matching type, this study investigated the six dimensions of physician-environment matching and the three dimensions of Person correlation Coefficient of turnover intention, the results showed that physician-hospital match (r=0.320) and physician-colleague match (r=0.341) were most correlated with turnover intention. (Chart Ellipsis)

3.3. Results of Intermediate effect test

Intermediate effect refers to the influence relationship between variables (X-Y) is not a direct causal chain, but through the indirect influence of one or more variables (M) [9]. In the three-step regression analysis of the intermediate utility test, the four standardized regression coefficients were all statistically significant (P<0.05). c²=-0.18, P=0.004, significant at the level of 0.01, were partial mediations. Hypothesis 2 held. "physician-work environment fit"(PEF) has some direct effect on "turnover intention", the mediating effect of the independent variable "physician-work environment fit"(PEF) on the dependent variable "turnover intention" is not completely achieved through the mediating effect of the mediating variable "job burnout", The results of the regression analysis are shown in Table 2: a= -0.26, b=0.62, c=-0.34. The contribution of mediating effect to the total effect was as follows:

\[ Effect \ M = ab/c \]  

The effect is 0.26×0.62/-0.34=0.474 (47.4%). Mediating Effect explained that the variance of dependent variable was sqrt(0.461-0.110)=0.351(35.1%).

| step  | Dependent variable | independent variable | Standardized Regression Coefficient | t      | Adjusted R² |
|-------|--------------------|----------------------|-------------------------------------|--------|-------------|
| step1 | turnover intention(Y) | PEF(X)               | -0.34                               | -4.52**| 0.11        |
| step2 | job burnout(M)     | PEF(X)               | -0.26                               | -3.42**| 0.06        |
| step3 | turnover intention(Y) | PEF(X)               | -0.18                               | -2.93**| 0.46        |
|       | job burnout(M)     | job burnout(M)       | 0.62                                | 10.12**|             |

**P<0.01

At the same time, the results of step 1 also showed a significant correlation between physician-environment fit and turnover intention. In conclusion, both hypotheses are valid.

4. Discussion

4.1. The match of physician and Environment is general, the job burnout is not serious, the turnover intention is not obvious

The mean value of the three variables of physician and environment match, job burnout and turnover intention is 5.620.75, 3.460.91, 3.671.34. The results showed that the fit between the physicians and the environment in the third-grade hospitals of Hubei Province was general, and the job burnout and
turnover intention were not obvious. In the past two years, China's medical reform has achieved initial results, especially for the adjustment of physicians' reasonable income structure, the crackdown on "Yi Nao" (Violent medical disputes), and the promulgation of the "regulations on the prevention and handling of medical disputes", which has led to a downward trend in physician-patient disputes, the physician's tiredness was initially relieved[12]. However, from the results of the interviews conducted in this study, it is also found that physicians still perceive more burnout among physicians around them, but the symptoms are not obvious. This may be numbness or lack of attention, the open-ended questions on burnout intervention in this study also show that physicians are very interested in psychological intervention. In the United States, which is generally considered to have a better medical environment and a higher income for physicians, the rate of burnout among physicians is still high, especially among family physicians and female physicians, intervention Studies in particular.

4.2. Physician burnout is an important mediating variable between physician-environment fit and turnover intention

The mediating effect of Physician Job burnout was 47.4%, which indicated that job burnout was an important mediator between physician-environment match and turnover intention, which was similar to the results of Zhang Yimin (2011) [7], Luo Lian (2018) [13] and Vianen (2018) [14]. This further confirms the importance of physician-to-environment matching, in particular the matching of physicians with hospitals, and physicians with colleagues, that are most relevant to departures, departures, and medical abandonment, and which hospital managers need to focus on. The matching of physician and environment can reduce burnout and turnover tendency, and has positive effect on the relationship between physicians and patients [13-15].

4.3. The match between physicians and work environment will significantly affect the turnover rate of physicians.

The match between physicians and hospitals is mainly that hospitals meet the needs of physicians, for example, whether the treatment of the hospital matches the physician's work skills, efforts, qualifications, achievements and responsibilities; whether the physician matches his colleagues, mainly the respect and cooperation between colleagues and the physician's own efforts, it's about giving and receiving [14]. Therefore, hospitals should create the conditions for cooperation and interaction among physicians, constantly weigh physicians' values, expectations and rewards (both economic and non-economic), and create a working atmosphere of mutual respect and cooperation in hospitals. According to a meta-analysis from Lancet (2016), the use of systematic environmental interventions in hospitals can significantly reduce physicians' burnout, especially the emotional exhaustion score and the depersonalization score, increase Physician Input [1]. The environmental intervention measures adopted in foreign countries for physicians' work environment include revising clinical work flow, shortening shift time, shortening rotation of resident physicians, setting up work team, building more flat colleague relationship, etc. Individual interventions included group sessions, stress management and self-management training, communication skills training, and a sense of belonging intervention 1. For example, the Mayo Clinic has a physician's health intervention program, with an annual grant to study the relationship between physician burnout, health, and job engagement, "Mayo's mutual commitments to physicians and scientists" is the hospital's human resources management guide, and every year the hospital rates Mayo administrators for leadership, in terms of promoting superior-subordinate relationships and good interactions among colleagues, this indicator is considered to be more important than performance for the long-term well-being of hospitals.

5. Conclusions and research prospect

From the perspective of the classical theory of person-environment match, combining with the characteristics of medical profession and the nature of physicians' work, this study constructed the scale of physician-environment match and the scale of physicians' turnover intention. Then, we use the data to fit the hypothesis model, and verify the mediating role of job burnout in the relationship
between physician-environment matching and turnover intention, which lays a foundation for the future empirical research on physician-environment matching. The shortcomings and prospects of this study are: First, the excessive number of items in the human-environment matching scale will result in more wrong choices and lower efficiency in filling in the questionnaire, which will simplify the scale or study one of the dimensions in the future; second, this study was carried out before the outbreak of the new crown epidemic, the physician's professional attitude will change after the epidemic, and now the study can be compared with it, to find the impact of emergency on the physician-patient relationship of sustainability and timeliness.

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